

Land, Women and Development: A Systematic Review of Causal Evidence

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Abstract

This article systematically reviews the causal literature on the impacts of women's land rights on development in the Global South, asking how they affect different development outcomes, and what patterns emerge across types of rights, geographies, and methodological approaches. Following the PRISMA protocol, we screen over 800 records and retain 96 studies, covering 46 countries and 202 effects classified in 11 outcomes. Findings show consistently positive effects on *empowerment*, *education*, and *health*, though the latter are less studied. Evidence on *investment*, *financial inclusion*, and *welfare* is more ambiguous, while *natural resource management* and *intra-household dynamics* remain too underexplored for meaningful conclusions. Most research focuses on formal ownership, overlooking the broader 'bundle' of rights; regions outside Africa and South Asia are critically underrepresented. By mapping causal patterns and gaps, this review establishes a systematic evidence map and guides future evaluations addressing thematic and geographic blind spots.

Keywords: land, land rights, women, development, systematic review, PRISMA

JEL: O13, P48, Q15

1. Introduction

Gender-based discrimination in land access is a well-documented issue in empirical literature. Women often have inferior rights to natural resources (Otsuka & Place, 2001), and when they do

hold rights to land, these often apply to smaller or lower-quality plots than those allocated to men (FAO, 2011). This disparity arises not only from discrimination in the allocation of agricultural land but also from unequal access to complementary inputs such as fertilizer, pesticides, and extension services (Burke et al., 2018; Burke & Jayne, 2021; Chu et al., 2023).

Even with formal landownership, effective access and use can be limited by weak institutions that fail to enforce rights. For poor rural women, pursuing justice entails both financial and social costs, especially when family or clan dependence discourages challenging these power structures (Polavarapu, 2020).

Women's land claims often remain weak despite access to formal justice, due to poor enforcement of statutory rights, elite-driven land dispossession, and overlapping legal systems. Customary courts – the main dispute-resolution venues in developing countries – often reflect patriarchal norms that discriminate against women and reinforce gender inequalities (Behrman et al., 2012; Dell'Angelo et al., 2017; Polavarapu, 2020). Legal discrimination at the intersection of land, marriage, and inheritance laws further limits women's rights as their claims often depend on relationships with men, leaving them vulnerable when these ties change or dissolve.

Economic theory and empirical case studies suggest that land access can reduce the gender asset gap, strengthening women's economic security and social status (Bhaumik et al., 2016) and contributing to broader household and community development (Agarwal, 1995; Doss, 2006; Duflo & Udry, 2004; Luke & Munshi, 2011; Quisumbing & Maluccio, 2003). More recently, land rights (LRs) have also been linked to improved climate adaptation and societal resilience (Laura et al., 2023). Yet, the relationship between land access, women's agency, and development remains poorly understood. Empirical findings are heterogeneous across geographies, outcomes and research designs, and much of the discourse continues to rely on fragmented case studies rather than systematic evidence. Consequently, generalized claims – such as the portrayal of land access as a 'panacea for household welfare problems' (Bhaumik et al., 2016, p. 249) – risk overstating the case in the absence of a comprehensive appraisal of the scientific literature.

In this context, a systematic review is both timely and necessary. As global development agendas increasingly prioritize gender equality, LRs, and climate resilience, there is an urgent need for a rigorous synthesis of causal evidence to inform policy and future research. To our knowledge, this is the first systematic review on the land-women-development nexus that applies a standardized protocol of analysis as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021), ensuring transparency and methodological consistency.

A natural point of reference to this work is the earlier review of Meinzen-Dick et al. (2019), which mapped 11 pathways linking women's land rights (WLRs) to poverty reduction, and narratively synthesized the qualitative and quantitative evidence up to 2017. Building on that foundation – but restricting inclusion to studies adopting inferential methods – this review also innovates by: (1) documenting geographic, temporal and methodological trends in the literature, (2) introducing a typology of LRs to assess how different forms of access are explored in the empirical literature, and (3) including publications through late 2024, thereby broadening the temporal coverage of Meinzen-Dick et al. (2019).

Methodologically, our approach also aligns with Lawry et al. (2017) in (1) prioritizing causal identification through quantitative studies that go beyond descriptive analysis, (2) organizing outcomes in ten classes that partly overlap with ours (i.e., investment, productivity, access to credit,

consumption, gender equality), and (3) emphasizing effect heterogeneity across countries and regions. Our review, however, differs in three respects. First, gender is the central organizing principle rather than a subgroup dimension: we restrict inclusion to studies identifying effects of WLRs and track outcomes directly tied to women's agency in households and communities (e.g., *empowerment, health, education*). Second, we introduce a typology of LR, an angle not systematically pursued by Lawry et al. (2017). Finally, to provide a full picture of the evidence base, we also include carefully controlled observational designs, while acknowledging the tradeoffs for internal validity (see Section 4.4).

Therefore, by cutting through the complexity and fragmentation of existing evidence, this review provides a solid grounding for advancing scholarly understanding and policy debates around WLRs and their development implications.

2. Theoretical Perspectives on Securing WLRs

Along the traditional measurement of the gender asset gap, awareness of its implications for development has gradually emerged, with scholars and policymakers linking its reduction to poverty alleviation (de Janvry & Sadoulet, 2016; Meinzen-Dick et al., 2019).

Rooted in institutional theory, this idea highlights the role of property rights in economic development. When farmers enjoy secure property rights and ownership protection, they invest more in their land, enhancing agricultural productivity, natural resource management (NRM), access to credit, and, ultimately, long-term growth in output and income (de Janvry & Sadoulet, 2016). Recognized rights also allow land rental or sales to more efficient users, potentially generating gains from trade. Additionally, better rights make it easier to collateralize land, further enabling investment (de Soto, 2000; Besley, 1995). Several influential studies provide empirical evidence for these claims, particularly in Africa (Goldstein & Udry, 2008; Ali et al., 2011; Deininger et al., 2008).

Although early property rights theory established a connection between landownership and development, it did not incorporate an explicit gender perspective. Yet, it already recognized that a 'male monopoly over property' (Folbre, 1996, p.10) undermines efficiency by limiting women's full participation in economic activities.

During the mid-2000s, policymakers' early enthusiasm for formal, individual land titles (de Soto, 2000) shifted toward recognizing informal and communal rights (Ostrom, 1990) as more effective tools for protecting vulnerable groups from 'land grabs' (De Schutter, 2015). At the same time, many economists moved away from the unitary model of the household (Becker, 1974), which treats the family as a single utility-maximizing entity, in favor of collective frameworks (Chiappori, 1992), particularly intra-household bargaining models (Agarwal, 1997a), which acknowledge that intra-household inequality and different preferences – often gender-based – shape household spending and resource allocation.

Within a bargaining framework, Agarwal (1994) presents three arguments for why WLRs matter for development: efficiency, empowerment and welfare. Efficiency refers to the productive use of land: in line with property rights theory, women with secure land access tend to invest more in productive and sustainable agricultural practices (Goldstein & Udry, 2008) and freely decide what to grow, consume or sell, enhancing food security (Duflo & Udry, 2004; FAO, 2011). Empowerment involves enhancing 'women's agency and voice' (Sen, 1999, p. 193). Land, as a

source of wealth and social status (de Janvry & Sadoulet, 2016), can enhance women's bargaining power and lessen dependence on male relatives. Economic independence, in turn, can mitigate the risk of gender-based violence (Polavarapu, 2020), decrease reliance on transactional sex, and improve women's ability to negotiate safer sex, helping prevent STIs (Conrad & Doss, 2008). These benefits extend to household and community welfare: landownership increases women's influence over nutrition, education and healthcare (Agarwal, 1995) and serves as collateral for such expenses (Menon et al., 2014; Agarwal, 2003). Critics of the unitary model (Ward-Batts, 2008; Lundberg et al., 1997; Armand et al., 2020; Alderman et al., 1995) show that family expenditure patterns depend on who controls assets: women typically allocate resources more equitably and with long-term perspective (Udry, 1996; Deininger et al., 2013; Burrone & Giannelli, 2023; Thomas, 1990; McElroy, 1990), benefiting children's well-being and especially girls' human capital.

Access to land is also expected to encourage women's participation in collective action at local and broader societal levels, potentially enhancing institutional inclusivity. Their involvement in managing village commons, in particular, can strengthen social equity and community resilience, while gender-equitable management of common-pool resources can prevent resource conflict and the 'tragedy of the commons' (Meinzen-Dick et al., 1997; Pandolfelli et al., 2008; Ratner et al., 2013).

Recent research explores how different LR typologies influence development. Moving beyond traditional 'ownership,' scholars increasingly refer to a 'bundle of rights,' a continuum of land-related actions held jointly or individually (Schlager & Ostrom, 1992)¹. Women rarely enjoy a complete 'bundle,' and different rights affect outcomes differently.

Emerging approaches also highlight the distinction between individual and joint rights as a key measure of women's land autonomy (Bhatla et al., 2010). Individual rights, particularly those backed by formal titles, are often more empowering (Agarwal, 2003), as they reduce dependence on others. However, since empowerment depends on what is culturally perceived as legitimate and appropriate (Jackson, 2003), individual ownership can disrupt power relations, triggering conflict and 'male backlash' as predicted by the relative resource theory of domestic violence (Atkinson et al., 2005).

3. Research Aim and Methods

Building on such theoretical arguments, a growing body of empirical research has tested the land-women-development nexus, yet causal relationships remain inconclusive. Findings vary significantly across regions, types of rights, and methodological approaches. While development practitioners promote land tenure security, there is still limited understanding of its broader

¹ Schlager & Ostrom (1992) identify rights of access, withdrawal, management, exclusion and alienation. Empirical studies have adapted this framework to fit case studies, often mapping them into access, use and ownership/control (Meinzen-Dick et al., 2019).

benefits and the contextual factors, such as gender norms and intra-household dynamics, that mediate its impact (Higgins et al., 2018; Lawry et al., 2017).

We therefore propose a systematic review to take stock of such empirical evidence. Specifically, we asked: “How do WLRs affect development outcomes, and what patterns emerge across different types of rights, geographical contexts, and methodological approaches?” This research question guided our effort to synthesize findings, identify evidence gaps, and trace the evolution of research in this domain. We identified well-studied and underexplored outcomes from a gender perspective, and evaluated the direction, consistency, and geographical distribution of findings as well as the methods used to estimate causal effects. Additionally, we examined the extent to which empirical literature distinguishes between (1) individual and joint rights, and (2) different rights within Schlager & Ostrom (1992)’s ‘bundle’.

This review applied the PRISMA 2020 statement, renowned for setting standards for transparent and reproducible systematic reviews (Page et al., 2021).² Our protocol incorporated strategies from seminal works (e.g., Pickering & Byrne, 2014) on systematic reviews in social sciences and was preregistered online³. While systematic reviews have been widely applied to land research, they rarely adopt a gender perspective, which we instead propose in this review.⁴

3.1. Eligibility Criteria

We included peer-reviewed articles or reputable working papers in English that provided causal evidence through observational (with at least multivariate regression), quasi-experimental, or experimental approaches.

Further criteria were inspired by the PICO framework. Eligible studies focused on populations (P) from low- to upper-middle-income countries. In (quasi-)experimental studies, interventions (I) encompassed laws, policies, and land-use changes affecting women’s ability to benefit from land. In observational studies, outcome comparisons based on the presence/absence of rights or varying levels of tenure security for women were used as interventions. Comparisons (C) required baseline groups where women lacked rights or had insecure tenure (using temporal, spatial, or between-group designs). Outcomes (O) were not predefined, to capture the full range of potential impacts as they naturally emerged from the review (Page et al., 2021).

3.2. Search Strategy

We searched Web of Science, Scopus, and EconLit, recognized for their coverage of peer-reviewed development research. We applied a stepwise refinement approach to progressively narrow the search queries (Appendix A). The final query focused on three core themes: land, rights, and women, with minor adjustments to align with databases’ search syntax (Figure 1). In line with the strategy outlined in Section 3, it avoided mentioning specific outcomes (e.g., ‘education’).

² The wide range of outcomes, heterogeneous indicators, and differences in WLRs coding made a formal meta-analysis unfeasible. A systematic review instead enables a structured synthesis that accommodates methodological variation.

³ Methodological details are available in the protocol at [10.17605/OSF.IO/45QKB](https://osf.io/45QKB).

⁴ See de Jong et al. (2021), Higgins et al. (2018), Lawry et al. (2017), Murken & Gornott (2022).

Figure 1: Search query

Database	Search query	Limitations
EconLit	NOFT(wom?n OR gender* OR female) AND NOFT(“land rights” OR “land tenure” OR “property rights” OR “ownership rights” OR “access rights” OR “use rights” OR “tenure rights” OR “inherit* rights” OR “tenure security” OR “management rights” OR “control rights”) AND NOFT(land) AND DTYPE(“Article”) AND PEER(yes) AND LA(English)	Peer reviewed Article English
Scopus	TITLE-ABS-KEY (wom?n OR gender* OR female) AND TITLE-ABS-KEY (“land rights” OR “land tenure” OR “property rights” OR “ownership rights” OR “access rights” OR “use rights” OR “tenure rights” OR “inherit* rights” OR “tenure security” OR “management rights” OR “control rights”) AND TITLE-ABS-KEY (land) AND (LIMIT-TO (SUBJAREA, “SOC”) OR LIMIT-TO (SUBJAREA, “ECON”)) AND (LIMIT-TO(DOCTYPE, “ar”)) AND (LIMIT-TO(LANGUAGE, “English”))	Article Social Sciences Economics English
Web of Science Core Collection	(wom?n OR gender* OR female) AND (“land rights” OR “land tenure” OR “property rights” OR “ownership rights” OR “access rights” OR “use rights” OR “tenure rights” OR “inherit* rights” OR “tenure security” OR “management rights” OR “control rights”) AND land (Topic) AND Article or Early Access (Document Types) AND Economics or Development Studies (Categories) AND English (Languages)	Article Early Access Economics Development Studies English

Source: Authors’ elaboration.

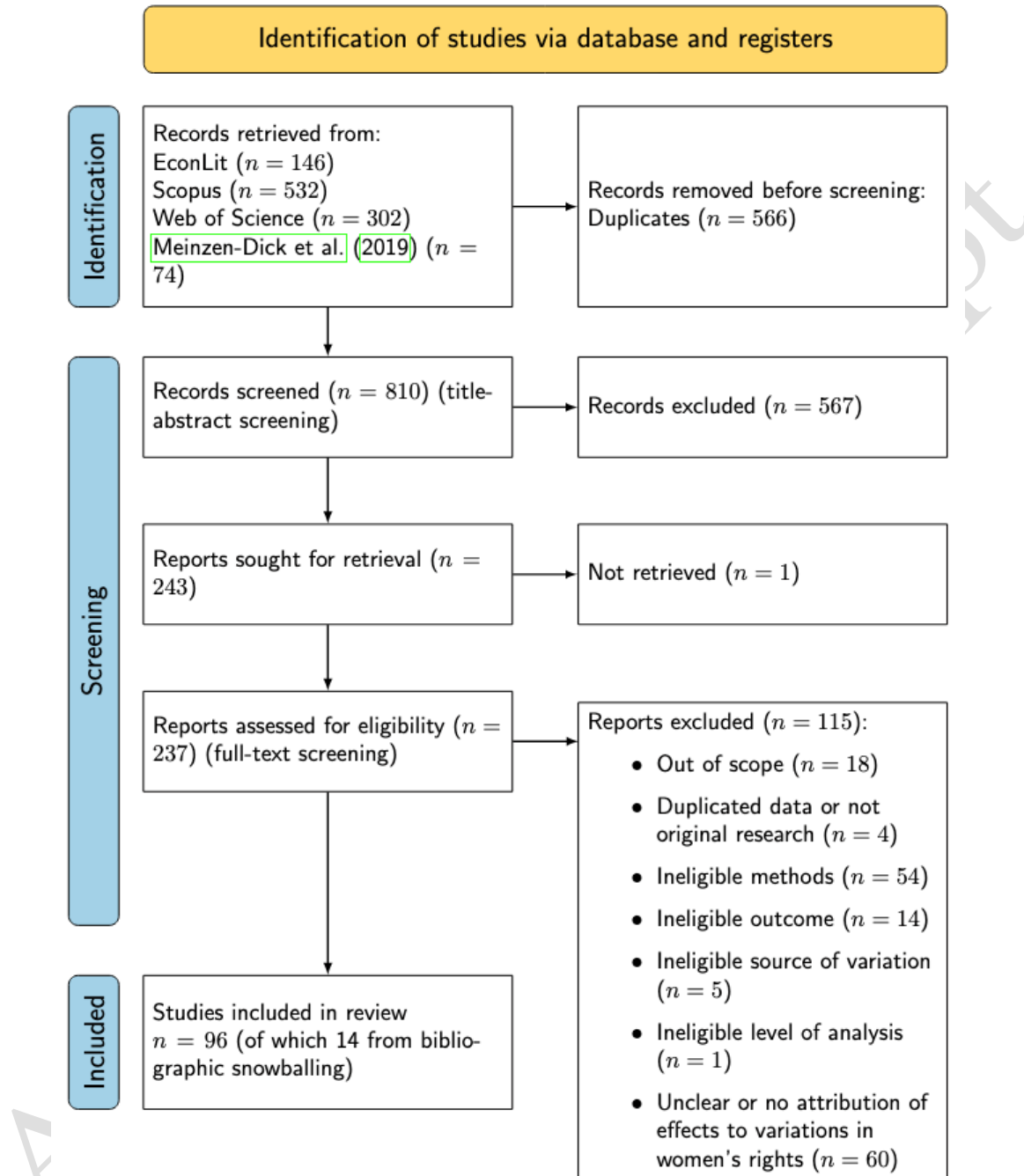
Additionally, we manually screened the reference lists of retrieved studies to identify relevant publications not captured by the initial queries⁵. As a result, we included 14 additional publications (Appendix B), which underwent the same eligibility screening and data extraction procedures as those retrieved from the original search.

Since studies often report multiple effects across countries and outcomes, we treated effects as units of analysis rather than entire articles, following the approach adopted by Higgins et al. (2018). Effects were recorded in a spreadsheet with their corresponding attributes (e.g., country, statistical significance) (Pickering & Byrne, 2014; Ogundari, 2022). Multiple estimates for the same effect – derived from different model specifications, robustness checks or heterogeneity analyses – were consolidated based on reviewers’ judgment.

The PRISMA flowchart (Figure 2) illustrates the workflow of screening, retrieving, and selecting articles, resulting in 96 studies and 202 effects after snowballing (Appendix C).

⁵ While database searches remain the core of systematic reviews, PRISMA permits supplementary backward snowballing to enhance comprehensiveness, provided that its use is cautious, transparent, and reproducible (Page et al., 2021).

Figure 2: PRISMA flowchart



Source: Authors' elaboration based on Page et al. (2021)'s template. Note: The diagram illustrates the workflow of identifying, screening and including publications in the review.

Although no outcomes were specified in the search query, a working definition of “development outcomes” guided screening to ensure consistency. These are understood as measurable, objective dimensions of socio-economic progress at the individual, household, or community level, including, but not limited to, agricultural productivity, household income and expenditure, health and nutrition, education, and women’s empowerment. Consequently, outcomes not directly

indicative of development were deemed “ineligible”. For example, migration was excluded due to its ambiguity, as it may imply either an adaptation strategy or a decline in living standards⁶. Thus, the review focuses on outcomes clearly linked to development impacts attributable to WLRs.

3.3 Limitations

Given the complexity and context-specific nature of land-related impacts, especially gendered ones, we included only empirical studies that moved beyond descriptive correlations and addressed selection bias and confounding factors using inferential methods. This methodological filter ensures internal validity and supports evidence-based policy recommendations grounded in robust causal inference.

However, this choice entails limitations. Excluding purely observational or descriptive studies, which offer valuable qualitative insights or rich contextual detail, risks overlooking important dimensions of the WLR-development nexus. It may bias findings toward data-rich settings, underrepresenting marginalized groups, lesser-studied regions, and informal tenure systems. Moreover, causal studies often emphasize measurable outcomes, neglecting longer-term or intangible effects better captured by qualitative research.

Therefore, while enhancing findings’ internal validity, our approach may limit breadth and external validity. A fuller understanding of WLRs’ impacts would benefit from complementary syntheses incorporating mixed-method and ethnographic studies to capture social norms, power dynamics, and lived experiences influencing tenure security and development.

4. Main Findings of the Systematic Literature Review

The final sample of 96 publications reflects the richness and fragmentation of the empirical literature on WLRs and development. Geographically, the evidence is highly concentrated in Sub-Saharan Africa and South Asia, with scattered coverage in other regions. Thematically, it spans 11 outcome areas attributable to development processes, including *women’s empowerment*, *household welfare*, *agricultural productivity*, *financial inclusion*, and *health*. Methodologically, most studies rely on observational and, to a lesser extent, quasi-experimental designs, often exploiting policy changes to identify causal effects⁷.

Building on this evidence, this section presents the main findings of the systematic review, focusing on how WLRs influence various development outcomes. We first examine WLRs’ operationalization in the literature, emphasizing the elements of the ‘bundle’ and how these distinctions shape observed effects (Section 4.1). To facilitate comparison, outcomes were grouped into broader domains reflecting the primary focus of reported effects, with empirical insights synthesized for each (Section 4.2). The analysis then considers studies’ geographical and temporal coverage (Section 4.3) and, subsequently, their methods and data (Section 4.4), offering a

⁶ See, for example, Kudo (2015).

⁷ Appendix D reports the distribution of studies across regions, methods, and outcomes, together with detailed information for each included study.

systematic overview of not only what outcomes are affected by WLRs but also how, where, and with which methodological approaches these effects have been assessed.

4.1. Operationalizing the ‘Bundle of Rights’

Contemporary economic theory (Schlager & Ostrom, 1992) highlights the importance of women’s concrete actions regarding land. To assess whether empirical literature reflects this, we propose a preliminary classification of the LR mentioned as explanatory variables in reviewed studies (Figure 3).

Figure 3: Distribution of rights mentioned as explanatory variables



Source: Authors’ elaboration. Note: The figure shows the distribution of effects from WLR associated with different rights in Schlager and Ostrom (1992)’s bundle of rights, as they are mentioned in the reviewed studies. Each effect be associated to multiple right typologies. Therefore, the total count exceeds the number of effects included in the review.

Most effects (190) are explicitly associated with ownership or inheritance, typically self-reported or documented via a land title. However, authors often omit details on the specific claims these rights entail or how they were validated in surveys.

Although ownership is often assumed to grant the complete ‘bundle of rights,’ even titling does not ensure women can exercise any or all rights. Shwachman Kaminaga & Sheldon (2022, p. 1200) observe that ‘[t]he interplay between *de facto* and *de jure* legal systems [...] [affects] whether a title (physical or assumed) is recognized in practice.’ If ownership simply reflects *de jure* rights, our understanding of *de facto* rights (and their heterogeneous impacts) is impaired. Further, studies rarely assess different rights separately, often combining them into a single explanatory variable.

Other rights in the ‘bundle’ are scarcely represented: alienation appears only in 25 effects; access/use rights are present in 18 effects (based on actual access or land-use certificates); management and withdrawal are evaluated in only 14 and eight effects, respectively. No studies explicitly mention exclusion rights; though five cases report women’s inability to maintain exclusive land access (e.g., the fear of land loss noted in Deininger et al., 2019). This gap is notable,

as Schlager & Ostrom (1992) argue that individual rights of exclusion promote investment and productivity.

Only 20 studies consider multiple dimensions of the ‘bundle.’ Notably, 55% are concentrated in Sub-Saharan Africa, indicating a strong regional focus that will be examined in more detail in the following sections.

4.2. Development Outcomes

The analysis identified 11 outcome categories attributable to development processes. Among these, *women’s empowerment* emerged as the most investigated one. Others derived from the theoretical literature (*investment and environmental sustainability, agricultural productivity, NRM, and financial inclusion*), scholars’ attention to ‘mediated’ impacts (*welfare, health, and education*), and the latest developments in this field (*intra-household dynamics, social capital and collective action, and social stability*).

Greater consistency of findings emerges from specific areas of *empowerment* (namely, *decision-making* and *economic empowerment*), *health*, and *education*, where WLRs are connected to robust and positive impacts. More heterogeneous or scattered findings emerge on the remaining outcomes.

4.2.1. Women’s Empowerment

With 45 studies, *empowerment* emerges as the most examined outcome, slightly more based on observational studies (51%) and with broad country coverage, especially in South Asia and Sub-Saharan Africa. We identified four main dimensions: *decision-making, economic empowerment, family planning, and intimate partner violence (IPV)*.

Decision-making is the most popular theme in this area, with most studies confirming a positive relationship. Particularly coherent findings emerge from quasi-experimental studies, where nearly every intervention demonstrated a positive impact (Ajefu et al., 2024; Biswas et al., 2024; Grabe, 2010; Grabe, 2015; Melesse et al., 2018; Mishra & Sam, 2016; Persha et al., 2017; Santos et al., 2014; Schling & Pazos, 2024; Wiig et al., 2011). A few observational studies, however, have found insignificant effects in specific countries (Amir-ud-Din et al., 2024; Doss et al., 2014; Kumar et al., 2020; Yokying & Lambrecht, 2020).

Decision-making power is usually measured in the *household*, except for Grabe (2015) on women’s participation in community meetings. Thresholds for considering a woman ‘empowered’ vary widely, from having (some) input in (key) family decisions, to full independence.

Findings on ‘*economic empowerment*’⁸ are largely positive, particularly on employment and earnings in Sub-Saharan Africa (Ajefu et al., 2024; Peterman, 2011; Efobi et al., 2019) and Vietnam (Menon et al., 2017). Nevertheless, negative effects on employment were identified in India’s patrilineal societies (Bahrami-Rad, 2021), where the combination of property inheritance and social stigma against women working outside the home reduced their economic participation,

⁸ *Economic empowerment* includes employment, entrepreneurship, influence on household expenditure, and similar outcomes.

particularly in agriculture. Similarly, in China, reforms granting land leasing rights increased men's off-farm employment more than women's, leaving them with greater housework and childcare responsibilities (Shi et al., 2024).

WLRs were also found to increase household expenditure/savings on healthcare, education and women's and girls' goods, and to decrease those in traditional men's goods (Brulé, 2010; Muchomba, 2017; Nguyen & Le, 2023; Quisumbing & Maluccio, 2003).

Four studies on India's inheritance reform, however, reveal troubling family-planning outcomes: landed women were more likely to marry paternal cousins to keep property within male lineages (Bahrami-Rad, 2021) and showed a stronger preference for male offspring (Bose & Das, 2024). Related evidence indicates increased female foeticide (Bhalotra et al., 2020) and child mortality (Rosenblum, 2015). Overall, these findings suggest that – despite pro-women land reform – social norms adapt to preserve traditional inheritance patterns, as households seek more sons to maintain male control over family assets.

A small evidence base explores women's experiences with *IPV*, with mixed findings. While some studies show protective effects of WLRs (Biswas et al., 2024; Muchomba et al., 2014; Panda & Agarwal, 2005), others report increased IPV under specific conditions (Peterman et al., 2017; Shwachman Kaminaga & Sheldon, 2022; Ward & Harlow, 2021), particularly in South Asia (Anderson & Genicot, 2015; Murshid, 2017).

4.2.2. Investment and Environmental Sustainability

The review identified 19 studies on investment and environmental sustainability⁹, mainly concentrated on Sub-Saharan Africa (80%) and mostly based on observational evidence.

One experimental study – the only randomized-controlled trial (RCT) in this review – found that land formalization in Benin promoted long-term investments, with particularly strong effects among female-headed households (Goldstein et al., 2018).

Quasi-experimental studies show mixed findings. In Rwanda, land regularization increased soil conservation, particularly among female-headed households (Ali et al., 2014). Similarly, in Zambia, widows' inability to inherit land reduced fertilizer use, fallowing and intensive tillage (Dillon & Voena, 2018). In India, adding women's names to land titles boosted agricultural investment and the use of higher-quality inputs (Santos et al., 2014). Nevertheless, other studies found no significant effects. In Nicaragua, for example, titling alone had no effect, suggesting the need for complementary support for vulnerable groups (De La O Campos et al., 2023).

Observational studies present similarly mixed findings, though most support a positive relation. For example, in Ghana, insecure WLRs reduced fallowing (Goldstein & Udry, 2008), while in Kenya, tenure insecurity under patrilineal inheritance systems discouraged long-term investments among male heirs in male-headed households (though this effect did not extend to women) (Linkow, 2019). Likewise, in Malawi, stronger women's tenure security in uxorilocal communities

⁹ These outcomes were grouped as the reviewed investments involve adopting sustainable fuels or agriculture, often with conservation measures.

promoted investment (Benjamin, 2020), but reduced men's tenure security, discouraging their long-term investments (Lovo, 2016).

Interestingly, several studies explored how different rights across the 'bundle' shape investment. For example, in Ghana, alienation reduced investments in female-owned plots, while other rights showed no significant effects (Aikins et al., 2021). Conversely, in Malawi, alienation was linked to increased investment in organic manure, whereas other rights were not (Deininger et al., 2021). Adoption of climate-smart agriculture was more likely when management rights aligned with ownership and economic rights, although results varied across countries, right types, and land managers' gender (Teklewold, 2023).

These mixed results could be explained by variations in how investments are defined and measured, or by their nature and timeframe (short-term or long-term), which, carrying different risks, are likely to elicit different responses to varying levels of tenure security.

4.2.3. Agricultural Productivity

The review identified 13 studies on *agricultural productivity*, mainly concentrated on Sub-Saharan Africa (84%) and based on observational studies (61%).

An experimental approach found that Benin's land demarcation increased long-term investment among female-headed households but did not improve agricultural yields in the short term, suggesting that productivity benefits may take longer to materialize (Goldstein et al., 2018).

Some quasi-experimental studies evaluated the productivity impacts of government land policies. In Ethiopia, land certification correlated positively with higher agricultural output value, particularly for female-headed households (Bezabih et al., 2016; Holden & Ghebru, 2011). Likewise, in Vietnam, individual and joint land-use certificates improved rice yields (Newman et al., 2015). However, in Malawi, redistribution only improved productivity among male-headed households (Mendola & Simtowe, 2015).

Observational studies particularly show the relationship between women's tenure security and productivity. In Malawi, for instance, the fear of land loss only reduced productivity among female farmers, but not among their male counterparts (Deininger et al., 2019). Similarly, in Ghana, women's lower productivity was attributed to insecurity over retaining land while it lay fallow (Goldstein & Udry, 2008). In Kenya, women farmers with titles were more productive than those without (Owoo & Boakye-Yiadom, 2015).

Further, in Nigeria, access and ownership rights were associated with higher productivity (Daudu et al., 2022), while in Rwanda, the ability to sell or collateralize land increased productivity, especially for households that acquired farmland through purchase, loans or leases (Kamande & Bahati, 2019). This aligns with findings from Ethiopia, where rental market participation increased productivity among female-headed households (Bezabih et al., 2016; Holden & Ghebru, 2011).

Studies employed various measures of productivity, including physical yields (e.g., per hectare/acre) (Benjamin, 2020; Daudu et al., 2022; Mendola & Simtowe, 2015; Owoo & Boakye-Yiadom, 2015), and monetary measures, such as revenue (Bezabih et al., 2016; Deininger et al., 2019; Goldstein et al., 2018; Holden & Ghebru, 2011) and profits (Goldstein & Udry, 2008; Masterson, 2007).

4.2.4. Natural Resources Management

The review identified only three studies on *NRM*. All of them focus on Ethiopia and investigate a single aspect (land rental decisions), providing preliminary support for the positive effects of WLRs.

Akpalu & Bezabih (2015) show that female farmers often avoid renting out their land due to fears of losing it to male tenants. Together with findings on *productivity*, this evidence suggests that improving institutional support for WLRs and dispute resolution could make land markets more efficient.

Quasi-experimental evidence reinforces this point. Specifically, Holden & Ghebru (2011) found that paper-based certificates increased the likelihood that female-headed households would rent out their land. However, upgrading to digitized certificates had little additional effect (Persha et al., 2017).

Future research should extend beyond Ethiopia, whose land laws differ from those in most other developing countries and even within Sub-Saharan Africa, limiting findings' generalizability. For instance, land sales and collateralization are illegal, and in some areas, non-residents risk losing their LR (Stevens et al., 2020). Thus, pro-women land policies in more typical land markets could yield different *NRM* outcomes.

4.2.5. Financial Inclusion

The review identified eight studies on *financial inclusion*. The evidence is limited but evenly distributed across regions and across observational and quasi-experimental designs (50% each).

Findings point to a generally positive relationship, supported by four studies (Balasubramanian et al., 2019; Nguyen & Le, 2023; Persha et al., 2017; Santos et al., 2014). In Vietnam, for instance, land-use certificates allowed women to collateralize their land, reducing dependence on costly informal credit markets (Nguyen & Le, 2023). Access to credit also enabled investment in education and health, generating spill-over effects. Notably, this study is one of the few in the broader literature on LR to identify clear impacts on *financial inclusion* (Deininger et al., 2019).

Nevertheless, benefits may depend on men's involvement. For instance, while landed women are more likely to have formal savings and accounts, they are also more likely to obtain credit when owning land *jointly* with a male relative (Balasubramanian et al., 2019). Furthermore, land interventions may not benefit women's financial inclusion as much as men's. In Ethiopia, for example, digitized certificates increased credit-based business transactions, but gains were smaller among female-headed households (Persha et al., 2017).

Not all studies observed significant effects. In Nicaragua, titling had no significant impact on credit (De La O Campos et al., 2023). In Peru, the relationship between landownership and 'credit resources' was also insignificant (Schling & Pazos, 2024). Similarly, in Tanzania, women living in communities with stronger property and inheritance rights were no more likely to own a savings account (Peterman et al., 2017).

Indicators of *financial inclusion* vary from access to formal credit and microcredit to bank account ownership and reliance on informal loans. Some aspects of *financial inclusion* remain unexplored, such as access to digital payment services, remittances, and (crop) insurance.

4.2.6. Welfare

The review identified 11 studies on *welfare*¹⁰, primarily in Sub-Saharan Africa (82%) and observational (64%). Findings are mixed, with some highlighting negative impacts under specific conditions.

Quasi-experimental studies consistently demonstrate that pro-women land policies can improve welfare for both men and women. In Ethiopia, for instance, longer land certificate tenure increased consumption, particularly among female-headed households (Holden & Ghebru, 2011). Similarly, land redistribution in Malawi boosted wealth and welfare, especially in matrilineal communities (Mendola & Simtowe, 2015), while in Vietnam, women's individual certificates increased household expenditures and reduced poverty (Menon et al., 2017). Another study in Malawi (Asfaw & Maggio, 2018) found that temperature shocks reduced household consumption more severely when women managed land alone; however, these effects were weaker in matrilineal districts, where women's stronger tenure security and greater investment in agricultural technologies helped buffer the impact.

Findings from observational studies are more ambiguous. In Tanzania, for example, women in communities with strong property and inheritance rights enjoyed higher expenditures and savings (Peterman, 2011). Similarly, in Burkina Faso, women's landownership was associated with higher income among livestock-keepers (Montcho et al., 2023).

However, where women lack market access, complementary inputs, or rights enforcement, the land-welfare nexus weakens. In such contexts, welfare may even improve when men retain control over assets (Bhaumik et al., 2016). For example, in Malawi, women's landownership correlated negatively with income from high-value agriculture (Bhaumik et al., 2016). This aligns with the argument that tenure security alone cannot drive socio-economic development without institutional support and access to complementary inputs (de Janvry & Sadoulet, 2016). Similarly, Deere et al. (2004) observed that WLRs often benefit off-farm income more than farm income.

Welfare has been measured through different proxies, including consumption, income (farm/off-farm), expenditure, savings, asset value, poverty lines, and self-reported poverty status. Most studies understand welfare as access to material goods, as is traditional in economics. Future studies could explore alternative measures capturing life satisfaction and relative deprivation, such as subjective well-being, experienced preferences, and the indexes inspired by Sen (2008)'s 'capability approach'.¹¹

4.2.7. Health

¹⁰ While these studies focus on income, consumption and savings, their authors generally use them as proxies for welfare.

¹¹ See, for example, the Human Development Index and the OECD's Better Life Index.

The review identified 20 studies on *health*¹², evenly distributed between Sub-Saharan Africa and South Asia and between quasi-experimental and observational methods. Findings strongly suggest that WLRs improve health outcomes, particularly for children.

Quasi-experimental studies link WLRs to improved child anthropometric measures. For example, in Nigeria, joint landownership improved women's caloric intake and reduced child stunting and underweight rates (Aderemi, 2021). In India and Kenya, inheritance reforms were associated with better child anthropometric measures (Ajefu et al., 2022, 2024) through better education and household bargaining power (Ajefu et al., 2022).

However, not all studies find direct effects. In India, Kumar et al. (2020) observed that landownership alone was insufficient to mitigate child stunting; instead, women's education and household wealth were more critical.

When women control crop choices, they prioritize food availability and dietary diversity. In Rwanda, for example, female landownership improved both (Kamande & Bahati, 2019), though the effect of joint ownership alone was inconclusive. Similarly, in Vietnam, management and use rights in *de facto* female-headed households were linked to improved food security (Bairagi et al., 2022).

Women's income and decision-making are important mediators: observational studies from Ghana (Doss, 2006) and India (Rehman et al., 2019), for instance, showed that women's asset ownership directs spending toward food, while in Nepal, women landowners had greater decision-making, which correlated with better child anthropometric measures (Allendorf, 2007).

Most studies focus on household or child-level outcomes, with only Aderemi (2021) examining women's nutrition. Indicators also vary, with most relying on anthropometric scores or caloric intake, and only two assessing nutritional diversity (Kamande & Bahati, 2019; Burrone & Giannelli, 2023).

Two studies assess health beyond nutrition-related measures. In Vietnam, female-only land-use rights led to a larger reduction in child illness rates and a greater increase in insurance coverage than male-only or jointly held rights (Menon et al, 2014), suggesting a shift toward child health expenditures as predicted by intra-household bargaining theory. In Kenya, individual landownership reduced HIV rates among those women most at risk of survival sex by providing economic security and alternatives to risky sexual behaviors (Muchomba et al., 2014).

4.2.8. Education

The review identified eight studies on *education*, mainly in India (50%) and based on quasi-experimental methods.

Evidence consistently shows that WLRs improve educational outcomes, especially for women and girls. For example, in Vietnam, women's land-use certificates increased children's school

¹² Most studies (90%) focus on nutritional outcomes, typically measured through anthropometric indicators. These are categorized under the *health* domain, as stunting, wasting, or underweight rates reflect not only food intake or security but also broader health factors (de Haen et al., 2011), including disease prevalence, sanitation, and healthcare access (FAO, 1999).

enrollment (Menon et al., 2014). In India and the Philippines, pro-women inheritance reforms raised higher educational attainment for women (Bose & Das, 2017) and their daughters (Deininger et al., 2013; Roy, 2015; Quisumbing et al., 2003).

Consistent with intra-household bargaining theory, WLRs can shift household expenditure toward education. In rural Ghana, for example, households where women owned more farmland spent more on education (Doss, 2006).

Interestingly, while WLRs improve outcomes for girls, effects on boys are mixed: in India, Bose & Das (2017) found reduced attainment, while Deininger et al. (2013) (on the same Indian reform) and Quisumbing et al. (2003) (on the Philippines) found positive effects only for girls.

4.2.9. Intra-Household Dynamics

The review identified only one quasi-experimental study on *intra-household dynamics*¹³, limiting the empirical evidence to India.

Family conflict is often modeled through bargaining models that include separation or divorce as potential exit strategies. Anderson & Genicot (2015) extended this framework by including suicide as an extreme exit option and found that pro-women inheritance reform increased suicide rates for both sexes due to marital conflict.

Despite its robust causal design, the study's findings may not generalize beyond India, where divorce and separation are extremely rare (Anderson & Genicot, 2015). Where marriage dissolution is more accessible, WLRs may influence household dynamics differently, fostering either conflict or cooperation.

4.2.10. Social Capital and Collective Action

The review identified three observational studies on *social capital and collective action*¹⁴, mainly in Sub-Saharan Africa.

Despite their small number, most report positive effects. As social capital cannot be directly measured (Meinzen-Dick et al., 2004), studies use proxies like participation in organizations or social events. In Uganda, WLRs increased women's involvement in coffee cooperatives and collective marketing, especially in gender-equal or joint-ownership households (Meier Zu Selhausen, 2016). In Vietnam, women's share of family land increased their (non-)production-related group membership and attendance at social events (Nguyen & Le, 2023).

However, in Ghana, Yokying & Lambrecht (2020) found no significant differences in agricultural group membership between landed and landless women.

4.2.11. Social Stability

¹³ By 'intra-household dynamics,' we refer to the ways in which WLRs affect family relationships, fostering either cooperation or conflict, particularly between spouses.

¹⁴ Collective action refers to coordinated land management through common property regimes or inter-farms collaboration (Meinzen-Dick et al., 2004). Social capital underpins collective action, and it is often analyzed jointly (Krishna, 2004).

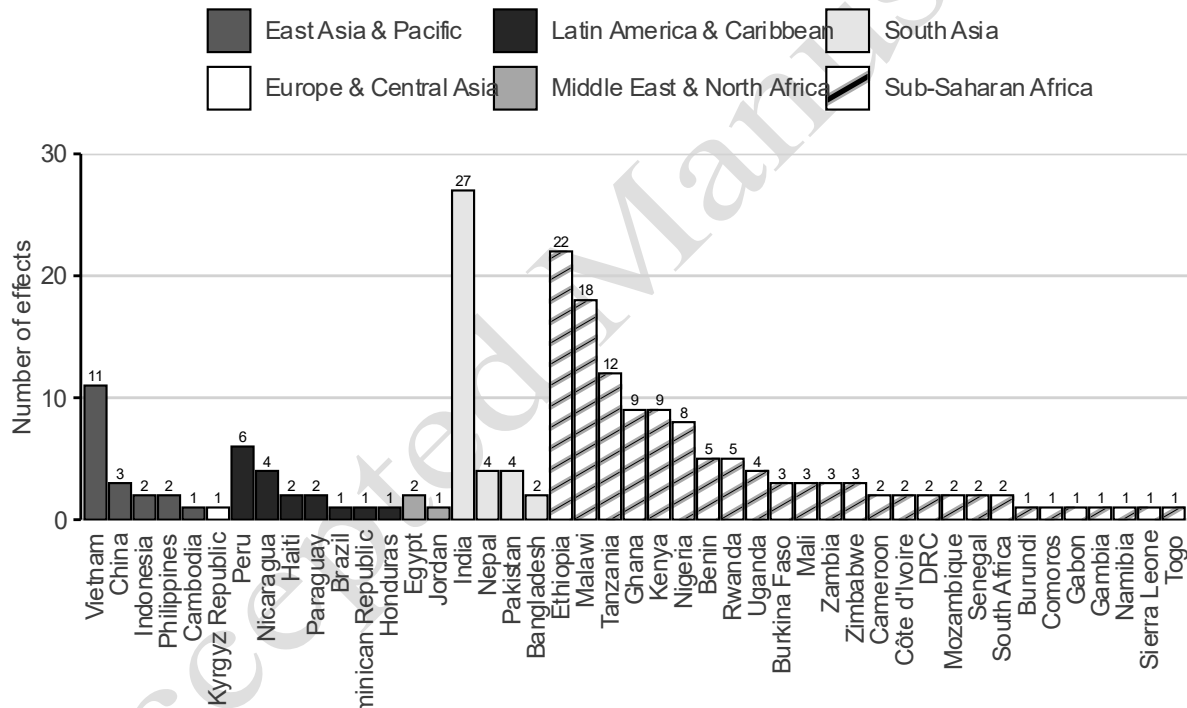
The review identified only one quasi-experimental study on *social stability*, which found no significant effects of digitized certificates on land disputes in Ethiopia (Persha et al., 2017).

Two important considerations, however, contextualize this finding. First, the study focused on the *marginal* benefits of digitized certificates over paper-based ones, rather than assessing the overall impact of certification. Second, the low incidence of disputes limited statistical power (Persha et al., 2017).

4.3. Geographic and Time Coverage

The review uncovered effects across 46 countries, plus two multi-country studies.¹⁵ However, evidence availability varies considerably across and within regions (Figure 4).

Figure 4: Distribution of effects, by country of analysis



Source: Authors' elaboration. Note: Each count represents an effect from WLR included in the review. A single article may report effects for multiple countries and development outcomes. Two studies (Balasubramanian et al., 2019; Sommer et al., 2024) are excluded from this figure because they aggregate data from several countries into a single effect.

Sub-Saharan Africa (123 effects, 49 articles) and South Asia (37 effects, 26 articles) dominated the literature, reflecting their high levels of rural poverty (Castañeda et al., 2018) and the substantial policy relevance of WLRs. In contrast, Europe & Central Asia (one effect) and the Middle East & North Africa (three effects, two articles) are critically underrepresented. East Asia & Pacific (19

¹⁵ Balasubramanian et al. (2019) and Sommer et al. (2024) aggregate data from multiple developing economies.

effects, 12 articles) and Latin America & the Caribbean (17 effects, 10 articles) have a scattered evidence base, insufficient to generalize findings at the regional level.

The analysis paints a modest picture of outcomes' coverage outside the two focal regions (Figure 5). Research on *empowerment* is common to all regions but mostly concentrated in Sub-Saharan Africa, as are studies on *investment* and *productivity*. South Asia, despite ranking second in terms of geographic coverage and extensively relying on traditional agriculture, holds limited evidence on the latter two outcomes. On the other hand, *health* is well-represented in both focal areas, while receiving no attention elsewhere.

Figure 5: Distribution of effects, by region and outcome

Women's Empowerment	9	1	8	3	23	63
Investment & Environmental Sustainability			2		1	18
Agricultural Productivity	1		1			11
Natural Resources Management						3
Financial Inclusion	2		2		1	2
Welfare	1		3			9
Health	2		1		6	11
Education	3				5	3
Intra-Household Dynamics					1	
Social Capital & Collective Action	1					2
Social Stability						1
	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	South Asia	Sub-Saharan Africa

Source: Authors' elaboration. Note: Each count represents an effect from WLR included in the review. A single article may report effects for multiple countries and development outcomes. Two studies (Balasubramanian et al., 2019; Sommer et al., 2024) are excluded from this figure because they aggregate data from several countries into a single effect.

Even within well-covered regions, research concentrates on specific countries. Research in Sub-Saharan Africa focuses mostly on Tanzania, Ethiopia and Malawi, while research in South Asia appears overwhelmingly clustered on India.

This trend appears driven by data availability and the possibility of exploiting natural experiments for analysis. Countries undergoing legal or policy changes tend to attract scholarly interest since they offer unique opportunities to identify generalizable effects. Notable instances include Ethiopia's and Benin's land certification programs (started in 1998 and 1993, respectively), India's inheritance reform (2005), and Vietnam's Land Law (1993), which serve as sources of

discontinuity in multiple articles in this review.¹⁶ Broadly speaking, the main land programs covered by the reviewed studies occurred in the late 1990s and early 2000s, and were accompanied by extensive documentation and standardized data collection efforts, largely supported by the international community. Most studies draw on periodical data from the early 2000s to 2015, with no significant regional differences in temporal coverage. The most recent evidence is from Nigeria, with data extending to 2021¹⁷. The temporal distribution of data does not reveal specific patterns in terms of outcomes or geographies; however, recent studies tend to consider a broader range of rights within the ‘bundle’ compared to earlier research.

When examining how different rights in the ‘bundle’ intersect with geographical coverage, Sub-Saharan Africa and South Asia still dominate the evidence base, especially for ownership/inheritance rights. While this geographic focus carries over to other dimensions, East Asia is relatively better represented in access/use and alienation rights. This suggests that, in this region, specific local contexts – such as legal frameworks and customary practices – and socio-cultural dynamics may shape WLRs in ways that differ from other regions. Data availability from major land reforms (e.g., Vietnam) likely also drives scholarly focus.

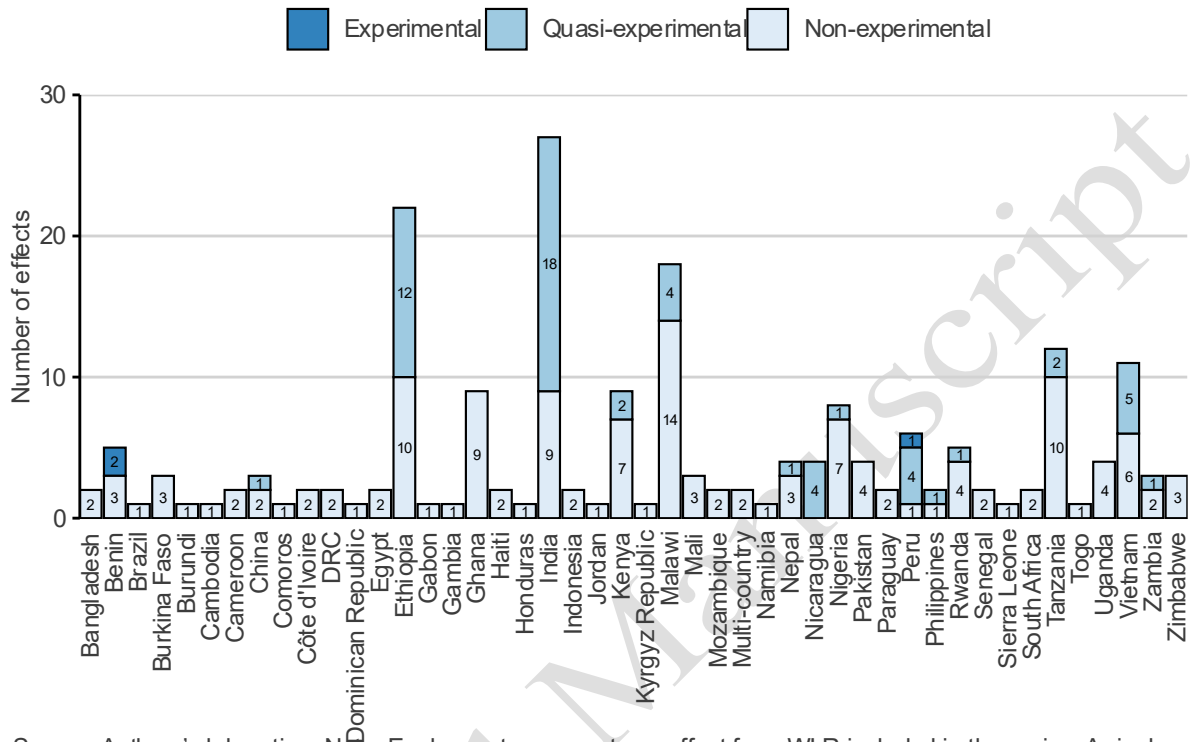
4.4. Research Methods and Data

Most studies adopt observational (142 effects from 57 articles) or quasi-experimental designs (57 effects from 37 articles) (Figure 6), with only two studies (three effects) employing experimental approaches. Among these, only Goldstein et al. (2018) (on Benin) used an RCT – the “gold standard” in causal inference (Higgins et al., 2018) – leveraging a major land reform in the country.

¹⁶ Appendix D presents further details on programs/reforms covered in the reviewed studies.

¹⁷ See Daudu (2022).

Figure 6: Distribution of effects, by country of analysis and study design



Source: Authors' elaboration. Note: Each count represents an effect from WLR included in the review. A single article may report effects for multiple countries and development outcomes. Two studies (Balasubramanian et al., 2019; Sc al., 2024) are excluded from this figure because they aggregate data from several countries into a single effect.

Common identification strategies include instrumental variables, differences-in-differences, and their combination with matching methods. Matching methods and inverse probability weighting are often used in observational studies to address confounding bias.

Key data sources include the Living Standards Measurement Study, the Household Living Standards Survey, the Integrated Household Panel Survey, and the Demographic and Health Survey.¹⁸

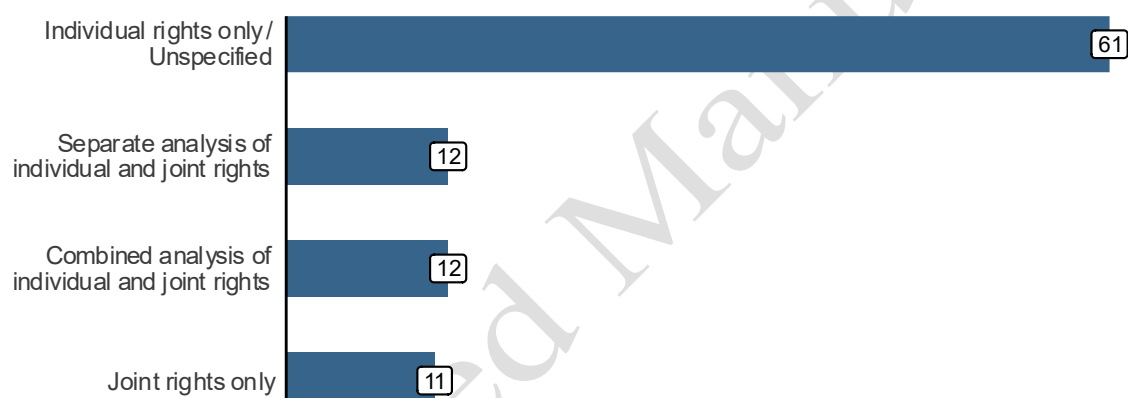
Most studies (72%) rely on cross-sectional data, single or repeated (153 effects, 69 studies), while only a few use panel data (49 effects, 27 studies), largely limited to China, India, Vietnam and selected countries in Sub-Saharan Africa (Benin, Ethiopia, Ghana, Malawi, Nigeria, Rwanda and Tanzania). Longitudinal data enable the observation of long-term outcomes (e.g., *productivity*, *education*), the use of fixed-effects estimators, and the study of dynamic processes (e.g., lagged effects). However, large-scale longitudinal surveys with land modules remain rare.

¹⁸ Details in Appendix D.

Recent studies increasingly use individual- and plot-level analyses,¹⁹ as already noted by Meinzen-Dick et al. (2019), enabling estimation of local effects with high internal validity. Nevertheless, studies where the parcel is the explicit unit of analysis remain relatively niche²⁰. First appearing in Goldstein & Udry (2008), plot-level studies in our sample account for only 15 studies (18%), mostly on *investment* (nine studies, or 60% within this domain), *productivity* (seven studies, or 54%), *financial inclusion* and *NRM* (one study each), with mainly positive effects. Apart from De La O Campos et al. (2023), Kelly et al. (2019), and Newman et al. (2015) – on Nicaragua, Haiti and Vietnam, respectively – all plot-level analyses refer to Sub-Saharan Africa (80%).

While this focus on local-level analyses provides rich insights, it has reduced attention to ‘macro-level’ and cross-country analyses. Furthermore, few studies differentiate outcomes by women’s characteristics (e.g., marital status), except for research on family and inheritance law reforms.

Figure 7: Distribution of articles, by type of rights analyzed



Source: Authors’ elaboration. Note: Each count represents an article included in the review. When unspecified, effects are included in the first category as they are likely individual.

Despite extensive research on individual rights, only 12 studies explicitly compared the effects of individual and joint rights, largely due to data limitations (Figure 7). Even when data is available, however, many studies aggregate these categories to maintain statistical power, with half providing combined analyses. When differentiated, individual rights improved *decision-making* over joint rights in Sub-Saharan Africa (Doss et al., 2014). Both LR types were beneficial compared to landlessness; however, in India, individual rights showed no effect, and joint rights had negative effects, reflecting heterogeneous local outcomes. In Vietnam, instead, both types of rights increased women’s self-employment (Menon et al., 2017), but female-only rights improved *health* and *education* outcomes more than male-only or joint rights (Menon et al., 2014). In Kenya, both increased vulnerability to *IPV* (Ward & Harlow, 2021). Further research is needed to confirm

¹⁹ Given our focus on gendered impacts, included studies provide either individual-level data (on women) or plot-level data (with gender-specific information), even when the household is the observation unit.

²⁰ Data measured at different scales can be integrated, for instance, plot-level variables analyzed at individual or household levels. Here, however, the measurement level refers specifically to the outcome variable.

whether individual rights are more empowering for women, as suggested by Agarwal (2003) and Bhatla et al. (2010), among others.

5. Discussion of the Main Findings and Research Gaps

5.1. WLRs' Effect on Development Outcomes

Synthesizing such a diverse literature is challenging due to the wide range of outcomes and the heterogeneity of the indicators used to measure them. To provide a structured and interpretable overview, we followed approaches similar to Higgins et al. (2018) and, partly, Lawry et al. (2017), reporting the number—and, in our case, the proportions—of positive and statistically significant effects by outcome²¹. This approach uncovers outcome patterns and identifies areas of abundant or limited evidence (Figure 8).

Empirical evidence remains uneven across outcomes and geographies. It is larger in the area of *empowerment* and, to a smaller extent, *productivity*, *health*, and *investment*, whereas other outcomes warrant increased focus.

Figure 8: Proportion of positive effects, by region and development outcome

Women's empowerment	9 (67%)	1 (0%)	8 (50%)	3 (0%)	23 (48%)	63 (59%)	107 (54%)
Investment and env. sustainability			2 (50%)		1 (100%)	18 (50%)	21 (52%)
Agricultural productivity	1 (100%)		1 (0%)			11 (73%)	13 (69%)
Natural resources management						3 (67%)	3 (67%)
Financial inclusion	2 (50%)		2 (0%)		1 (100%)	2 (50%)	7 (43%)
Welfare	1 (100%)		3 (0%)			9 (78%)	13 (62%)
Health	2 (100%)		1 (100%)		6 (67%)	11 (91%)	20 (85%)
Education	3 (100%)				5 (80%)	3 (33%)	11 (73%)
Intra-household dynamics					1 (100%)		1 (100%)
Social capital and collective action	1 (100%)					2 (50%)	3 (67%)
Social stability						1 (0%)	1 (0%)
	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	South Asia	Sub-Saharan Africa	Total effects (% positive)

Source: Authors' elaboration. Each count represents an effect from WLR included in the review. Darker shades indicate a higher share of positive and statistically significant outcomes. Percentages are calculated over the total number of articles in that outcome category. A single article may report effects for multiple countries and development outcomes. Two studies (Balasubramanian et al., 2019; Sommer et al., 2024) are excluded from this figure because they aggregates data from several countries into a single effect.

²¹ The diversity of outcomes and measurement indicators, along with multiple regressions using alternative proxies for the same outcome within individual studies, renders a meta-analysis impractical and a structured summary of effect sizes challenging to interpret.

The strongest, most coherent evidence of positive effects is on *empowerment* (Figure 8). LRs consistently improve women's *decision-making* and *economic empowerment*; though impacts on *IPV* and *family planning*, particularly in South Asia, vary. As Meinzen-Dick et al. (2019) note, there is also coherent, albeit limited, evidence of positive impacts on *productivity*, *financial inclusion*, and *social capital*.

Although limited in number, the evidence on *education* and *health* is unambiguously positive. Future research could explore potential long-term, intergenerational benefits of WLRs, such as whether children of landed women become healthier, more productive adults, contributing to poverty reduction. Greater attention is also needed on nutritional diversity – a key but unexplored aspect of food security (FAO, 1996).

Evidence on *investment* and *welfare* is moderate but inconsistent, with some studies reporting negative effects, partly contrasting Meinzen-Dick et al. (2019), who noted a high level of agreement on 'technology adoption,' and Lawry et al. (2017), who found relatively consistent positive effects of broader LR recognition on long-term investment²².

The evidence on *intra-household dynamics*, *NRM*, and *social stability* is insufficient to draw definitive conclusions. At the same time, discussions on climate adaptation and resilience remain largely absent from the literature, with only Asfaw & Maggio (2018) addressing them. Future research should examine how WLRs contribute to such outcomes across different climatic and institutional contexts. Further, as in Lawry et al. (2017), existing evidence on *NRM* focuses exclusively on land rental, while other practices affecting economic efficiency (e.g., use, sales, purchases, or gifting) remain unexplored.

5.2. Progress with Respect to Previous Reviews

While our outcome classification does not directly align with Meinzen-Dick et al. (2019)'s or Lawry et al. (2017)'s, several points are worth mentioning.

First, by extending the timeframe, this review adds over 30 recent studies,²³ reflecting the surge in research following transnational large-scale land acquisitions and the Russian invasion of Ukraine, which intensified land pressures in the Global South (Dell'Angelo et al., 2023).

Second, this broader scope enables inclusion of additional outcomes (*education*, *health*, *intra-household dynamics*, *social stability*, *social capital* and *collective action*) beyond those covered by previous reviews. More specifically, while Meinzen-Dick et al. (2019) recognized potential impacts on women's bargaining power and decision-making over consumption, human capital and intergenerational transfers, this review assesses the 'mediated' outcomes themselves, rather than bargaining power in these domains. It also expands the 'credit' category (present, in different capacities, in both previous reviews) to encompass broader financial inclusion indicators.

²² These discrepancies stem from different eligibility criteria and our inclusion of more recent studies. Lawry et al. (2017) had a broader scope, with many reviewed studies lacking a gender lens.

²³ In terms of number of reviewed studies, the closest comparison is Meinzen-Dick et al. (2019), which also focused on WLRs. Lawry et al. (2017) covered broader LR recognition and is less directly comparable.

The review finds no progress in resilience and limited gains beyond *agricultural productivity, health, and investment*.

Third, this review proposes two preliminary classifications of LR typologies considered in the empirical literature. Drawing on Schlager & Ostrom (1992), the first shows an almost exclusive focus on ownership/inheritance; the second, contrasting individual and joint rights, highlights a predominant focus on individual rights or combined analyses. Therefore, despite theoretical expectations (Agarwal, 2003), studies examining heterogeneous impacts across different LR typologies remain scarce.

5.3.Further Considerations

Beyond our outcome classification, no eligible studies addressed several potential outcomes suggested by economic theory (Stevens et al., 2020), theoretical frameworks (Meinzen-Dick et al., 2019), or qualitative research (Higgins et al., 2018; Lawry et al., 2017). These include displacement, extension services, democracy and governance, public infrastructure, human development, inequality, post-conflict recovery, poverty reduction, sustainable landscapes and biodiversity conservation.

Macro-level outcomes (e.g., democracy and governance, inequality) are largely absent, likely due to authors' focus on local effects with strong internal validity. Yet, institutions influence both individual experiences and broader socio-economic systems: if rights' recognition affects women and communities, national-level impacts are also plausible. Future research should explore whether WLRs produce systemic effects.

Observed trends and gaps appear largely driven by data availability and uneven opportunities to exploit natural experiments, leading to over-representation of certain countries and outcomes, and few studies on different LR typologies. In particular, the intuitive relationship between rights and agency has enriched research on *empowerment*, but also overshadowed outcomes not directly tied to gender equality.

6. Conclusion

Despite recent growth in empirical studies, evidence on the land-women-development nexus remains fragmented across regions, outcomes, and methods. Building on Meinzen-Dick et al. (2019), this review advances the field by applying the PRISMA protocol and systematizing 202 causal effects from 96 publications across 46 countries. This approach enhances transparency and reproducibility, while clarifying areas of consensus, contradictions, and evidence gaps.

Specifically, the review (1) codifies effects' direction and significance, (2) proposes an original classification of 11 outcomes related to WLRs' recognition, and (3) critically synthesizes empirical evidence, identifying patterns across outcomes and geographies.

The most consistent findings concern *empowerment*, particularly *decision-making* and *economic empowerment*, with positive spillovers to *education* and *health*. These results support longstanding claims that secure LRs can strengthen women's agency and shift household investments toward human capital (Meinzen-Dick et al., 2019). However, contradictions remain: gender-equitable land reforms may improve women's bargaining power but also trigger violence 'backlash' or regressive family planning shifts, particularly under entrenched patriarchal norms. Likewise, evidence on *investment, productivity, financial inclusion, and welfare* is highly heterogeneous, confirming that

tenure security alone is insufficient without complementary access to inputs, markets, and effective LRs enforcement (de Janvry & Sadoulet, 2016).

Important gaps remain. Research disproportionately focuses on Sub-Saharan Africa and South Asia, especially where legal or policy reforms have generated natural experiments. Methodologically, reliance on observational and cross-sectional data limits insights into long-term impacts. Moreover, studies tend to privilege ownership and inheritance rights, with less attention to other dimensions of the ‘bundle’ – despite recent literature beginning to move in this direction. Neglected outcome areas include *NRM*, *social stability*, climate resilience, and broader macro-level processes like governance and inequality.

Our findings highlight clear policy priorities: land interventions can promote development and women’s empowerment, but effectiveness requires policies that account for local gender norms, guard against unintended backlash, and are supported by agricultural services, financial infrastructure, and LRs’ enforcement.

The research agenda should expand geographically and thematically, moving beyond *decision-making* and individual ownership to explore how women benefit from land and how these pathways affect different outcomes. Advancing this agenda requires the systematic collection of longitudinal micro-data, including the mode of acquisition (e.g., inheritance, purchase), rights’ typologies (individual or joint), women’s characteristics, and specific dimensions of the ‘bundle.’ Such efforts should follow standardized, gender-sensitive protocols and include macro-level indicators capturing local institutional settings.

Addressing these gaps will enable a more comprehensive understanding of how WLRs contribute to inclusive and sustainable development, and their role in climate adaptation and resilience at local and systemic levels.

Declaration of competing interest

The authors have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Data availability

The review protocol is accessible at [10.17605/OSF.IO/45QKB](https://osf.io/45QKB). Effects’ classification is available upon request.

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References

Abay, K. A., Breisinger, C., Glauber, J., Kurdi, S., Laborde, D., & Siddig, K. (2023). The Russia-Ukraine war: Implications for global and regional food security and potential policy responses. *Global Food Security*, 36, 100675. <https://doi.org/10.1016/j.gfs.2023.100675>

- Aderemi, T. A. (2021). Nutritional deficiency and women's empowerment in agriculture: Evidence from Nigeria. *African Journal of Agricultural and Resource Economics*, 16(4), 314–336. [https://doi.org/10.53936/AFJARE.2021.16\(4\).21](https://doi.org/10.53936/AFJARE.2021.16(4).21)
- Agarwal, B. (1994). Gender and command over property: A critical gap in economic analysis and policy in South Asia. *World Development*, 22(10), 1455–1478. [https://doi.org/10.1016/0305-750X\(94\)90031-0](https://doi.org/10.1016/0305-750X(94)90031-0)
- Agarwal, B. (1995). *A field of one's own: Gender and land rights in South Asia*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511522000>
- Agarwal, B. (1997a). “Bargaining” and gender relations: Within and beyond the household. *Feminist Economics*, 3(1), 1–51. <https://doi.org/10.1080/135457097338799>
- Agarwal, B. (2003). Gender and land rights revisited: Exploring new prospects via the state, family and market. *Journal of Agrarian Change*, 3(1-2), 184–224. <https://doi.org/10.1111/1471-0366.00054>
- Aikins, E., Oduro, A., & Twerefou, D. (2021). Ownership rights and investment in agricultural land in Ghana: A gender analysis. *West African Journal of Applied Ecology*, 29(1), 49–61.
- Ajefu, J., Uchenna, E., Singh, N., & Ali, S. Z. (2024). Women's inheritance rights and child health outcomes in Kenya. *Journal of Family and Economic Issues*, 45(1), 137–150. <https://doi.org/10.1007/s10834-023-09895-y>
- Ajefu, J. B., Singh, N., Ali, S., & Efobi, U. (2022). Women's inheritance rights and child health outcomes in India. *Journal of Development Studies*, 58(4), 752–767. <https://doi.org/10.1080/00220388.2021.2003333>
- Akpalu, W., & Bezabih, M. (2015). Tenure insecurity, climate variability and renting out decisions among female small-holder farmers in Ethiopia. *Sustainability*, 7(6), 7926–7941. <https://doi.org/10.3390/su7067926>
- Alderman, H., Chiappori, P.-A., Haddad, L., Hoddinott, J., & Kanbur, R. (1995). Unitary versus collective models of the household: Is it time to shift the burden of proof? *The World Bank Research Observer*, 10(1), 1–19. <https://doi.org/10.1093/wbro/10.1.1>
- Ali, D. A., Deininger, K., & Goldstein, M. (2014). Environmental and gender impacts of land tenure regularization in Africa: Pilot evidence from Rwanda. *Journal of Development Economics*, 110, 262–275. <https://doi.org/10.1016/j.jdeveco.2013.12.009>
- Ali, D. A., Dercon, S., & Gautam, M. (2011). Property rights in a very poor country: Tenure insecurity and investment in Ethiopia. *Agricultural Economics*, 42(1), 75–86. <https://doi.org/10.1111/j.1574-0862.2010.00482.x>
- Allendorf, K. (2007). Do women's land rights promote empowerment and child health in Nepal? *World Development*, 35(11), 1975–1988. <https://doi.org/10.1016/j.worlddev.2006.12.005>
- Amir-ud-Din, R., Naz, L., & Ali, H. (2024). Relationship between asset ownership and women's empowerment? Evidence from DHS data from 18 developing countries. *Journal of Demographic Economics*, 90(2), 154–175. <https://doi.org/10.1017/dem.2023.17>
- Anderson, S., & Genicot, G. (2015). Suicide and property rights in India. *Journal of Development Economics*, 114, 64–78. <https://doi.org/10.1016/j.jdeveco.2014.11.004>

- Armand, A., Attanasio, O., Carneiro, P., & Lechene, V. (2020). The effect of gender-targeted conditional cash transfers on household expenditures: Evidence from a randomized experiment. *The Economic Journal*, 120(631), 1875–1897. <https://doi.org/10.1093/ej/ueaa056>
- Asfaw, S., & Maggio, G. (2018). Gender, weather shocks and welfare: Evidence from Malawi. *Journal of Development Studies*, 54(2), 271–291. <https://doi.org/10.1080/00220388.2017.1283016>
- Atkinson, M. P., Greenstein, T. N., & Monahan Lang, M. (2005). For women, breadwinning can be dangerous: Gendered resource theory and wife abuse. *Journal of Marriage and Family*, 67(5), 1137–48. <https://doi.org/10.1111/j.1741-3737.2005.00206.x>
- Bahrami-Rad, D. (2021). Keeping it in the family: Female inheritance, inmarriage, and the status of women. *Journal of Development Economics*, 153, 102714. <https://doi.org/10.1016/j.jdeveco.2021.102714>
- Balasubramanian, S. A., Kuppusamy, T., & Natarajan, T. (2019). Financial inclusion and land ownership status of women. *International Journal of Development Issues*, 18(1), 51–69. <https://doi.org/10.1108/IJDI-06-2018-0091>
- Becker, G. S. (1974). A theory of social interactions. *Journal of Political Economy*, 82(6), 1063–1093. <https://doi.org/10.1086/260265>
- Behrman, J., Meinzen-Dick, R., & Quisumbing, A. (2012). The gender implications of large-scale land deals. *Journal of Peasant Studies*, 39(1), 49–79. <https://doi.org/10.1080/03066150.2011.652621>
- Benjamin, E. O. (2020). Smallholder agricultural investment and productivity under contract farming and customary tenure system: A Malawian perspective. *Land*, 9(8), 277. <https://doi.org/10.3390/land9080277>
- Besley, T. (1995). Property rights and investment incentives: Theory and evidence from Ghana. *Journal of Political Economy*, 103(5), 903–937. <https://doi.org/10.1086/262008>
- Bezabih, M., Holden, S., & Mannberg, A. (2016). The role of land certification in reducing gaps in productivity between male- and female-owned farms in rural Ethiopia. *Journal of Development Studies*, 52(3), 360–376. <https://doi.org/10.1080/00220388.2015.1081175>
- Bhalotra, S., Brulé, R., Dhabhi, N. A., & Roy, S. (2020). Women's inheritance rights reform and the preference for sons in India. *Journal of Development Economics*, 146. <https://doi.org/10.1016/j.jdeveco.2018.08.001>
- Bhatla, N., Duvvury, N., & Chakraborty, S. (2010). Women's vulnerability, risk and social protection: An exploration of links between property ownership and domestic violence in South Asia. In S. Cook & N. Kabeer (Eds.), *Social protection as development policy* (pp. 219–244). Routledge India.
- Bhaumik, S. K., Dimova, R., & Gang, I. N. (2016). Is women's ownership of land a panacea in developing countries? evidence from land-owning farm households in Malawi. *Journal of Development Studies*, 52(2), 242–253. <https://doi.org/10.1080/00220388.2015.1060314>

- Biswas, S., Das, U., & Sarkhel, P. (2024). Duration of exposure to inheritance law in India: Examining the heterogeneous effects on empowerment. *Review of Development Economics*, 28(2), 777–799. <https://doi.org/10.1111/rode.13080>
- Bose, N., & Das, S. (2017). Women's inheritance rights, household allocation, and gender bias. *American Economic Review*, 107(5), 150–153. <https://doi.org/10.1257/aer.p20171128>
- Bose, N., & Das, S. (2024). Reassessing the relationship between women's empowerment and fertility: Evidence from India. *Review of Development Economics*, 28(2), 544–573. <https://doi.org/10.1111/rode.13066>
- Brulé, R. (2010, September). *Changes in India's property rights regime and the implications for improved gender parity: Evidence from regression discontinuity analysis of panel data for 17 Indian states*. (APSA 2010 Annual Meeting Paper). <https://ssrn.com/abstract=1644357>
- Burke, W. J., & Jayne, T. (2021). Disparate access to quality land and fertilizers explain Malawi's gender yield gap. *Food Policy*, 100, 102002. <https://doi.org/10.1016/j.foodpol.2020.102002>
- Burke, W. J., Li, S., & Banda, D. (2018). Female access to fertile land and other inputs in Zambia: Why women get lower yields. *Agriculture and Human Values*, 35(4), 761–775. <https://doi.org/10.1007/s10460-018-9872-6>
- Burrone, S., & Giannelli, G. (2023, August). *Do households where women own land fare better for food security? Evidence for Tanzania*. (IZA Discussion Paper No. 16382). <https://doi.org/10.2139/ssrn.4541364>
- Castañeda, A., Doan, D., Newhouse, D., Nguyen, M. C., Uematsu, H., & Azevedo, J. P. (2018). A new profile of the global poor. *World Development*, 101, 250–267. <https://doi.org/10.1016/j.worlddev.2017.08.002>
- Chiappori, P.-A. (1992). Collective labor supply and welfare. *Journal of Political Economy*, 100(3), 437–467. <https://doi.org/10.1086/261825>
- Chu, C. C., Hsu, P.-H., & Wang, Y.-T. (2023). The gender gap in the ownership of promising land. *Proceedings of the National Academy of Sciences*, 120(24), e2300189120. <https://doi.org/10.1073/pnas.2300189120>
- Conrad, C., & Doss, C. R. (2008). The AIDS epidemic: Challenges for feminist economics. *Feminist Economics*, 14(4), 1–18. <https://doi.org/10.1080/13545700802262998>
- Daudu, A. K., Awotide, B. A., Adefalu, L. L., Kareem, O. W., & Olatinwo, L. K. (2022). Impact of land access and ownership on farm production: Empirical evidence from gender analysis in southwestern Nigeria. *African Journal on Land Policy and Geospatial Sciences*, 5(1), 889–913. <https://doi.org/10.48346/IMIST.PRSM/AJLP-GS.V5I1.29079>
- de Haen, H., Klasen, S., & Qaim, M. (2011). What do we really know? Metrics for food insecurity and undernutrition. *Food Policy*, 36(6), 760–769. <https://doi.org/10.1016/j.foodpol.2011.08.003>
- de Janvry, A., & Sadoulet, E. (2016). Access to land and development. In M. Vernengo, E. Perez Caldentey, & J. Ghosh (Eds.), *The New Palgrave Dictionary of Economics* (2nd ed., pp. 1–5). Palgrave Macmillan.

- de Jong, L., De Bruin, S., Knoop, J., & van Vliet, J. (2021). Understanding land-use change conflict: A systematic review of case studies. *Journal of Land Use Science*, 16(3), 223–239. <https://doi.org/10.1080/1747423X.2021.1933226>
- De La O Campos, A. P., Edouard, F., & Salvago, M. R. (2023). Effects of land titling on household tenure security and investments: Evidence from Nicaragua. *Land Use Policy*, 126, 106547. <https://doi.org/10.1016/j.landusepol.2023.106547>
- De Schutter, O. (2015). The role of property rights in the debate on large-scale land acquisitions. *International Development Policy*, 6, 53–77. https://doi.org/10.1163/9789004304758_004
- de Soto, H. (2000). *The mystery of capital: Why capitalism triumphs in the West and fails everywhere else*. Basic Books.
- Deere, C. D., Durán, R. L., Mardon, M., & Masterson, T. (2004). *Female land rights and rural household incomes in Brazil, Paraguay and Peru*. (Working Paper No. 2004-08). <https://hdl.handle.net/10419/105741>
- Deininger, K., Ali, D. A., Holden, S., & Zevenbergen, J. (2008). Rural land certification in Ethiopia: Process, initial impact, and implications for other African countries. *World Development*, 36(10), 1786–1812. <https://doi.org/10.1016/j.worlddev.2007.09.012>
- Deininger, K., Goyal, A., & Nagarajan, H. (2013). Women's inheritance rights and intergenerational transmission of resources in India. *Journal of Human Resources*, 48(1), 114–141. <https://doi.org/10.3368/jhr.48.1.114>
- Deininger, K., Xia, F., & Holden, S. (2019). Gendered incidence and impacts of tenure insecurity on agricultural performance in Malawi's customary tenure system. *Journal of Development Studies*, 55(4), 597–619. <https://doi.org/10.1080/00220388.2018.1425395>
- Deininger, K., Xia, F., Kilic, T., & Moylan, H. (2021). Investment impacts of gendered land rights in customary tenure systems: Substantive and methodological insights from Malawi. *World Development*, 147, 105654. <https://doi.org/10.1016/j.worlddev.2021.105654>
- Dell'Angelo, J., D'Odorico, P., Rulli, M. C., & Marchand, P. (2017). The tragedy of the grabbed commons: Coercion and dispossession in the global land rush. *World Development*, 92, 1–12. <https://doi.org/10.1016/j.worlddev.2016.11.005>
- Dell'Angelo, J., Rulli, M. C., & D'Odorico, P. (2023). Will war in Ukraine escalate the global land rush? *Science*, 379(6634), 752–755. <https://doi.org/10.1126/science.adf9351>
- Dillon, B., & Voena, A. (2018). Widows' land rights and agricultural investment. *Journal of Development Economics*, 135, 449–460. <https://doi.org/10.1016/j.jdeveco.2018.08.006>
- Doss, C. (2006). The effects of intrahousehold property ownership on expenditure patterns in Ghana. *Journal of African Economies*, 15(1), 149–180. <https://doi.org/10.1093/jae/eji025>
- Doss, C., Kim, S. M., Njuki, J., Hillenbrand, E., & Miruka, M. (2014, April). *Women's individual and joint property ownership: Effects on household decisionmaking*. (IFPRI Discussion Paper No. 01347). <http://dx.doi.org/10.2139/ssrn.2483968>

- Duflo, E., & Udry, C. R. (2004). *Intrahousehold resource allocation in Côte d'Ivoire: Social norms, separate accounts and consumption choices* (Working Paper No. 10498). National Bureau of Economic Research. <https://doi.org/10.3386/w10498>
- Efobi, U. R., Beecroft, I., & Atata, S. N. (2019). Female access and rights to land, and rural non-farm entrepreneurship in four African countries. *African Development Review/Revue Africaine de Developpement*, 31(2), 179–189. <https://doi.org/10.1111/1467-8268.12376>
- FAO. (1996). Rome Declaration on World Food Security and World Food Summit Plan of Action.
- FAO. (1999). *Nutrition and development: A global challenge*. <http://www.fao.org/4/u9920t/u9920t07.htm>
- FAO. (2002). Mobilizing the political will and resources to banish world hunger: The World Food Summit – Five years later.
- FAO. (2011). *The state of food and agriculture 2010-2011: Women in agriculture: Closing the gender gap for development*.
- Folbre, N. (1996). Engendering economics: New perspectives on women, work, and demographic change. In M. Bruno & B. Pleskovic (Eds.), *Annual World Bank Conference on Development Economics 1995* (pp. 127–153). International Bank for Reconstruction and Development / World Bank.
- Goldstein, M., Hounbedji, K., Kondylis, F., O'Sullivan, M., & Selod, H. (2018). Formalization without certification? Experimental evidence on property rights and investment. *Journal of Development Economics*, 132, 57–74. <https://doi.org/10.1016/j.jdeveco.2017.12.008>
- Goldstein, M., & Udry, C. (2008). The profits of power: Land rights and agricultural investment in Ghana. *Journal of Political Economy*, 116(6), 981–1022. <https://doi.org/10.1086/595561>
- Grabe, S. (2010). Promoting gender equality: The role of ideology, power, and control in the link between land ownership and violence in Nicaragua. *Analyses of Social Issues and Public Policy*, 10(1), 146–170. <https://doi.org/10.1111/j.1530-2415.2010.01221.x>
- Grabe, S. (2015). Participation: Structural and relational power and Maasai women's political subjectivity in Tanzania. *Feminism & Psychology*, 25(4), 528–548. <https://doi.org/10.1177/0959353515591369>
- Higgins, D., Balint, T., Liversage, H., & Winters, P. (2018). Investigating the impacts of increased rural land tenure security: A systematic review of the evidence. *Journal of Rural Studies*, 61, 34–62. <https://doi.org/10.1016/j.jrurstud.2018.05.001>
- Holden, S. T. and Ghebru, H. (2011, March). *Household welfare effects of lowcost land certification in Ethiopia*. (CLTS Working Papers 3/11). Centre for Land Tenure Studies, Norwegian University of Life Sciences.
- Jackson, C. (2003). Gender analysis of land: Beyond land rights for women? *Journal of Agrarian Change*, 3(4), 453–480. <https://doi.org/10.1111/1471-0366.00062>
- Kamande, M. W., & Bahati, E. M. (2019). Effects of women land rights on agricultural outcomes in Rwanda. *African Journal on Land Policy and Geospatial Sciences*, 2, 60–70. <https://doi.org/10.48346/IMIST.PRSM/AJLP-GS.V2I1.15205>

- Kelly, L. D., Deaton, B. J., & Amegashie, J. A. (2019). The nature of property rights in Haiti: Mode of land acquisition, gender, and investment. *Journal of Economic Issues*, 53(3), 726–747. <https://doi.org/10.1080/00213624.2019.1644922>
- Kieran, C., Sproule, K., Quisumbing, A. R., & Doss, C. R. (2017). Gender gaps in landownership across and within households in four Asian countries. *Land Economics*, 93(2), 342–370. <https://doi.org/10.3368/le.93.2.342>
- Krishna, A. (2004). Understanding, measuring and utilizing social capital: Clarifying concepts and presenting a field application from India. *Agricultural Systems*, 82(3), 291–305. <https://doi.org/10.1016/j.agsy.2004.07.003>
- Kudo, Y. (2015). Female migration for marriage: implications from the land reform in Rural Tanzania. *World Development*, 65, 41–61. <https://doi.org/10.1016/j.worlddev.2014.05.029>
- Kumar, S., Patel, R., & Chauhan, S. (2020). Does land possession among working women empower them and improve their child health: A study based on National Family Health Survey-4. *Children and Youth Services Review*, 119, 105697. <https://doi.org/10.1016/j.childyouth.2020.105697>
- Laura, T., Constanza, T., Silke, S., Loui, W., & Brianna, H. (2023). *Feminist climate justice: A framework for action*. UN-Women.
- Lawry, S., Samii, C., Hall, R., Leopold, A., Hornby, D., & Mtero, F. (2017). The impact of land property rights interventions on investment and agricultural productivity in developing countries: A systematic review. *Journal of Development Effectiveness*, 9(1), 61–81. <https://doi.org/10.1080/19439342.2016.1160947>
- Linkow, B. (2019). Inheritance practices, investment incentives and women's control over land in rural Kenya. *Journal of African Economies*, 28(3), 304–322. <https://doi.org/10.1093/jae/ejy025>
- Lovo, S. (2016). Tenure insecurity and investment in soil conservation. Evidence from Malawi. *World Development*, 78, 219–229. <https://doi.org/10.1016/j.worlddev.2015.10.023>
- Luke, N., & Munshi, K. (2011). Women as agents of change: Female income and mobility in India. *Journal of Development Economics*, 94(1), 1–17. <https://doi.org/10.1016/j.jdeveco.2010.01.002>
- Lundberg, S. J., Pollak, R. A., & Wales, T. J. (1997). Do husbands and wives pool their resources? Evidence from the United Kingdom Child Benefit. *Journal of Human Resources*, 32(3), 463–480.
- Masterson, T. (2007). Female land rights, crop specialization, and productivity in Paraguayan agriculture. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.998600>
- McElroy, M. B. (1990). The empirical content of Nash-bargained household behavior. *Journal of Human Resources*, 25(4), 559–583. <https://doi.org/10.2307/145667>
- Meier Zu Selhausen, F. (2016). What determines women's participation in collective action? Evidence from a Western Ugandan coffee cooperative. *Feminist Economics*, 22(1), 130–157. <https://doi.org/10.1080/13545701.2015.1088960>

- Meinzen-Dick, R., DiGregorio, M., & McCarthy, N. (2004). Methods for studying collective action in rural development. *Agricultural Systems*, 82(3), 197–214. <https://doi.org/10.1016/j.agsy.2004.07.006>
- Meinzen-Dick, R., Quisumbing, A., Doss, C., & Theis, S. (2019). Women's land rights as a pathway to poverty reduction: Framework and review of available evidence. *Agricultural Systems*, 172, 72–82. <https://doi.org/10.1016/j.agsy.2017.10.009>
- Meinzen-Dick, R. S., Brown, L. R., Feldstein, H. S., & Quisumbing, A. R. (1997). Gender, property rights, and natural resources. *World Development*, 25(8), 1303–1315. [https://doi.org/10.1016/S0305-750X\(97\)00027-2](https://doi.org/10.1016/S0305-750X(97)00027-2)
- Melesse, M. B., Dabissa, A., & Bulte, E. (2018). Joint land certification programmes and women's empowerment: Evidence from Ethiopia. *Journal of Development Studies*, 54(10), 1756–1774. <https://doi.org/10.1080/00220388.2017.1327662>
- Mendola, M., & Simtowe, F. (2015). The welfare impact of land redistribution: Evidence from a quasi-experimental initiative in Malawi. *World Development*, 72, 53–69. <https://doi.org/10.1016/j.worlddev.2015.02.010>
- Menon, N., van der Meulen Rodgers, Y., & Kennedy, A. R. (2017). Land reform and welfare in Vietnam: Why gender of the land-rights holder matters. *Journal of International Development*, 29(4), 454–472. <https://doi.org/10.1002/jid.3203>
- Menon, N., Van Der Meulen Rodgers, Y., & Nguyen, H. (2014). Women's land rights and children's human capital in Vietnam. *World Development*, 54, 18–31. <https://doi.org/10.1016/j.worlddev.2013.07.005>
- Montcho, M., Padonou, E. A., Montcho, M., Mutua, M. N., & Bayen, P. (2023). Impact of land tenure on livelihoods of women livestock-keepers in Burkina Faso. *Land Use Policy*, 133, 106848. <https://doi.org/10.1016/j.landusepol.2023.106848>
- Muchomba, F. M. (2017). Women's land tenure security and household human capital: Evidence from Ethiopia's land certification. *World Development*, 98, 310–324. <https://doi.org/10.1016/j.worlddev.2017.04.034>
- Muchomba, F. M., Wang, J. S.-H., & Agosta, L. M. (2014). Women's land ownership and risk of HIV infection in Kenya. *Social Science & Medicine*, 114, 97–102. <https://doi.org/10.1016/j.socscimed.2014.05.055>
- Murken, L., & Gornott, C. (2022). The importance of different land tenure systems for farmers' response to climate change: A systematic review. *Climate Risk Management*, 35, 100419. <https://doi.org/10.1016/j.crm.2022.100419>
- Murshid, N. (2017). An assessment of the association between asset ownership and intimate partner violence in Pakistan. *Public Health*, 150, 1–8. <https://doi.org/10.1016/j.puhe.2017.05.004>
- Mustafa, S. (2022). The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict. FAO. <https://openknowledge.fao.org/server/api/core/bitstreams/4fce6098-a3ba-4742-b8f4-685454a5d409/content#page=56.10>

- Newman, C., Tarp, F., & Van Den Broeck, K. (2015). Property rights and productivity: The case of joint land titling in Vietnam. *Land Economics*, 91(1), 91–105. <https://doi.org/10.3368/le.91.1.91>
- Nguyen, M., & Le, K. (2023). The impacts of women's land ownership: Evidence from Vietnam. *Review of Development Economics*, 27(1), 158–177. <https://doi.org/10.1111/rode.12941>
- Ogundari, K. (2022). A meta-analysis of the impact of agricultural extension services. *China Agricultural Economic Review*, 14(2), 221–241. <https://doi.org/10.1108/CAER-07-2021-0130>
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Otsuka, K., & Place, F. M. (2001). *Land tenure and natural resource management: A comparative study of agrarian communities in Asia and Africa*. John Hopkins University Press.
- Owoo, N. S., & Boakye-Yiadom, L. (2015). The gender dimension of the effects of land tenure security on agricultural productivity: Some evidence from two districts in Kenya. *Journal of International Development*, 27(7), 917–928. <https://doi.org/10.1002/jid.3028>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372(71). <https://doi.org/10.1136/bmj.n71>
- Panda, P., & Agarwal, B. (2005). Marital violence, human development and women's property status in India. *World Development*, 33(5), 823–850. <https://doi.org/10.1016/j.worlddev.2005.01.009>
- Pandolfelli, L., Meinzen-Dick, R., & Dohrn, S. (2008). Gender and collective action: Motivations, effectiveness and impact. *Journal of International Development*, 20(1), 1–11. <https://doi.org/10.1002/jid.1424>
- Perrin, C., & Hyland, M. (2023, January). *Gendered laws and women's financial inclusion*. (Policy Research Working Paper No. 10282). World Bank. <https://hdl.handle.net/10986/38562>
- Persha, L., Greif, A., & Huntington, H. (2017, March). *Assessing the impact of second-level land certification in Ethiopia* [Paper presented at the World Bank Conference on Land and Poverty, Washington, DC, United States]
- Peterman, A. (2011). Women's property rights and gendered policies: Implications for women's long-term welfare in rural Tanzania. *Journal of Development Studies*, 47(1), 1–30. <https://doi.org/10.1080/00220381003600366>
- Peterman, A., Pereira, A., Bleck, J., Palermo, T. M., & Yount, K. M. (2017). Women's individual asset ownership and experience of intimate partner violence: Evidence from 28 international surveys. *American Journal of Public Health*, 107(5), 747–755. <https://doi.org/10.2105/AJPH.2017.303694>
- Pickering, C., & Byrne, J. (2014). The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers. *Higher Education Research & Development*, 33(3), 534–548. <https://doi.org/10.1080/07294360.2013.841651>

Polavarapu, A. (2020). Without land, without justice: How women's lack of land rights impedes access to justice. In D. Lawson, A. Dubin, & L. Mwambene (Eds.), *Gender, poverty and access to justice: Policy implementation in Sub-Saharan Africa* (pp. 133–145). Routledge.

Prindex. (n.d.). Five infographics on land and property rights in the Middle East and North Africa. <https://www.prindex.net/reports/fiveinfographics-land-and-property-rights-middle-east-and-north-africa/>

Quisumbing, A. R., Estudillo, J. P., & Otsuka, K. (2003). *Land and schooling: Transferring wealth across generations*. IFPRI

Quisumbing, A. R., & Maluccio, J. A. (2003). Resources at marriage and intrahousehold allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa. *Oxford Bulletin of Economics and Statistics*, 65(3), 283–327. <https://doi.org/10.1111/1468-0084.t01-1-00052>

Ratner, B. D., Meinzen-Dick, R., May, C., & Haglund, E. (2013). Resource conflict, collective action, and resilience: An analytical framework. *International Journal of the Commons*, 7(1), 183–208. <https://doi.org/10.18352/ijc.276>

Rehman, A., Ping, Q., & Razzaq, A. (2019). Pathways and associations between women's land ownership and child food and nutrition security in Pakistan. *International Journal of Environmental Research and Public Health*, 16(18), 3360. <https://doi.org/10.3390/ijerph16183360>

Rosenblum, D. (2015). Unintended consequences of women's inheritance rights on female mortality in India. *Economic Development and Cultural Change*, 63(2), 223–248. <https://doi.org/10.1086/679059>

Roy, S. (2015). Empowering women? Inheritance rights, female education and dowry payments in India. *Journal of Development Economics*, 114, 233–251. <https://doi.org/10.1016/j.jdeveco.2014.12.010>

Santos, F., Fletschner, D., Savath, V., & Peterman, A. (2014). Can government-allocated land contribute to food security? Intrahousehold analysis of West Bengal's microplot allocation program. *World Development*, 64, 860–872. <https://doi.org/10.1016/j.worlddev.2014.07.017>

Schlager, E., & Ostrom, E. (1992). Property-rights regimes and natural resources: A conceptual analysis. *Land Economics*, 68(3), 249–262. <https://doi.org/10.2307/3146375>

Schling, M., & Pazos, N. (2024). Effective land ownership, female empowerment, and food security: Evidence from Peru. *World Development*, 181, 106680. <https://doi.org/10.1016/j.worlddev.2024.106680>

Sen, A. (1999). *Development as freedom*. Anchor Books.

Shi, X., Huangfu, B., Jin, S., & Gao, X. (2024). Property rights, labor reallocation, and gender inequality in rural China. *Journal of Economic and Behavior Organization*, 220, 325–342. <https://doi.org/10.1016/j.jebo.2024.02.020>

Shwachman Kaminaga, A., & Sheldon, H. (2022). Help or harm? The impact of property titling on women's acceptance of intimate partner violence. *Journal of International Development*, 34(6), 1197–1212. <https://doi.org/10.1002/jid.3624>

Stevens, C., Panfil, Y., Linkow, B., Hagopian,

A., Mellon, C., Kulkarni, N., Bouvier, I., Brooks, S., Lowery, S., & Green, J. (2020). *Land and development: A research agenda for land and resource governance at USAID*. USAID

Teklewold, H. (2023). Understanding gender differences on the choices of a portfolio of climate-smart agricultural practices in Sub-Saharan Africa. *World Development Perspectives*, 29, 100486. <https://doi.org/10.1016/j.wdp.2023.100486>

Thomas, D. (1990). Intra-household resource allocation: An inferential approach. *Journal of Human Resources*, 25(4), 635–664. <https://doi.org/10.2307/145670>

Udry, C. (1996). Gender, agricultural production, and the theory of the household. *Journal of Political Economy*, 104(5), 1010–1046. <https://doi.org/10.1086/262050> Ward, C. L., & Harlow, S. (2021). R.E.S.P.e.c.T and intimate partner violence: A cross-sectional study using DHS data in Kenya. *BMJ Open*, 11(9), e046069. <https://doi.org/10.1136/bmjopen-2020-046069>

Ward-Batts, J. (2008). Out of the wallet and into the purse. *Journal of Human Resources*, 43(2), 325–351. <https://doi.org/10.3368/jhr.43.2.325>

Wiig, H., Bråten, R. H., & Fuentes, D. O. (2011). *Land ownership and women's empowerment – Combining survey and experiments in Peruvian rural households*. (Background paper for World Development Report 2012). World Bank.

Yokying, P., & Lambrecht, I. (2020). Landownership and the gender gap in agriculture: Insights from Northern Ghana. *Land Use Policy*, 99, 105012. <https://doi.org/10.1016/j.landusepol.2020.105012>