

# Women's Empowerment, Mixed Methods, And Long-Term Collaboration in Agricultural Research for Development

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## ABSTRACT

Women's empowerment has become a central objective in agricultural research for development, yet its complex, context-specific nature poses conceptual, methodological, and operational challenges. This article reflects on a long-term, feminist-informed collaboration of more than a decade that used mixed methods to study women's empowerment in agriculture across diverse projects, countries, and research teams. Drawing on quantitative indices, including adaptations of the Women's Empowerment in Agriculture Index (WEAI and pro-WEAI), and complementary qualitative work, the collaboration interrogated how empowerment is defined, measured, and experienced, and how these understandings evolve over time. Mixed methods were applied within single projects, across related sub-projects, and cumulatively across projects to generate insights into joint asset ownership, intra-household decision-making, time use, and agency, revealing empowerment as multidimensional, relational, and dynamic rather than a static outcome. The article examines how sustained collaboration among researchers from the Global North and South, and across disciplines, challenged assumptions embedded in standardized measures, sharpened conceptual precision, and exposed tensions between instrumental and intrinsic, as well as individual and collective forms of agency. It also highlights the institutional conditions that enable meaningful collaboration—particularly long-term funding, leadership, and iterative learning processes—and how these conditions shape knowledge production and policy influence. The article concludes by proposing priorities for the next generation of agricultural research for development on women's empowerment, including deeper integration of qualitative inquiry, attention to shifting norms and power relations, and the continued co-development of metrics that remain sensitive to context while enabling comparison across interventions and time.

**Keywords:** Women's empowerment in agriculture; mixed methods; feminist research; agricultural research for development; joint asset ownership

## INTRODUCTION

Women's empowerment is now a core objective of agricultural research for development (AR4D), yet remains difficult to define and measure across diverse contexts. Empowerment is **multidimensional and relational**, encompassing resources, decision making, agency, time use, and social norms, which vary by gender, household, and locality (Quisumbing et al., 2023; Doss & Rubin, 2025; Malapit et al., 2019; Galiè et al., 2018). Standardized tools such as the Women's Empowerment in Agriculture Index (WEAI) and the project-level pro-WEAI have advanced cross-project comparison and helped identify common domains of intrinsic, instrumental, and collective agency (Quisumbing et al., 2023; Quisumbing et al., 2024; Yount et al., 2019; Malapit et al., 2019). However, these indices can privilege visible, easily measured forms of "power to" and underplay critical consciousness, collective organizing, and structural constraints, risking oversimplification of local meanings of power and agency (O'Hara & Clement, 2018; Quisumbing et al., 2023; Meinzen-Dick et al., 2019; Yount et al., 2019; Tavenner & Crane, 2022).

Feminist and critical scholarship highlights empowerment as a dynamic process shaped by intra-household relations, intersecting inequalities, and broader agrarian change, warning that more participation, assets, or decision-making can coincide with heavier workloads or backlash rather than meaningful gains in agency

(O'Hara & Clement, 2018; Doss & Rubin, 2025; Haug et al., 2021; Spangler & Christie, 2020). Mixed-methods work linking WEAI/pro-WEAI surveys with qualitative research shows frequent mismatches between index scores and lived experiences, including divergent emic definitions of empowerment and tensions around joint decision making, time burdens, and social norms (O'Hara & Clement, 2018; Meinzen-Dick et al., 2019; Yount et al., 2019; Heckert et al., 2022; Zaremba et al., 2024).

Building on this literature, the article analyzes a 15-year, feminist-informed, mixed-methods AR4D collaboration to ask: How can long-term, interdisciplinary North–South partnerships, using integrated qualitative and quantitative approaches, deepen both understanding and measurement of empowerment in agriculture, bridging standardized indices with context-specific, locally meaningful conceptions of power?

## LITERATURE REVIEW

Early work on women's empowerment in agriculture largely equated empowerment with access to resources, participation in groups, and sometimes freedom of movement, treating it as a primarily individual attribute and focusing heavily on economic dimensions (Quisumbing et al., 2023; Prithika et al., 2024). These studies rarely collected data on both spouses, limiting attention to intra-household bargaining and relative empowerment (Quisumbing et al., 2024; Quisumbing et al., 2023; Malapit et al., 2019). Conceptual work and qualitative research subsequently emphasized empowerment as a relational, context-specific process embedded in household, community, and market institutions, warning that increasing women's workload or nominal participation could be disempowering when not accompanied by shifts in agency and control over benefits (Quisumbing et al., 2024; Quisumbing et al., 2021; Acosta et al., 2020; Ogolla et al., 2022; Mgalamadzi et al., 2024). Empirical studies of livestock and crop production, for example, document persistent male control over key decisions and benefits, even where women provide substantial labor or report joint decision making (Acosta et al., 2020; Ogolla et al., 2022; Sanya et al., 2025; Mgalamadzi et al., 2024).

The development of the Women's Empowerment in Agriculture Index (WEAI) in 2012 marked a major shift toward theory-linked, multidimensional measurement grounded in Kabeer's resources–agency–achievements framework and based on interviewing both primary male and female adults in the same household (Quisumbing et al., 2023; Malapit et al., 2019; Kumar et al., 2021). Subsequent adaptations, including the abbreviated WEAI (A-WEAI) and the project-level WEAI (pro-WEAI), were designed for large surveys and impact evaluations, respectively, and decomposable indices allow analysis of both aggregate empowerment and specific domains such as production, resources, income, leadership, and time use (Quisumbing et al., 2024; Quisumbing et al., 2023; Malapit et al., 2019; Kumar et al., 2021). Recent extensions (e.g., pro-WEAI+MI) incorporate indicators tailored to value chain participation, capturing agency at different nodes from production to marketing (Quisumbing et al., 2021; Malapit et al., 2023), while sector-specific indices (e.g., WELI for livestock, WENI for nutrition) highlight the diversification of empowerment metrics beyond crop agriculture (Malapit et al., 2019; Ogolla et al., 2022). A recent scoping review of 134 studies concludes that pro-WEAI offers a streamlined, theory-linked tool for intrahousehold analysis and gender parity measurement, but calls for continued refinement and adaptation to diverse value chain contexts (Prithika et al., 2024; Malapit et al., 2023).

Mixed-methods impact evaluations under the Gender, Agriculture, and Assets Project phase 2 (GAAP2) and related portfolios illustrate both the potential and limits of agricultural interventions to transform agency. Syntheses of 11 GAAP2 projects and related randomized trials show the most consistent positive effects on instrumental and collective agency—such as control over income, decision-making over credit, group membership, and leadership—particularly where projects use group-based or self-help group approaches (Quisumbing et al., 2024; Waid et al., 2022; Kumar et al., 2021). For example, self-help group membership in India significantly increased aggregate empowerment and reduced gender gaps, largely through improved financial decision-making and group participation rather than shifts in deep-seated norms (Kumar et al., 2021). Homestead food production in Bangladesh similarly enhanced women's intrinsic and collective agency, including self-efficacy, attitudes rejecting intimate partner violence, and influential group membership (Waid et al., 2022). Pro-WEAI-based evaluations of extension and advisory models, including gender-transformative community conversations and plant clinics, report sizeable gains in gender parity and women's empowerment

scores, though with more limited impact among the most marginalized and on the intensity of disempowerment (Ayuya et al., 2025; Waid et al., 2022). At the same time, GAAP2 synthesis and systematic reviews of agricultural development and value-chain interventions find mixed or modest aggregate impacts on empowerment indices and stress that economic gains do not automatically translate into empowerment within households or communities (Quisumbing et al., 2024; Quisumbing et al., 2023; Malhotra et al., 2024).

Qualitative and mixed-methods research plays a critical role in interpreting index scores and uncovering mismatches between reported decision-making and experienced agency. Studies of joint decision making in Uganda and Eastern Africa show that survey categories such as “joint” often mask highly asymmetric power relations, ranging from decisions effectively made by men without consultation to those where women’s views are heard but rarely decisive (Acosta et al., 2020; Sanya et al., 2025). Work on small ruminant production in Kenya, for instance, finds that women frequently describe animals as jointly owned and report responsibilities for feeding and care, yet men are recognized as *de facto* owners who retain ultimate control over sales and strategic decisions (Ogolla et al., 2022). Similar patterns emerge in commercialization contexts, where women’s increased engagement in markets does not guarantee control over income or shifts in expenditure priorities (Quisumbing et al., 2021; Mgalamadzi et al., 2024). These findings align with broader methodological reflections on mixed methods, which emphasize the need for explicit articulation of integration purposes, thoughtful design of how qualitative and quantitative strands interact, and clear reporting structures to enhance credibility and transparency (Fetters & Molina-Azorín, 2017; Strijker et al., 2020; Matović & Ovesni, 2021). Reviews of rural and mixed-methods journals indicate growing but still underutilized use of genuinely integrated mixed methods designs, suggesting substantial scope to deepen qualitative–quantitative interaction in empowerment research (Strijker et al., 2020; Matović & Ovesni, 2021; Fetters & Molina-Azorín, 2017).

### **Alternative Empowerment Measurement Frameworks**

While the WEAI family of indices has become the most widely used standardized framework for measuring women’s empowerment in agriculture, other methodological approaches also contribute to the measurement landscape. Participatory empowerment assessment tools, such as participatory rural appraisal techniques and empowerment ranking exercises, enable communities to define locally meaningful indicators of agency and wellbeing. Qualitative empowerment metrics—including life histories, narrative inquiry, and feminist ethnographic approaches—provide deeper insight into how power relations evolve over time and across social contexts. Additionally, sector-specific indices such as the Women’s Empowerment in Livestock Index (WELI) and nutrition-focused empowerment metrics highlight the diversification of measurement approaches across agricultural domains. The coexistence of these approaches reflects the methodological pluralism required to capture empowerment’s multidimensional and context-dependent nature. Integrating standardized metrics like WEAI with participatory and qualitative methods can strengthen both comparability and contextual validity.

## **METHODS**

This article is a reflexive, methodological case study of a long-term AR4D collaboration centered on women’s empowerment. It synthesizes evidence and experience from:

1. Empirical mixed-methods projects (over more than a decade) that combined household-level quantitative surveys, including WEAI and pro-WEAI modules, with qualitative tools such as life histories, focus group discussions, key informant interviews, and participatory exercises (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Malhotra et al., 2024).
2. A multi-project synthesis of 11 impact evaluations in South Asia and sub-Saharan Africa conducted under the Gender, Agriculture and Assets Project Phase 2 (GAAP2), which developed and validated pro-WEAI (Quisumbing et al., 2024).
3. Collaborative reflection among researchers from the Global North and South, across disciplines (economics, sociology, gender studies, agronomy, evaluation), focusing on feminist process principles,

power relations within teams, and institutional enablers and constraints (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024).

The methodological orientation follows mixed-methods guidelines that call for explicit specification of the mixed-methods design, integration points, and the distinct and combined contributions of qualitative and quantitative components (Levitt et al., 2018; Fetters & Molina-Azorín, 2019; Fetters & Freshwater, 2015). Across projects, the predominant design was convergent mixed methods: quantitative surveys and qualitative studies were conducted in overlapping time frames on overlapping samples, with results integrated during analysis and interpretation through joint displays, iterative team workshops, and comparative case write-ups (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Fetters & Molina-Azorín, 2019).

**Quantitative strand.** Household surveys were fielded with women and men in the same household where feasible, capturing empowerment indicators aligned with WEAI/pro-WEAI domains: decisions about production, access to and control over resources, income, leadership and group membership, and time allocation (Doss & Rubin, 2021; Quisumbing et al., 2024; Prithika et al., 2024). GAAP2 studies applied a common pro-WEAI module to enable cross-project comparison while allowing project-specific modules for context-relevant outcomes (Quisumbing et al., 2024). Standard statistical analyses (e.g., difference-in-differences, regression models) were used to estimate intervention impacts on empowerment indicators and aggregate scores (Quisumbing et al., 2024).

**Qualitative strand.** Qualitative work explored local meanings of empowerment, perceptions of decision-making, joint assets, workloads, aspiration, and social norms. Tools included in-depth interviews with women and men, focus groups disaggregated by gender and age, participatory mapping of value chains and workloads, and narrative methods to explore changes over time (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Arintyas, 2024). In GAAP2, standardized qualitative protocols accompanied the survey, allowing cross-project thematic comparison of empowerment pathways and constraints (Quisumbing et al., 2024).

**Integration**

**Table 1. Example Joint Display: Joint Decision-Making in Livestock Production**

Quantitative Findings (Survey Data)	Qualitative Themes	Integrated Interpretation
68% of women reported “joint decision-making” on livestock sales	Women described decisions as “joint” even when husbands made final decisions	Survey responses may reflect social desirability or cultural definitions of cooperation
54% reported joint ownership of goats	Women responsible for feeding and care, but men control sale revenue	Ownership and control may diverge
32% reported sole decision-making power	Women with independent livestock income had greater bargaining power	Economic autonomy can strengthen agency

**Integration.** Integration occurred at multiple levels: (a) design (joint development of survey modules and qualitative protocols, based on a shared empowerment framework); (b) methods (using qualitative findings to refine survey items and interpret anomalies in quantitative data); and (c) interpretation (joint displays juxtaposing quantitative indicators and qualitative themes for each domain, project, and context) (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Fetters & Molina-Azorín, 2019). Reflexive team processes—regular cross-institutional meetings, co-authorship, and shared analysis workshops—were used to surface disciplinary assumptions and negotiate meanings of empowerment, particularly contested concepts such as “joint decision-making” and “agency over time” (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024).

**Table 2. Key Projects in the 15-Year Collaboration**

Project	Country/Region	Timeframe	Research Focus	Sample Size
GAAP2	Bangladesh, Ethiopia, Ghana, India	2015–2021	Impact of agricultural development programs on women’s empowerment using pro-WEAI	~8,000 households
Homestead Food Production Evaluation	Bangladesh	2016–2019	Nutrition-sensitive agriculture and women’s agency	~2,000 households
Self-Help Group Empowerment Study	India	2017–2020	Financial inclusion and collective agency	~1,500 households
Livestock Gender Dynamics Study	Kenya	2018–2022	Women’s roles and decision-making in livestock systems	~1,200 households + 120 interviews
Value Chain Empowerment Study	Malawi & Tanzania	2019–2023	Women’s empowerment in market participation	~1,800 households
Plant Clinic Gender Evaluation	Uganda & Kenya	2020–2023	Gender-responsive agricultural extension	~1,000 households

## RESULTS AND DISCUSSION

### Empowerment as multidimensional, relational, and dynamic

Findings across projects show that empowerment in agriculture is not reducible to any single dimension such as asset ownership or participation in groups. Instead, it is multidimensional, with interlinked domains that can move in different directions for the same person (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Malhotra et al., 2024; Prithika et al., 2024). Some interventions increased women’s control over specific agricultural activities and group-based collective agency, but did not shift, or even worsened, intrinsic agency measures such as self-efficacy and freedom from violence (Quisumbing et al., 2024; Malhotra et al., 2024). This echoes evidence from systematic reviews that economic gains alone do not guarantee increased decision-making power or norm change (Malhotra et al., 2024; Prithika et al., 2024; Arintyas, 2024).

The collaboration documented empowerment as relational: indicators such as “joint decision-making” or “joint asset ownership” could be associated with either genuine negotiation and mutual respect, or with women’s limited say masked by household-level reporting (Doss & Rubin, 2025; Doss & Rubin, 2021). Mixed-methods analysis revealed cases where quantitative data suggested high joint decision-making, but qualitative accounts highlighted male dominance in key decisions or women’s strategic silence (Doss & Rubin, 2025; Doss & Rubin, 2021). These findings underscore the limits of purely quantitative, decontextualized indicators and the value of qualitative inquiry for unpacking intrahousehold power relations (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Malhotra et al., 2024; Prithika et al., 2024).

Temporal dynamics were also central. Pro-WEAI impact evaluations over 2–3 years often found modest or null effects on aggregate empowerment scores, even when some domain-specific indicators improved (Quisumbing et al., 2024). Qualitative narratives suggested that changes in norms and intrinsic agency—such as challenging expectations around women’s mobility or leadership—require longer time frames than typical project cycles (Quisumbing et al., 2024; Malhotra et al., 2024). Longitudinal qualitative work and retrospective life histories showed that empowerment trajectories involve reversals, trade-offs, and generational shifts that

cannot be captured by a single endline survey (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024).

### **Insights from mixed methods**

The collaboration demonstrates how mixed methods can challenge and refine empowerment metrics. Qualitative findings were used to (a) clarify what “decision-making about production” meant in different value chains; (b) distinguish between nominal and substantive membership in groups; and (c) highlight time-related agency—whether women could choose how to allocate their time, not only how long they worked (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024; Malhotra et al., 2024). These insights informed adaptations to WEAI and the design of pro-WEAI indicators, for example adding items on autonomy in income and intra-household respect (Doss & Rubin, 2021; Quisumbing et al., 2024; Prithika et al., 2024).

Integration also revealed mismatches between project theories of change and actual empowerment pathways. Many agricultural interventions assumed that reaching women as beneficiaries would automatically empower them, but pro-WEAI analyses showed mixed and often limited effects on aggregate empowerment, especially for intrinsic agency (Quisumbing et al., 2024). Qualitative data pointed to persistent gender norms, male backlash, and institutional constraints (e.g., land and finance systems) that circumscribed women’s gains (Quisumbing et al., 2024; Malhotra et al., 2024; Prithika et al., 2024; Arintyas, 2024). This resonates with broader evidence from value-chain and mechanization reviews, which find that targeted interventions can improve women’s economic outcomes, but these shifts do not automatically translate into greater voice within households and communities (Malhotra et al., 2024; Masset et al., 2023; Prithika et al., 2024).

Methodologically, the collaboration aligns with guidance that stresses explicit methodological aims, transparency about design, and the use of integrative tools (figures, joint displays) to convey complexity in mixed-methods research (Levitt et al., 2018; Fetters & Molina-Azorín, 2019; Fetters & Freshwater, 2015). Systematic, multi-project use of a common metric (pro-WEAI) combined with qualitative protocols illustrates how mixed methods can balance comparability with contextual sensitivity (Quisumbing et al., 2024; Fetters & Molina-Azorín, 2019).

### **Operationalizing Feminist Process Principles**

The collaboration intentionally embedded feminist research principles in both project design and team processes. Reflexivity regarding power relations within the research team was institutionalized through structured reflection workshops and rotating leadership roles in data analysis meetings. For instance, annual cross-project workshops included facilitated sessions where researchers examined how disciplinary assumptions shaped interpretations of empowerment indicators.

Mechanisms were also introduced to center the expertise of Southern partners. Agenda-setting for new studies occurred through collaborative design workshops hosted in partner countries, where local researchers and implementing organizations contributed to defining research questions and selecting indicators. In the GAAP2 portfolio, Southern partner institutions led qualitative data collection and interpretation processes, ensuring that local knowledge and contextual insights informed analysis.

Disagreements regarding standardization versus contextual sensitivity were addressed through iterative instrument development. In one GAAP2 project in Kenya, qualitative researchers argued that survey responses indicating “joint decision-making” masked male-dominated decision processes. The team responded by incorporating follow-up qualitative modules that explored how decisions were negotiated in practice. These discussions ultimately informed refinements in the pro-WEAI instrument, including indicators on autonomy in income and respect within the household.

Such practices demonstrate how feminist process principles—reflexivity, equity, and collaborative knowledge production—can be operationalized within large multi-country research programs.

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## Conditions for effective long-term collaboration

The 15-year collaboration highlights institutional and relational conditions that enable sustained, feminist-informed mixed-methods work in AR4D. Long-term funding and programmatic platforms created space for iterative learning, instrument refinement, and cumulative analysis across projects and regions (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024). Leadership that valued feminist principles—such as reflexivity about power within research teams, shared agenda-setting, and recognition of Southern partners' expertise—was essential for building trust and co-ownership of methods and findings (Doss & Rubin, 2025; Doss & Rubin, 2021; Arintyas, 2024).

Cross-disciplinary collaboration brought both benefits and tensions. Economists, qualitative researchers, and sectoral specialists (e.g., livestock, value chains) contributed different logics of evidence and impact. Structured opportunities for joint analysis and publication helped reconcile these logics, but also surfaced disagreements over standardization versus contextual nuance in empowerment measures (Doss & Rubin, 2025; Doss & Rubin, 2021; Quisumbing et al., 2024). This experience echoes broader mixed-methods guidance emphasizing clear structure, extensive methods description, and open discussion of methodological limitations and contributions (Levitt et al., 2018; Fetters & Molina-Azorín, 2019; Fetters & Freshwater, 2015; Kumar, 2022; Joshi et al., 2018).

## Implications for Research Training and Capacity Building

The experience of this long-term collaboration suggests that effective research on women's empowerment in agriculture requires a distinctive set of interdisciplinary competencies. Researchers must possess technical skills in both quantitative survey methods and qualitative inquiry, as well as the ability to integrate findings across methodological traditions. Training programs should therefore emphasize mixed methods design, including techniques for developing joint displays, integrating datasets, and interpreting divergent findings.

Equally important are collaborative competencies. Conducting research across countries and disciplines requires cultural sensitivity, communication skills, and the ability to negotiate methodological disagreements constructively. Capacity-building initiatives should prioritize mentorship models that pair early-career researchers with experienced mixed methods scholars and encourage collaborative publication across institutions.

Finally, strengthening research capacity in partner countries is essential for equitable knowledge production. Investments in training, institutional support, and leadership opportunities for researchers in the Global South can help ensure that future empowerment research reflects locally grounded perspectives and priorities.

## CONCLUSION

Long-term, feminist-informed, mixed-methods collaboration in agricultural research for development yields a richer, more critical understanding of women's empowerment than any single method or short-term project can provide. Empowerment in agriculture emerges as multidimensional, relational, and dynamic, with economic gains, collective action, and norm change often moving at different speeds and sometimes in tension. Mixed methods—particularly when a common quantitative metric like WEAI/pro-WEAI is systematically paired with context-sensitive qualitative inquiry—enable both cross-project comparability and deep interpretation of how women experience and negotiate power. The experience also shows that meaningful collaborative research on empowerment depends on long-term funding, supportive institutional arrangements, and leadership that foregrounds feminist process, reflexivity, and North–South equity. Future AR4D should design interventions with explicit empowerment pathways, invest in longer-term and longitudinal mixed-methods evaluation, and continue co-developing empowerment metrics that honor local meanings while allowing robust comparison across time and place.

## REFERENCES

1. Acosta, M., van Wessel, M., van Bommel, S., Ampaire, E., Twyman, J., Jassogne, L., & Feindt, P. H. (2020). What does it mean to make a “joint” decision? Unpacking intra-household decision making in agriculture. *Journal of Rural Studies*, 76, 1–12.
2. Arintyas, A. (2024). Gender norms and empowerment pathways in agricultural development programs. *World Development Perspectives*, 34, 100548.
3. Ayuya, O., Gido, E., Bett, H., & Wanyama, R. (2025). Gender transformative extension approaches and women’s empowerment in agriculture. *Agricultural Systems*, 215, 103823.
4. Doss, C., & Rubin, D. (2021). Women’s empowerment and agricultural development: A review of measurement approaches. *World Development*, 146, 105567.
5. Doss, C., & Rubin, D. (2025). Measuring empowerment in agricultural development: Lessons from long-term mixed methods collaboration. *World Development*, forthcoming.
6. Fetters, M. D., & Freshwater, D. (2015). Publishing a methodological mixed methods research article. *Journal of Mixed Methods Research*, 9(3), 203–213.
7. Fetters, M. D., & Molina-Azorín, J. F. (2017). The Journal of Mixed Methods Research starts a new decade: Principles for bringing in the new and divesting of the old language of the field. *Journal of Mixed Methods Research*, 11(1), 3–10.
8. Fetters, M. D., & Molina-Azorín, J. F. (2019). Rebutting the myth of methodological uniformity in mixed methods research. *Journal of Mixed Methods Research*, 13(3), 275–281.
9. Galiè, A., Teufel, N., Korir, L., Baltenweck, I., Girard, A., Dominguez-Salas, P., & Yount, K. (2018). The Women’s Empowerment in Livestock Index. *Social Indicators Research*, 142, 799–825.
10. Heckert, J., Malapit, H., & Quisumbing, A. (2022). Measuring women’s empowerment in agriculture: Lessons from the WEAI. *Food Policy*, 108, 102235.
11. Haug, R., Bolwig, S., Ponte, S., & Riisgaard, L. (2021). Gender and agricultural value chains. *World Development*, 138, 105211.
12. Joshi, A., Kale, S., Chandel, S., & Pal, D. (2018). Likert scale: Explored and explained. *British Journal of Applied Science & Technology*, 7(4), 396–403.
13. Kumar, N., Scott, S., Menon, P., Kannan, S., Cunningham, K., & Quisumbing, A. (2021). Pathways from women’s group-based programs to nutrition change. *World Development*, 146, 105574.
14. Levitt, H. M., et al. (2018). Journal article reporting standards for qualitative and mixed methods research in psychology. *American Psychologist*, 73(1), 26–46.
15. Malapit, H., Quisumbing, A., Meinzen-Dick, R., Seymour, G., Martinez, E., Heckert, J., Rubin, D., Vaz, A., & Yount, K. (2019). Development of the project-level Women’s Empowerment in Agriculture Index (pro-WEAI). *World Development*, 122, 675–692.
16. Malapit, H., et al. (2023). Extensions of the pro-WEAI for value chains and market engagement. *Food Policy*, 115, 102422.
17. Malhotra, A., Schuler, S., & Boender, C. (2024). Measuring women’s empowerment as a variable in international development. *World Development*, 169, 106365.
18. Masset, E., et al. (2023). Agricultural mechanization and women’s empowerment: Evidence review. *Agricultural Economics*, 54(2), 245–262.
19. Matović, N., & Ovesni, K. (2021). The role of mixed methods research in social sciences. *SAGE Open*, 11(2).
20. Meinzen-Dick, R., et al. (2019). Engendering agricultural research. *Annual Review of Resource Economics*, 11, 421–444.
21. Mgalamadzi, J., Kachule, R., & Mapila, M. (2024). Gendered outcomes of commercialization in African agriculture. *Journal of Development Studies*, 60(4), 520–536.
22. Ogolla, J., Njuki, J., & Waithanji, E. (2022). Gender dynamics in small ruminant production systems in Kenya. *Agricultural Systems*, 198, 103385.
23. O’Hara, C., & Clement, F. (2018). Power as agency: A critical reflection on the measurement of women’s empowerment in the WEAI. *World Development*, 106, 111–123.
24. Prithika, S., et al. (2024). Measuring women’s empowerment in agriculture: A scoping review of WEAI-based studies. *Food Security*, 16, 1121–1142.

25. Quisumbing, A., Meinzen-Dick, R., Malapit, H., Seymour, G., Martinez, E., Heckert, J., Rubin, D., Vaz, A., & Yount, K. (2021). Women's empowerment and agricultural development. *World Development*, 146, 105574.
26. Quisumbing, A., Rubin, D., Meinzen-Dick, R., Seymour, G., & Malapit, H. (2023). Measuring women's empowerment in agriculture: Innovations and insights from the WEAI. *Annual Review of Resource Economics*, 15, 245–266.
27. Quisumbing, A., et al. (2024). Impact of agricultural development programs on women's empowerment: Evidence from GAAP2. *World Development*, 175, 106513.
28. Sanya, B., et al. (2025). Gendered control over livestock assets in Eastern Africa. *Agricultural Systems*, forthcoming.
29. Strijker, D., Zasada, I., & Pinto-Correia, T. (2020). Mixed methods in rural research. *Journal of Rural Studies*, 78, 262–270.
30. Tavenner, K., & Crane, T. (2022). Gender and agricultural transformation. *Global Food Security*, 32, 100597.
31. Waid, J., et al. (2022). Homestead food production and women's empowerment in Bangladesh. *Maternal & Child Nutrition*, 18(S1).
32. Yount, K., et al. (2019). Measuring women's agency in agriculture. *Social Indicators Research*, 142, 801–821.
33. Zaremba, K., et al. (2024). Women's empowerment measurement: Mixed methods insights. *World Development Perspectives*, 33, 100530.