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Integrating gender in social learning approaches for agriculture and land management research and implementation projects

Insights and reflections from Sub-Sahara Africa

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Abstract

Contemporary global development discourses recognize the need for adopting inclusive approaches to sustainable development due to the complexities that characterize development and the pervasive inequalities and marginalization between and within states. Social learning approaches can be an important mechanism towards achieving inclusive sustainable development across contexts given the possibility they offer for addressing complex problems, like agriculture, land degradation or food insecurity, from inter- and transdisciplinary perspectives by working with all relevant stakeholders. Yet, questions regarding gender, intersectionality and inclusivity have been insufficiently addressed by social learning scholars and practitioners, particularly in the African agriculture and land management context. Relying on the existing body of knowledge on social learning and our transdisciplinary backgrounds and experiences, we explore approaches for integrating gender in social learning. We also propose an iterative framework for practical application of social learning with a gender perspective. We argue that developing and implementing an effective Gendered Social Learning (GSL) approach requires an excellent understanding of the study context and stakeholders, including the use of power and stakeholder analyses. The social learning process must be well institutionalized and facilitated to enhance trust among stakeholders. Again, a safe and inclusive space for dialogue and discovery, negotiating objectives and co-creating solutions is essential. Performing a gender analysis of relevant dimensions of diversity and intersectionality enables the solutions and innovations to be contextualized to the needs and priorities of diverse women, men and marginalized groups. This paper describes the theoretical frame of the GSL Approach, which is designed flexible enough to be adapted to various local contexts.

Keywords: Gender, social learning, participatory research, agriculture, land management

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1 Introduction

Heightened climate and environmental problems including rising temperature, erratic and unpredictable patterns and trends of rainfall, floods, droughts, desertification, soil erosion and air pollution among others, are pervasive across the globe, which threaten livelihoods and human development (Ackermann, 2024; Head & Alford, 2013; IPCC, 2022; Termeer et al., 2015; Weaver et al., 2024). The adverse effects of these problems are extreme in African countries where the livelihoods of many depend largely on the environment and natural resources, and poverty is still widespread (IPCC, 2018, 2019). For instance, agriculture including fishery and forestry, serves as the main sources of employment, livelihoods and food security strategies, particularly among the poor who double as the largest population on the continent (AGRA, 2018; World Bank, 2021a). The effects of climate and environmental challenges are further escalated by socioeconomic dynamics including high population growth, poverty, political instability and low technological capabilities and adoption (World Bank, 2021b).

Sub-Saharan Africa is under pressure to promote sustainable development amidst increasing demands on agriculture while minimizing its environmental footprints, coupled with extreme climate and environmental change effects, and limited resources (Garnett et al., 2013). Despite its vast arable land and the potential to feed its growing population, the agriculture sector in Africa largely performs poorly relative to other regions of the world (Gurib-Fakim, 2015). The vulnerability of African agriculture to climate and environmental shocks results in reduced yields quantity and quality (Sultan & Gaetani, 2016), affecting poor farm households in the form of reduced income, and food insecurity (Asare-Nuamah, 2021; Hamadjoda Lefe et al., 2024). Tackling complex problems generally, and particularly in resource-constrained environments, such as across Africa, requires a collective participation of multiple stakeholders with diverse perspectives, norms, values and belief systems (Candel, 2014; Lamboll et al., 2021; Termeer et al., 2015; Weaver et al., 2024).

Social learning has become an important and integral approach to promoting sustainable development, enhancing inclusive natural resources management and addressing complex challenges of the contemporary society (Bouwen & Taillieu, 2004; Lindley, 2015; McNaught, 2024; Muro & Jeffrey, 2008; Salvini et al., 2016; Schneider et al., 2009; Schwilch, Bachmann, Valente, et al., 2012; Soto et al., 2021). The proponents of social learning argue that effective engagement and participation of diverse stakeholders results in desired outcomes, and impacts – social change hinged on collective action (Bandura, 1977, 1986; Lindley, 2015; McNaught et al., 2024). Thus, driving the desired social change in agriculture and environment sector involves multi-stakeholder participation given the multiplicity of actors engaged in the sector (Cundill et al., 2024; M. S. Reed et al., 2010). For instance, climate and environmental challenges have multifaceted, complex and varying degrees of impacts on different stakeholders engaged in the sector. Their participation is important in creating solutions that fit their resource constraints, farming system and work environment (CGIAR, 2024; Haile et al., 2024).

According to Adger et al. (2004), Brooks and Adger (2004) and Head and Alford (2013), policymakers are faced with challenges in providing solutions to more complex problems such as those in the agricultural and land sector. The authors concur that inclusive policy processes are a good way for tackling such problems. Lamboll et al. (2021) support this position by arguing that multistakeholder social learning processes in five selected African countries contributed to reframing problems and solutions for sustainable agricultural intensification. The process enabled diverse stakeholders to co-identify the problems and co-develop context-specific solutions. Yet, many policymaking processes in Africa are often and generally not inclusive (Adger et al., 2004). For instance, in Ghana, Sarpong and Anyidoho (2012) note that smallholder (men, women, and youth) farmers and herders are sometimes excluded from policy processes, e.g., agriculture and climate change policies, that affect them.

Women and others vulnerable groups such as the poor, aged, youth, herders, persons with disability etc. have less space at both local and national levels in country policy and decision-making environments than men, implying their low participation in critical decision-making processes on the

African continent (Grun et al., 2021). For instance, in Burkina Faso, Grun et al. (2021) identified limited women participation in decisions related to land, agricultural work and labour. This is problematic given that women play significant roles in these sectors (UN Women, 2018a, 2018b). They play crucial roles in seed selection, land preparation, planting, farm management, and postharvest crop management etc. (Asare-Nuamah et al., 2024; Nischalke et al., 2017, 2018). Providing them with the needed resources and empowering them to participate effectively in decision-making can immensely contribute to enhancing food security, reducing poverty, and promoting sustainable agricultural transformation and development (FAO, 2012). Patriarchy, male dominance and intersectional factors such as age, income, ethnic identity, reinforce gender inequality and lead to low women participation in sustainable land management, agriculture, and climate change policies (Carr & Thompson, 2014; Fisher & Carr, 2015).

Recognizing the importance of stakeholder approaches and gender inclusion in decisions and policy processes, several studies have recommended a corresponding paradigm shift (Christinck & Kaufmann, 2017; Elias et al., 2017; Johnson et al., 2004; McGuire, Al-Zu'bi, et al., 2024; McGuire, Leeuwis, et al., 2024; Richardson-Ngwenya et al., 2018). Social learning can be seen as a way forward, yet, while being theoretically appealing, practical application is difficult. This is because of the observed difficulties in engaging diverse actors in research praxis (Stringer & Reed, 2007). Another layer of challenge that confronts social learning is the gendered power relations that are deeply rooted in sociocultural norms and values (Cornwall, 2003). This increases the complexity of who to select for stakeholder engagement, leading to a bias in conventional research that perpetually engages male household heads as the right stakeholders for engagement even when women have equal or similar roles to play (Twyman et al., 2015). While the emerging literature provides diverse approaches for engaging different stakeholders including women and other marginalized groups, Johnson et al. (2004) identified inadequate stakeholder selection and participation in many research projects. Egunyu & Reed (2015) also highlight that scholarly discourses on social learning rarely discuss gender issues even though social learning research has gained prominence, globally. A review by Johnson et al. (2004) showed that gender-responsive social learning research and implementation projects have high applicability in the developing world, including Africa.

To contribute to the emerging literature and enhance social learning and gender inclusion in agriculture and land management research and implementation projects, this working paper synthesizes lessons and experiences of social learning processes in agriculture and natural resource management research in Africa from a gender perspective. Based on the analysis, the study provides a framework for strengthening gender integration in social learning research and implementation projects. To accomplish the study objective, our methodology is grounded in integrative and narrative literature review. We also deeply engage with issues of reflexivity and positionality as scholars from both the Global South and North whose rich experiences within the 'South' and 'North' contexts and transdisciplinary backgrounds shape how we develop and implement research as well as how we engage our study participants in their contexts. For instance, we draw on our field experiences of engaging diverse stakeholders in Northern Ghana and Northern Benin under the INTERFACES project.[1] INTERFACES is an accompanying project to four regional projects funded by the German Federal Ministry of Education and Research (BMBF) in its Research for Sustainability strategy aimed at promoting sustainable land management in Sub-Saharan Africa.[2].

The rest of the paper is as follows: section two deals with an in-depth conceptualization of the meaning and nature of social learning; section three provides an overview of gender inequalities in agriculture and land management in Africa; section four discusses gender in social learning research in Africa, while section five entails a proposed framework for reflection and strengthening of GSL process, and conclusion.

[1] https://sustainable-landmanagement-africa.net/project/interfaces/

[2] https://sustainable-landmanagement-africa.net/en/

2 Conceptualizing social learning

This section examines current discourses on the meaning of social learning, its elements or features, and its transition from classical (cognitive) to transformative and relational learning as well as how it is practiced in contemporary times.

2.1 The concepts of social learning

Social learning has been widely applied in many fields including psychology, organizational and resource management, environmental management, education and sociology among others. Yet, social learning lacks a universally accepted definition (Reed et al., 2010). Social learning theory from pedagogical and psychological perspective was first used by Miller and Dollard (1941) and comprehensively expanded by Bandura (1977, 1986). With the expansion and application of social learning from psychology to other fields, scholars have added diverse perspectives of social learning. Lindley (2015:52) notes that many scholars (see for instance, Lotz-Sisitka et al., 2012; Reed et al., 2010) deploy social learning to denote two main meanings – the 'social aspect' and the 'learning aspect' of social learning.' The former relates to collectiveness (i.e., people coming together for a common goal) while the latter constitutes the approach used by the people to (de)construct knowledge and practices tailored to a common goal. However, these meanings are not explicit and do not offer a concrete understanding of social learning. Social learning theory offers a dynamic approach to human behaviour development through interaction in social setting or socially conditioned environment (Muro & Jeffrey, 2008).

A useful conceptualization is provided by Wals who defines social learning as the type of learning that occurs amidst divergent views, interests, values, norms and belief systems in relation to the construction and/or understanding of reality in an environment that is conducive to enhance meaningful interaction (Wals, 2007a, 2007b). However, this definition is limited to group learning, reflecting the paradigm shift from classical individualistic social learning to interactive (group) social learning (Johannessen et al., 2019; Lindley, 2015; Lotz-Sisitka et al., 2012, 2017; Lotz-Sisitka & Burt, 2006). In individualistic social learning, individuals' behaviour is influenced by how members of a community behave based on the existing culture, norms, values and experiences. Such classical social learning is not interactive as an individual learns from the society but not with the society. Contrarily, interactive social learning embraces learning within a group where there is strong emphasis on negotiations, discussion and deliberations among members of the group towards a common goal. Such learning is highly appealing to addressing complex societal challenges, explaining why it is commonly used in recent times (Lotz-Sisitka & Burt, 2006).

Parson and Clarke describe (group) social learning as learning that takes place among individuals in a social milieu or learning among social aggregates (Glasser, 2007). Group learning allows members to observe and learn from each other, which von Schönfeld et al. (2020) call the imitated forms of learning in a social context. van der Wal et al.'s (2014) definition of social learning goes beyond just learning that occurs in a group but also emphasizes the relevance of responsibilities in addressing a problem. They define social learning "*as a convergent change in the stakeholders' perspectives on the problem and its possible solutions and risks, as well as on their own and the other stakeholders' position and responsibility regarding solving the problem*" (van der Wal et al., 2014:2). This contends with Lotz-Sisitka & Burt's (2006) submission that structure and agency (capacity to effectively participate) are crucial for effective social learning and the desired change.

Social learning can be applied for several purposes and outcomes, and has been particularly recommended by scholars and practitioners for addressing sustainable development challenges (Bonatti et al., 2021; Egunyu & Reed, 2015; Lilja & Bellon, 2008; Thi Hong Phuong et al., 2017). Addressing development challenges usually requires changing norms, values and human behaviour in an interactive manner. Classical learning scholars argue that the primary goal of learning is changing

behaviour (Lindley, 2014). Like many participatory approaches, social learning is grounded in a theory of change that aims at altering the behaviour of individuals and groups to achieve desired outcomes (Lindley, 2015; Muro & Jeffrey, 2008). However, not all behavioural changes are rooted in or underpinned by learning while a change in intentions, values and interests as a result of learning may not necessarily lead to changing human behaviour (Muro & Jeffrey, 2008). According to Bandura (1986), social learning enables individuals and groups to observe and adopt/adapt other people's behaviour, emotional reactions and attitudes in an interactive approach. Bandura further argues that achieving the desired social change is a function of environment-cognitive relationship. Hence, Bandura's revised social (cognitive) learning theory emphasizes the centrality of cognitive capabilities in driving desired social change and behaviour among groups. Nevertheless, environment-cognitive relationship is reinforced by both self-reflexive and self-regulatory mechanisms. These mechanisms enable individuals in a group or social interaction to control/restrain their actions, reflect on their norms and values and the underlining behaviour, and accordingly adapt their behaviour and cognition.

According to Kilvington (2010), amidst the debates surrounding what social learning really is, there are also conflicting views among scholars on whether social learning is a means to an end or an end in itself. Another discussion is grounded in the debate surrounding whether social learning is a process whereby individuals learn from each other or the end product of social interactions (Reed et al., 2010). For Lindley (2015), social learning should not be viewed as a mere learning process but rather an objectifiable tool that can be used to achieve socially desired outcomes. Lotz-Sisitka et al. (2012) warn that the multiplicity of conflicting views and the corresponding lack of clarity on what social learning is, can result in ontological collapse in both research and practice, which may affect how social learning is implemented as a participatory approach.

2.2 Social learning and its relation to participatory aproaches

Participatory approaches have gained heightened attention and applicability in contemporary development and research practices, particularly since the 1970s and 1980s (Barreteau et al., 2010; Chambers et al., 1989; Gilbert et al., 1980; Scoones & Thompson, 2009). Participatory research and development emerged from the observation that conventional research and development was top-down, paid less attention to the context of beneficiary communities, which inherently affected their effectiveness and outcomes (Johnson et al., 2003, 2004). Another argument that facilitated the need for participatory approach was that insights of scientists alone were insufficient to address social, economic and environmental problems which are deeply embedded in the culture, norms, values and belief systems of the supposed beneficiaries (Christinck & Kaufmann, 2017). In essence, scientists' insights do not guarantee that their proposed solutions and innovations will be adopted. Hence, it became apparently relevant for a paradigm shift in how research and development are practiced and implemented (Chambers, 1994).

For agricultural research, it became clear that transformative knowledge[3] and change requires placing farmers at the center of knowledge and innovation production and application (Chambers et al., 1989; Steyaert et al., 2007). As noted by Freire (1973), learners are active participants in the co-creation of knowledge that aim at addressing issues within their context. Hence, engaging actors, such as farmers, in dialogue contributes substantially to solutions that meet their needs, priorities and contexts. Smallholder farmers are regarded as essential knowledge creators and change agents due to their continued experimentation and experience with farming systems and ecological changes (Dolinska & d'Aquino, 2016). Consequently, their views, knowledge and experiences are important for addressing localized problems, such as climate change, soil and land degradation and low agricultural productivity. Participatory approaches therefore become a crucial mechanism for transformative change.

[3] Knowledge that serves as a catalyst for change in attitudes, behavior, orientation etc. of an individual or a group, leading to the creation of transformation in ones' immediate and/or distant environment as s/he applies the knowledge (knowhow).

Social learning is one of the participatory approaches (Blackmore et al., 2007; Bonatti et al., 2021; Galan et al., 2023; Lopez et al., 2023; Pelling et al., 2008), and others also exist, such as co-creation and co-production (Akpo et al., 2015; Nguyen et al., 2024; Reed & Abernethy, 2018; Restrepo et al., 2018; Voorberg et al., 2015), adaptive and collaborative governance (Ison et al., 2013; Kemp et al., 2005; Li et al., 2022; McDougall, Jiggins, et al., 2013; McDougall, Leeuwis, et al., 2013; McNaught, 2024; McNaught et al., 2024; Pereira, 2012; Wang & Ran, 2023), and participatory action research (Alvarez et al., 2010; Chambers et al., 1989; Gerger Swartling et al., 2019; Langley et al., 2018; Mapfumo et al., 2017). One common characteristic of these participatory approaches is that they aim at enhancing a better understanding of the system and the existing challenges, constraints, and opportunities through systematic involvement of a diverse range of stakeholders, with the objective to develop context-specific solutions acceptable to and implementable by the concerned target group (Darnhofer et al., 2012; Hildebrand & Waugh, 1986).

Given that conventional but also participatory research perpetuates cultural bias by often engaging male household heads and opinion leaders in framing a problem and the associated solutions (Twyman et al., 2015), participatory approaches need to address pervasive gender inequality and asymmetry power relations (Cornwall, 2003; Johnson et al., 2004). This is important if participatory approaches are to effectively address societal problems and promote transformational change. Consequently, the need to engage diverse actors raises a critical question of who to engage and how to engage them (Lilja & Bellon, 2008; Lilja & Dixon, 2008, 2011). Hence, who and how to involve diverse actors is crucial in participatory approaches. According to participatory methods critiques, often the approaches to selecting and engaging diverse actors miss the opportunity to include women and youth and other marginalized groups, thereby perpetuating cultural bias (Cooke & Kothari, 2001; Cornwall, 2003; Johnson et al., 2004; Paris et al., 2008). Social learning offers the opportunity to overcome this gap by ensuring the active engagement of diverse actors through the provision of common spaces (e.g., workshops, community fora etc.) for deliberation and dialogue, thereby enhancing its usefulness in addressing complex societal challenges (Bonatti et al., 2021; Lamboll et al., 2021; Lopez et al., 2023; Pelling et al., 2008).

2.3 Good practices and elements of social learning

Lotz-Sisitka et al. (2012) posit that social learning discourse is filled with extensive information on what social learning is and its associated outcomes, and less on how social learning processes are to be undertaken effectively. Thus, how social learning is done is as important as social learning outcomes. To this end, social leanring scholars, such as Wals (2007a; 2007b) argue that there is the need for a paradigm shift in the social learning discourse from 'what' to 'how' of social learning where emphases are placed on what people want to learn, how they can learn what they want to learn, and how what they want to learn and how to learn it can be applied to challenge social norms for sustainable future. In effect, some good practices are critical for effective social learning, as illustrated below.

2.3.1 Addressing power asymmetries, gender and intersectionality

Engaging diverse knowledge sources and holders requires a critical attention to power relations (Reid et al., 2008; Wals, 2015). According to Lotz-Sisitka & Burt (2006), it will be naïve for participatory researchers and practitioners to neglect power relations that inherently characterize participatory learning. Different actors have different values systems and experiences, which reinforce their priorities. This results in competing interests and tension in social learning (Lotz-Sisitka & Burt, 2006). Typically, the more powerful actors are likely to impose their priorities and views on less powerful individual in participatory learning. According to Parkhurst (2017), traditional learning and policy environment are inherently characterized by asymmetric power relations and dynamics, which enable powerful individuals to champion their position, values and agenda in a group while compromising the voices of less powerful individuals. As indicated by Rahnema (1992), power in participatory learning is

highly dependent on the extent of actor's knowledge. Highly knowledgeable actors are likely to exercise this power in participatory learning, which greatly affects both the process and the outcomes of social learning. Given this, it is highly important for participatory methods to address existing asymmetric power relations among actors. Failure to identify and address power relations in social learning contributes to and reinforce historical, structural and cultural inequalities.

Multiple approaches have been highlighted in the literature to address power relations (Bentley Brymer et al., 2018; Elstub, 2010; Engeström, 2000; Engeström & Sannino, 2010; Escobar, 2011; Selby, 2007). For instance, providing inclusive space for deliberation and dialogue plays an essential role in tackling power relations. According to Escobar (2011), dialogues and deliberations are two essential approaches for enhancing effective participation of public engagement practitioners, which is equally applicable in social learning. There is the tendency that dialogues may not necessarily result in shared or collective action as some individual may cede their views to accept others' views and positions. Inversely, deliberation offers a greater opportunity for resolution and collective decision-making given that deliberation embraces convergent communication and conversation. Thus, actors participating in social learning ought to do that out of their own free-will and should be able to speak and express themselves freely. Adopting democratic principles such as collaborative and flexible processes and not necessarily ad hoc activities in social learning is essential to ensure that systemic barriers associated with conventional learning approaches are minimized or avoided completely, if possible (Vogel & Punton, 2018). Lindley (2015) argues that dialogue in social learning is seen as a step towards promoting a just and equitable social solution and development as diverse knowledge sources are recognized and integrated in the process.

Using social learning approaches and being aware of power relations also entails ensuring that the learning process is gender-responsive and addresses intersectional discrimination. This implies social learning processes must ensure active participation of women from different groups and marginalized groups, and develop innovations and solutions that addresses structural inequalities affecting these groups. It is important for social learning researchers and practitioners to understand the contexts of men and women, and ensure equal or fair participation and representation (Lotz-Sisitka & Burt, 2006). Fair participation of women and other marginalized groups can also be ensured if the space for social learning is conducive for such groups to express their views openly and freely. In terms of the latter, innovations and solutions emerging from social learning must tackle inequalities by improving the capacities of marginalized groups through developing and implementing complementary solutions that meet the specific needs of marginalized and underrepresented groups (McGuire, Leeuwis, et al., 2024). This can be achieved through in-depth understanding and analysis of intersectional factors such as age, gender, level of education, access to resources and credits, wealth status, mobility, marital status, locality, household size, farm size among others, that reinforce inequalities, especially among women (Akurugu, 2020, 2021; Davis, 2008; Kaijser & Kronsell, 2014; McCall, 2005; Tavenner & Crane, 2019; Van Aelst & Holvoet, 2016).

2.3.2 Facilitating social learning

Social learning, like many participatory approaches, requires skillful facilitation of the learning process (Prutzer et al., 2021). As noted by Lotz-Sisitka & Burt (2006) and Lotz-Sisitka et al. (2012), the processes of social learning are equally important as the outcomes of social learning. Facilitation is the binding ingredient that tie social learning process to its outcome. Hence, how the social learning process is facilitated influences the outcome. According to Lamboll et al. (2021), effective facilitation of multistakeholder social learning in five African countries resulted in improved collective learning processes and collective action, and reframed problems and solutions collectively. Facilitation is an essential component of social learning and the manner within which facilitation is done can negatively or positively influence both social learning processes and outcomes. Effective facilitation stimulates participatory communication in a non-restrained and freed manner, minimizes confirmatory and cognitive political biases. It ensures that underrepresented and less powerful individuals in group decision-making processes are given equal space and opportunities just like more powerful members

in the group. Through effective facilitation, relational and cognitive capacities are enhanced as social learning facilitators ensure that there is trust and respect among members and in relation to their values, norms and belief systems.

Skillful facilitation contributes to minimizing barriers in participatory learning. As noted by Lindley (2015), the work of a facilitator in social learning is not to merely direct or facilitate the learning process. In addition, facilitators play the role of knowledge brokers by ensuring that participants have requisite knowledge and understanding of the social learning process and its relevance. It is highly essential for a social learning facilitator to provide participants with relevant and in-depth information to enable them to participate effectively in the process. This can contribute substantially to improving actors' capacities to participate in social learning. Lamboll et al. (2021) assert that strengthening relational (i.e., trust and respect), normative and cognitive capacities among individuals in group decision-making can significantly result in shared processes and outcomes. Such capacities are critical in ensuring that members in group decision-making express themselves without any restrictions, contributing effectively to the decision process, learn from each other and decide collectively towards the desired outcome for the group. Social learning facilitator should also ensure that the space provided for social learning is inclusive and convenient to diverse actors and knowledge holders, including women and marginalized groups.

For instance, a facilitator may realize that certain individuals and groups have suddenly become quiet during the discussion of specific sensitive issues. In such cases, multiple approaches including follow up and segmentation (for example, sub-grouping based on gender and observable differences etc.) can help ensure effective discussion especially on sensitive issues, and address cognitive and confirmatory biases. Segmentation particularly enables individuals and groups to discuss issues from their collective identity due to the homogeneity of their experiences in a specific context. Also, working in subgroups contributes to trust building within the subgroups and among participants (Restrepo et al., 2018). It is important that collective views that emerge from segmentation are further presented and discussed with all participants for consensus. Another approach to facilitation is the distribution of sticky notes or notepads to enable all participants express their views in writing. This is partly useful for introverted participants who are less likely to voice out their experiences and views but can contribute effectively to the issues discussed through writing. Similarly, the facilitator can provide an opportunity for a specific participant to express him or herself, especially when his or her views are less heard in the group discussion. Skillful facilitators should be alert to identifying non-verbal cues and body languages and provide appropriate mechanisms to engage all members in social learning.

Similarly, managing tensions and addressing conflicts are key responsibilities of a social learning facilitator. Disagreement in terms of direction and use of concepts or terms, commonly referred to as linguistic uncertainty (Brugnach et al., 2008) or data semantics (Hamilton et al., 2015; Kelly et al., 2013) frequently emerges during participatory decision-making and can hinder collective decision if not properly managed. Structured conflict and mediation mechanisms including active listening, open dialogues for mutual understanding and encouraging all participants to raise their concerns and views are effective for addressing conflicts in social learning (Kotir et al., 2024; McNaught, 2024; McNaught et al., 2024). They also contribute to building trust and strengthening open and transparent discussion. It is essential for the facilitator to emphasize that there are no wrong answers in social learning since people express their views and perspectives based on their unique position and experiences. However, conflicting views are required to be collectively discussed to ensure the outcome from the social learning process meets the context of all stakeholders.

2.3.3 Evaluating social learning

It is important for social learning researchers and practitioners to evaluate the learning processes and outcomes. Evaluating social learning processes and outcomes can contribute essentially to improving future learning processes and strengthen collective actions (Restrepo et al., 2018). However, how do researchers and practitioners assess the effectiveness of social learning processes and outcomes?

Multiple perspectives and approaches have been prescribed as appropriate for evaluating social learning (Ernst, 2019; Prutzer et al., 2021; van der Wal et al., 2014). Kirkpatrick & Kirkpatrick's (2006) evaluation model provides a good example. The model focuses on four levels of analysis which include reaction, learning, change in actions and impacts. Restrepo et al. (2018) adopted Kirkpatrick & Kirkpatrick's (2006) model together with the learning loop framework (Argyris & Schön, 1978; Kaufmann, 2007, 2011) to explore how knowledge creation among dairy farmers in Kenya resulted in the collective development and application of innovations and solutions among the farmers.

For von Schönfeld et al. (2020), evaluating social learning involves an analysis of the kind of interactions and knowledge exchange that occur in the learning processes. Such analysis enables researchers and practitioners to benchmark social learning outcomes with prior objectives. Lamboll et al. (2021) also suggest the adoption of theory-based evaluation techniques to understand the effectiveness of social learning. Making reference to the literature (see Mayne, 2015; Mayne & Johnson, 2015; Stern et al., 2012; Woolcock, 2013), Lamboll et al. (2021:613) explain that '*theory-based evaluation is an appropriate approach for contexts of complexity, offering a credible evaluation of contribution, based upon a sequence of activities for increasing the trustworthiness of the analysis and generative causality*.' Another useful evaluation approach is through theory of change. According to Mayne (2015), theories of change can serve as useful tools and framework for evaluating the effectives of interventions or social change in complex environments. Parkhurst's (2017) governance of evidence framework is also applicable in assessing the effectiveness of social learning-based interventions. Thus, promoting science-policy-practice relationships, minimizing inequalities and ensuring the collective development of equitable and just solutions, can be achieved through the application of robust evidence-based evaluation frameworks and indicators.

3 An overview of gender inequalities in agriculture and land management in Africa

Women are critical agents for transformative change, sustainable land management and agricultural production through their numerous roles including land preparation and harvesting fuelwood (FAO, 2012). Several studies provide evidence of the role of women in agricultural development across the African continent (AGRA, 2021; Caswell & Jang, 2024; Danso-Abbeam et al., 2020; Tsikata & Yaro, 2014). For instance, women serve as agents of change for increasing the uptake of conservation agriculture, integrated soil and water management in Africa, thereby promoting sustainable agriculture intensification and resources (i.e., land, forest and water) management (Ali et al., 2014) and food security (Dazé & Terton, 2021). They also contribute to sustainable management of forest resources through afforestation and sustainable harvesting and use of fuelwood (Egunyu & Reed, 2015; Elias et al., 2017; Hegde et al., 2017). Case studies in Tanzania and elsewhere demonstrate that women's participation in forest and water governance strengthens effective management of such resources (Lecoutere et al., 2015; Leisher et al., 2016). Danso-Abbeam et al. (2020) report that women's roles such as sowing and drying beans contributes immensely to the quality of cocoa production in Africa in general and West Africa in particular. According to the African Development Bank (AfDB), women constitute 68% of the labour forces in the cocoa sector in Ghana and Ivory Coast while about a quarter of the cocoa farmers in those countries are women (AfDB, 2015).

At the household and community levels across many African societies, such as those in Ghana, Burkina Faso, Chad etc., male dominance and patriarchal patterns inhibit or limit women's access to land and other productive resources and in situations where women have access to these resources, they are largely controlled by men (Akurugu, 2020, 2021; FAO & AU, 2018). In rural northern Ghana, evidence from Akurugu (2020, 2021) indicates that dominant male and patriarchal ideologies combine with exogamous marriage practices to constrain women's access to productive land and agency in decision-making involving farm produce. This corroborates reports from several other studies in Ghana (Baidoo, 2022; Britwum, 2022; Britwum et al., 2014, 2019; Yaro, 2010). Indeed, in many African settings, women are often allocated marginal agriculture lands, which are unsuitable for robust and transformative agricultural production (Doss & Meinzen-Dick, 2020; FAO, 2002; Meinzen-Dick et al., 2019). As such, many women resort to the production of household staple crops, particularly vegetables, which partly thrive even in poorly fertile soils (Abdulai & Soeters, 2018). The dispossession of land and other resources among the marginalized groups, particularly women and youth, is reinforced by the cultural and patriarchal systems of inheritance in African societies, which further determine power structure, dynamics and relations as observed in Burkina Faso (Grun et al., 2021). Hence, male dominated power structures limit women's exercise of power in many African societies, leading to their exclusion in policy formulation (Grun et al., 2021). Even in democratic African countries such as Ghana, women continue to face perpetual barriers and gender biases in their efforts to participate in public engagement both at the community and national levels (Amoah, 2024; Tseer et al., 2024). This is partly due to the little or poor recognition of women's land rights in many patriarchal African societies (Meinzen-Dick et al., 2019).

Instituting effective land right regimes has been recommended as a pathway to tackling inequalities, promoting women's land ownership and strengthening agriculture transformation and innovation adoption (AUDA-NEPAD-GIZ, 2020; Critchley et al., 2023). This is because land rights enhance land ownership and security, and strengthen investment in land (Critchley et al., 2023). While current land regimes in patriarchal African societies have seen improvement, they however do not cater to the specific contexts and needs of women and other marginalized groups in these societies. For instance, the implementation of the Land Administration Project I & II in Ghana sought to strengthen equitable and just land tenure regimes, and improve land ownership and security especially among the poor and vulnerable (Quaye, 2016). Yet, the bureaucratic process of land registration coupled with high registration cost discourage the participation of the vulnerable poor. In fact, the current land regime has rather reinforced land grabbing, commoditization and encroachment across the country, further

worsening the vulnerability of women and other marginalized groups in possessing lands (Britwum et al., 2014; Dancer & Tsikata, 2015; Obeng-Odoom & Gyampo, 2017; Tsikata & Yaro, 2014; Yaro, 2010).

Unequal power relations at the household and community levels also contribute to gender inequality and affect women participation in agriculture (Grun et al., 2021). Essential decisions, such as what to plant and which innovations to adopt, are often regarded as men's domain with little influence of women. Women's roles and responsibilities in patriarchal households are often referred to mainly to cooking and reproductive functions, and as supporters of males on the farm though women also get small "own" plots allocated by their husbands to contribute to household food security (Britwum, 2022). Consequently, state policies and interventions, such as subsidies and the supply of farm inputs and equipment target male household heads given their presumed access to land and other resources as well as being the decisionmakers at the household and farm levels while neglecting the crucial role of women and legitimizing further an unjust distribution of resources, roles and responsibilities amongst households (Manfre et al., 2013). For instance, agriculture advisory and technical services usually target male farmers (Manfre et al., 2013). Baidoo (2022) also indicates that development interventions, that aim to address gender, tend to perpetuate gender inequalities as they tackle practical roles of women as a form of empowerment without necessarily addressing their strategic roles which are deeply entrenched in norms and values. Farnworth & Colverson (2015) argue that the existing historical, cultural and structural inequalities that women face in many Sub-Saharan societies limit their power and agency for change. Addressing the prevailing inequalities requires transformative change, addressing also the norms, building awareness and capacities amongst women and men for prevailing gender inequities and their consequences, and providing space for farming women and marginalized groups, but also for representing stakeholders such as gender experts in ministries, CSOs and NGOs, to participate in policies and learning processes for collective actions.

4 Gender in social learning approaches for the agriculture and land management in Africa

4.1 Gender inequality and exclusion in social learning

In Africa, the prevailing gender inequalities in diverse settings and sectors including policies, are reflected in social learning research and processes. This is partly due to two main factors: (1) the social learning literature appears to be gender blind with little to no attention on gender differences when dealing with complex problems that have gender differentiated impacts, (2) structural, cultural and political inequalities perpetuated largely by patriarchy, cultural norms and values, disadvantage sections of society, particularly women, youth and other marginalized groups. These inherently often lead to the exclusion of women in social learning processes on the continent. Twyman et al. (2015) emphasize that conventional research continues to neglect the rich roles played by women and marginalized groups in addressing socio-environmental problems. A recent study in Uganda shows that even when women are involved in participatory solution development, they are often excluded from decision-making roles, which affects their participation and the development of solutions that prioritize their specific needs (CGIAR, 2024). Women exclusion in the co-development of context-specific solutions has serious implications as it can perpetuate inequalities and worsen the current conditions of women and other vulnerable groups in many settings. Implicitly, women exclusion in social learning process may result in innovations and solutions that are not adaptable by women as they may not meet their needs, preferences and priorities. Such solutions can further worsen the burden of women, particularly in the agriculture sector where women already play substantial roles in addition to household chores and their reproductive role. Women exclusion in social learning processes also affects their opportunity to acquire requisite knowledge and capacities that are inherent in social learning. Emerging studies consistently warn that achieving sustainable development may not be possible if women's needs are not addressed. As shown by Paris et al. (2008) and other scholars, there is compelling evidence that women possess rich knowledge and experiences that can shape the development of effective solutions and innovations, for instance, women's role in selective breeding. Yet, they are often excluded in critical decision-making processes. Therefore, participatory approaches and social learning requires critical attention to issues of gender, inclusion and intersectionality.

4.2 Emerging evidence of gender inclusion in social learning research projects

Notwithstanding the existing gender inequalities in social learning processes in Africa, there is an evidence of a steady increase in women inclusion in social learning approaches in recent times. Including women in social learning processes enables them to bring diverse perspectives based on their gender and sociocultural experiences that can significantly influence both social learning processes and outcomes (Egunyu & Reed, 2015; Elias et al., 2017; Hegde et al., 2017; Kabeer, 2020). Also, women voices and experiences can significantly alter values, norms and behaviour that are necessary for sustainable development (Asare-Nuamah et al., 2024; Cornish et al., 2021; Nischalke et al., 2017). This corroborates Agarwal's (1997, 2007) submission that women membership in (social learning) groups promotes collective and transformative action by challenging norms that perpetually hamper their agency to enhance their empowerment and contribute to sustainable environment and development. For the following discussion, it is important to highlight that some of the reviewed studies use social learning and other participatory approaches interchangeably, given the common characteristics and approaches adopted by participatory methods (Lelea et al., 2014; Restrepo et al., 2014).

In Kenya, Ethiopia and Uganda, the need to tackle post-harvest losses and improve value addition in the food value chain resulted in the adoption of collaborative learning processes with diverse stakeholders comprising of women groups involved in the value chain (Lelea et al., 2014). Restrepo et al. (2018) also applied collaborative learning to investigate the causes and proposed solutions for milk losses among peasant dairy farmers in Kenya. To enhance better integration of agricultural research for development (AR4D) projects and strengthen innovation testing in heterogenous farming systems in Tanzania, the study by Richardson-Ngwenya et al. (2018) applied participatory learning with a particular emphasis on collectively analyzing and understanding the problems and constraints that different farmers in the agriculture system face. The authors argued that the adoption of participatory problem analysis with socially differentiated actors can serve as good entry points for innovation and AR4D projects, as it contributed towards an improved understanding of the contexts of smallholder farmers in Tanzania.

Forsythe et al. (2024) report the application of collaborative learning processes from case studies in Nigeria and Uganda towards the development of a gendered food product profile with multiple stakeholders. The overarching aim of their approach, as noted by the author, was to itemize "prioritized food quality characteristics and support breeders to make more socially inclusive decisions on the methods for trait characterization to select genotypes closer to the needs of food system actors." In Nigeria, the authors prioritized the cassava '*gari-eba*' processing value chain while in Uganda the emphasis was on both boiled sweet potato and boiled cassava value chains. Similarly, Farnworth et al. (2013) noted that multistakeholder and gendered social learning processes in Mozambique, Ethiopia, Zambia, Kenya and Zimbabwe improved gender relations in land rights, community empowerment, value chains, and climate smart agriculture across the case study countries. According to Lopez et al. (2023) and Shaw & Kristjanson (2014), some research undertaken at the Consultative Group on International Agriculture Research (CGIAR) Centers adopted social learning and socially differentiated approaches to improve sustainability among rural poor farmers including women.

Social learning and gender has also been applied in forest governance due to its complex nature (Coleman & Mwangi, 2013; Elias et al., 2017; Leisher et al., 2016; Nchanji et al., 2017; Phiri et al., 2022). For instance, Phiri et al. (2022) demonstrate how women engagement in social learning processes in Ghana, Nigeria and Tanzania contributed to improved forest resource management. In Uganda, Shaw & Kristjanson (2014) explain that a collaborative social learning approach helped improve forest resource management. This is consistent with the case of women's participation in social learning for forest governance in Uganda (Egunyu & Reed, 2015). In Burkina Faso, Karambiri et al. (2017) report that a collaborative learning process that involved both men and women of diverse age groups provided better insights into how men and women roles and experiences influence the preferences and classification of shea varieties, thereby supporting the domestication of local and indigenous shea varieties. According to Lindley (2015), wetland management in South Africa also benefits immensely from the adoption of social learning processes that reflect gender roles and relations.

4.3 Approaches to and effects of integrating gender in social learning

Integrating gender in social learning is influenced by diverse factors, categorized into two dominant frames – the participant composition-based approach and topic/issue-based approach. The participant composition-based approach prioritizes how participants in social learning should be constituted. Emphasis in the participant composition is given to who can effectively participate in the process. As noted by Kilvington (2010) and Lotz-Sisitka & Burt (2006), the capacity for constructive engagement and interactions is imperative for social learning processes. As such, one's agency influences and determines the ability to participate in social learning. Some studies resort to the inclusion of gender experts in their participants' composition to ensure that their perspectives and experiences enrich the

learning process as well as ensure that gender issues are mainstreamed into the learning process (Lamboll et al., 2021; Lopez et al., 2023; McGuire, Leeuwis, et al., 2024).

The topic/issue-based approach emphasizes the topic, issue or challenge for which social learning is needed and the stake or role women have in this topic. For instance, Egunyu & Reed (2015) show that women play key roles in forest and forest resources management and hence cannot be excluded in social learning processes that aim at improving forest management. Similarly, Restrepo et al. (2018) posit that the centrality of women in the dairy value chain in Kenya necessitates their engagement in social learning. For this reason, women dairy groups formed the key participants for their study. Unlike the selection of experts, the topic or issue related factors favour the inclusion of local women, women groups and other local actors. It is important to highlight that the level of engagement may influence how gender is integrated in social learning. Social learning processes at the national levels often prefer experts rather than individuals, such as local farmers (see for e.g., Lamboll et al., 2021). However, for local engagement, while experts can be engaged there is always the preference for local actors and communities of practices whose daily experiences are essential for addressing their immediate socioeconomic and environmental issues. However, both approaches work in synergy with each other.

Apart from the factors explained above that influence gender integration in social learning, a key approach to achieving gender integration and social inclusion is by providing separate spaces for men and women as part of a multistakeholder social learning processes. Shaw & Kristjanson (2014) refer to it as the social differentiation approach to social learning. By providing such spaces, vulnerable groups who risk not being heard may have sense of belonging and trust in equal gender identities and roles, and may therefore voice their experiences better, which can shape collective strategies and actions for tackling inequalities within gender. Lelea et al. (2014) and Restrepo et al. (2014) also recommend interaction between and within subgroups as an important approach to achieve gendered focus dialogues. This concurs with Fisher & Carr's (2015) differentiated vulnerabilities and capacities between and within gender. As such, multistakeholder social learning processes ought to recognize the differences within gender and provide the necessary strategies that can enhance effective participation of diverse categories of men and women (Shaw & Kristjanson, 2014).

In Kenya, the adoption of tasks and sociodemographic-focus subgroups enabled women dairy farmers to interact with each other as well as learn with men (Restrepo et al., 2018). According to Farnworth & Colverson (2015), social learning approaches go a long way in the realization of the needs and capacities of different gender groups as they help in the identification and framing of preferred solutions that suit the context of both men and women. Farnworth & Colverson (2015), recommend the need for social learning processes to ensure that both men and women acquire the requisite skills to make sound and informed economic decision, which can drive sustainable development in agriculture and other areas. This can be achieved through an improved understanding and identification of the needs and barriers associated with women and other gender groups (Deering, 2019) based on a rigorous gender analysis. In their multistakeholder social learning case studies in Africa, Lamboll et al. (2021) found that both women and men improved their skills and knowledge in framing problems and solutions, which enabled them to make informed decision for agricultural intensification. Farnworth et al. (2013) also asserts that integrating gender in collective learning processes has contributed to building the capacity of women to empower themselves, gain requisite knowledge and skills that are relevant for group decision-making, and improve the promotion of gender-responsive policies and collective actions. The authors see a geradual shift in women's participation in policies within the agriculture sector on the continent given their participation in social learning processes.

Engaging both men and women in social learning processes has the tendency to increase access to resources and the uptake of innovations and technologies. According to Phiri et al. (2022), across many sub-Saharan African countries such as Ghana, Tanzania, and Nigeria, inclusive participation of women in policies/programmes formulation and implementation immensely contributed to scaling up technological adoption for biodiversity, conservation agriculture, forest and other natural resources management. For instance, the authors note that in Tanzania, climate change mitigation processes

involving both men and women have improved agroforestry practices and minimized land degradation. Similarly, in Ghana, women have resorted to the adoption of jatropha as alternative cooking energy, thereby minimizing environmental pollution and land degradation through a reduction in the demand for fuelwood. Also, in Northern Nigeria, women have developed preference for biofuel from the stalk of maize and other crops rather than fuelwood, enabling them to tackle climate change and deforestation. According to Shaw & Kristjanson (2014), less knowledgeable participants in multistakeholder social learning contexts tend to increase their knowledge with an increase in their participation, which positions them to take up innovations and technologies.

Another important outcome from collective learning process is the improvement in relations and trust (Prutzer et al., 2021). While recognizing the role of extension in engendering relations and participation in collective decision-making processes, Farnworth & Colverson (2015) argue that strong partnership between men and women enhances equality in gender relations. A central element of social learning is building relational capacities facilitated by trust among groups (Lamboll et al., 2021; McNaught et al., 2024). Multiple approaches have been adopted to build trust in social learning. As evidenced by Restrepo et al. (2018), collaborative learning processes among women dairy farmers that combined farm visits, farmers' experimentations and working between and within subgroups built trust and strengthened relations among the participants. Also, reflective and reflexive communication (open communication) promotes trust in collaborative learning (Lindley, 2015; Prutzer et al., 2021).

Gender-focused social learning at the community level also offers benefits that go beyond the participants of the learning process (Restrepo et al., 2018). Deering (2019) note that women's participation in collective decision-making at the community level improves their communication, and negotiation skills, which allow them to participate effectively as stakeholders in community decision-making. In Cape Verde, Mali, Niger, and Sudan, participatory social learning approaches that engaged both men and women helped significantly in reframing existing norms and values while enabling communities to address challenges such as climate change, food insecurity, biodiversity, and poverty.

5 A framework for strengthening gendered social learning for scaling innovations in agriculture and land management research and implementation projects

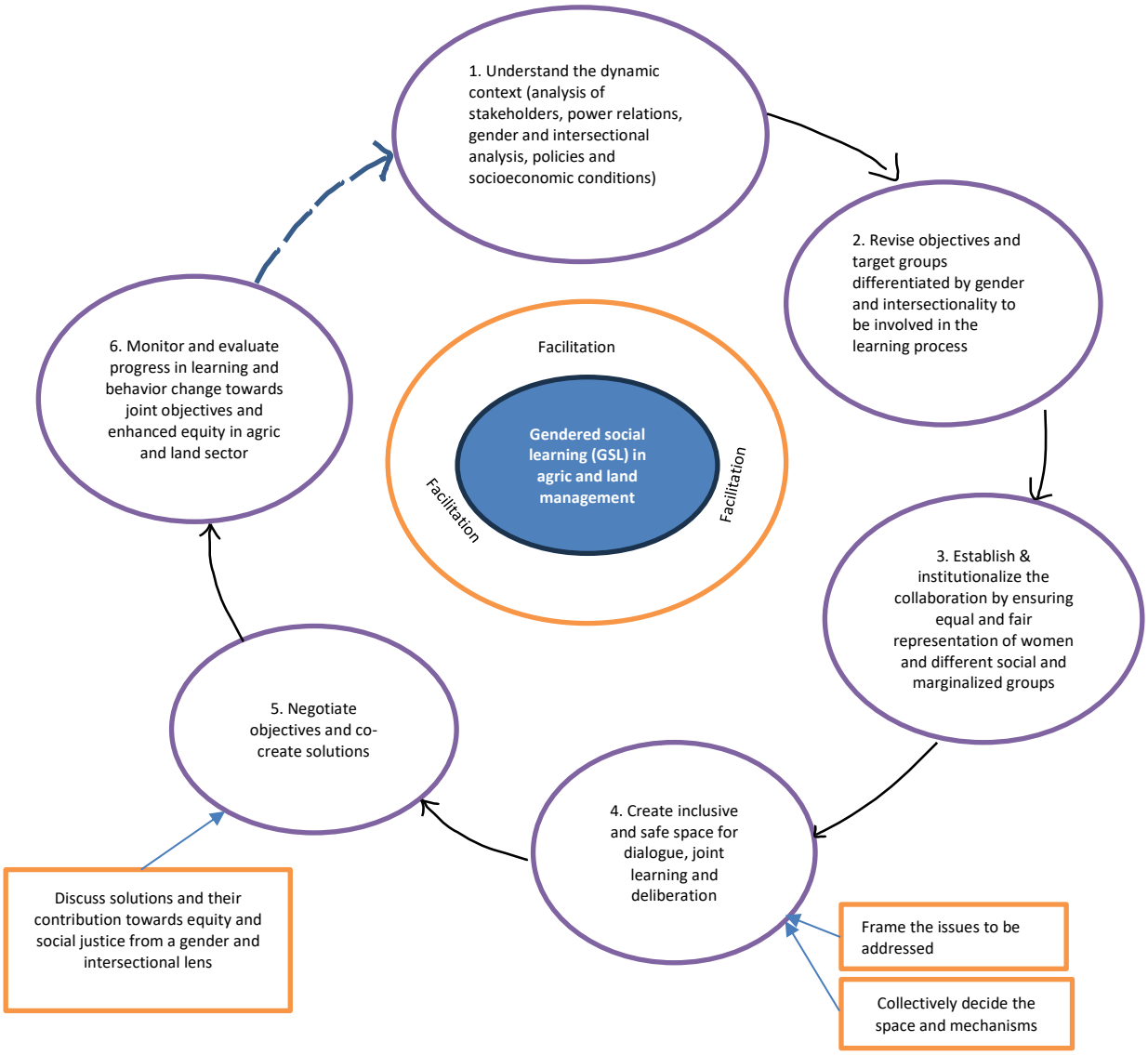
The framework proposed by Restrepo et al. (2014) has been used in transdisciplinary agriculture research for development and implementation projects that involve collaborative learning (see Lelea et al., 2014; Restrepo et al., 2016, 2018). The framework provides a methodological approach to applying collaborative learning processes in research projects. It comprises of four interconnected phases – establishing the collaboration, dialogue process, discovery process, and applying the new knowledge emerging from the collaborative learning process. However, the framework does not focus on how to integrate gender in the collaborative learning processes. This concurs with Egunyu & Reed's (2015) observation regarding the exclusion of gender in many social learning discourses. Christinck & Kaufmann (2017) also discuss approaches for fostering change through collaborative learning but with little attention to gender. Nevertheless, many perspectives for integrating gender in research and development projects exist (Blum et al., 2023; Caswell & Jang, 2024; Johnson et al., 2004; Lopez et al., 2023; McGuire, Leeuwis, et al., 2024), although not specifically for collaborative learning processes.

Based on the extensive discussions in the preceding sections, we argue that social learning processes that perpetuate biased knowledge production systems with a focus on homogenous actors (i.e., educated, empowered and dominant in policy and traditional domains etc.) without enabling vulnerable and disadvantaged groups, such as aged poor women, youth, herders, persons with disability etc. to participate in the process are likely to reinforce systemic inequality. Hence, we propose a framework (see Figure 1) that can guide researchers, project developers, development agencies and other stakeholders to reflect on how to effectively integrate gender in social learning. While we acknowledge that our proposed framework is inexhaustive, we believe that it can serve as an important starting point for researchers and projects that seek to make substantial contribution to tackling complex challenges in vulnerable communities in a participatory manner that addresses gender issues. Our framework is iterative and requires a continuous adaptation to local contexts. Both the project team and stakeholder play key roles in drive the implementation of the framework.

5.1 Understand the dynamic context

Given the complexity of how agricultural and land management problems differently affect individuals with differentiated capacities, it is highly critical for gendered social learning processes to thoroughly demonstrate a deep understanding of the contexts. The extant literature mostly serves as the entry point to understanding the context of a study setting. In addition, existing policies, legal frameworks and action plans at national and regional levels broadly and specifically for the study context can further help to understand the context. Important also are site visits that include, if working with communities, participatory rural appraisals (Chambers, 1994). A gender and intersectional analysis (exploring how social, economic and cultural attributes intersect with gender to determing the extent of vulnerability of an individual) in relation to the topic is in all cases of utmost importance. Understanding the context enables researchers and project developers to gain insights into challenges and constraints, vulnerability, needs and priorities of different gender groups, and the associated sociocultural norms and values, that suppress and/or promote participation of different gender groups in collective decision-making.

Figure 1: Iterative process for integrating gender in social learning



Source: Authors' constr uction, 2024

Stakeholder identification and analysis is a crucial component in understanding the context, enabling us to gain deeper insights into the interests and power base of each stakeholder and the power relations between them (Lelea et al., 2014). Diverse approaches and attributes are used for stakeholder analysis (Freeman & Reed, 1983; Schwilch, Bachmann, & de Graaff, 2012; Schwilch, Bachmann, Valente, et al., 2012). Commonly used attributes for stakeholder analysis include interest, influence (power), relevance and attitude (Luu et al., 2024; Reed et al., 2009; Smith, 2020) while other scholars also use urgency, power, proximity and legitimacy (Pelyukh et al., 2021). Stakeholders' power constitutes both their knowledge and authoritative power (Kadlec & Friedman, 2007; Rahnema, 1992). Stakeholders such as government, private sector, financial institutions, research and academic institutions, traditional authorities, farmer-based organization, producer association, input dealers' associations, civil society organizations, gender experts and gender-based groups etc. have stakes in agricultural innovations for development. However, vulnerable groups such as herders, women, persons with disability etc. disappear in such categories of stakeholders particularly for national level projects because they are often considered passive participants in mainstream policies and decision-

making even though many existing strategies and policies and research and development projects claim to target and benefit the vulnerable and marginalized groups. For agricultural innovations, the exclusion of the vulnerable whose livelihoods depend largely on agriculture, poses a big challenge to innovation uptake. Consequently, the initial scoping study is to assist researchers and development agents to understand the asymmetry of power and inequality in decision-making and how they determine the roles (not) played by the different categories of stakeholders.

Gender and intersectional analysis involve a rigorous exploration of relevant dimensions of diversity and intersectionality in the project communities with respect to the key agricultural and land management challenges and potential solutions. It is essential that relevant diversities are extensively explored to capture the characteristics of the population. Diversity such as age, gender, educational level, marriage status, geographic location, religious affiliation, political affiliation, household head gender, size of the family, proximity and access to essential resources and infrastructure, land tenure systems, migrant status, poverty or economic status, ethnicity etc. may influence how different members of the project community will access and use the innovation. Another important criterion for understanding the context is the identification of risks and how they are differentiated and reinforced by gender and intersecting factors. Intersecting factors such as age, education, economic status, ethnicity, locality (rural and urban), cultural norms and values perpetually reinforce marginalization and vulnerabilities. Understanding the different experiences and contexts of different gender groups and their intersecting factors is important for identifying who to engage in gendered social learning processes. Most importantly, such a process gives a better position of who and what to target in addressing systemic inequalities and vulnerabilities. It is highly recommended to also engage local experts to integrate their lived experiences and perspectives in understanding the context. Such experts have firsthand information on context-specific power relations, gender roles, responsibilities and opportunities available to different gender groups, existing vulnerabilities, and the unique positions of different groups and localities which require inclusion in the gendered participatory learning process.

5.2 Revise objectives and target groups differentiated by gender and intersectionality

Having understood the context and stakeholders, the next step is to revise objectives, strategy and target groups differentiated by gender and intersectionality to be involved in the learning process. This is done by the project team in collaboration with the stakeholders. Based on the results of the conducted stakeholder, power and gender analysis, the objectives for social learning should be revisited and adapted to better account for equity and social inclusion issues. The target groups need to be further revised and discussed where to prioritize on, with particular emphasis on intersectionality. This offers the opportunity to include different categories of individuals within and across gender. When including a gender perspective, it is key to not only focus on women alone but also include men and their roles as well. The strategy of stakeholder involvement, e.g. which stakeholders to work with at which level using which approaches, should be reflected upon to not repeat prevailing power imbalances during the social learning processes. It should be also discussed how gender-responsive or gender-transformative approaches can be included in the process.

5.3 Establish and institutionalize the collaboration

Establishing (Restrepo et al., 2014) and institutionalizing (Lotz-Sisitka & Burt, 2006) the collaboration for social learning is highly important. As noted by Lotz-Sisitka & Burt (2006) institutionalizing the collaboration enhances legitimacy, increases participants' commitment towards addressing a common problem and improves both the social learning process and the outcome. At this stage, the research or project team make official contacts with the relevant and identified stakeholders with a specific

focus on ensuring equal representation of the different stakeholder groups, disaggregated by gender as well. It is important to ensure sufficient presence of women who are knowledgeable of the topics to be addressed and representatives of marginalized groups (at least 30% of women). It is highly recommended to have additional gender experts who work in the agricultural and land management sector on board. One important aspect for establishing and institutionalizing the collaboration is introducing the project by providing in-depth and detailed information about the project and its objectives through invitations and online/in-person discussions to enable stakeholders to make an informed decision. At this point, the roles and responsibilities expected of each stakeholder are clearly discussed and negotiated (Restrepo et al., 2018). Also, the approach to engaging diverse stakeholders (e.g., workshop, farmer experimentation, farmer field schools, community fora etc.) is collaboratively established although this can be adapted to a particular context over time. Equally important is the need to discuss with the stakeholders which other actors have been excluded and should be included in the collaboration.

5.4 Create an inclusive and safe space for dialogue and discovery

Social learning does provide stakeholders a common and democratic space for an effective engagement. Multiple tasks and activities go into the creation of an inclusive space for dialogue and discovery in collaborative learning processes as elaborated in the subsections below.

5.4.1 Collectively decide space and mechanisms for social learning

For the purpose of effective engagement in social learning, physical space is preferred. This resonates with the fact that physical space provides the opportunity for marginalized people to effectively and actively participate in the process. Also, the constrained online presence and mobility of vulnerable groups, especially in the agriculture and land management sector, and their limited access to smart phones, internet etc. make physical space important. The essence of the GSL space is to provide an avenue for the critical articulation of a variety of voices, learn from their experiences and reflect on how projects can effectively contribute towards their advancement. It equally offers the opportunity to explore trade-offs, synergies and associated opportunities to ensure that collective decisions are context-specific and meet the needs and priorities of different stakeholders including women and marginalized groups (Beuchelt & Badstue, 2013; McGuire, Al-Zu'bi, et al., 2024).

Commonly used spaces for social learning include workshops, community fora, community visits, farmer field schools, farmer experiments, among others. A combination of spaces is highly recommended to adapt to the context of stakeholders and must be convenient to women and other marginalized groups. While research and project teams contribute to the decision on which space(s) is appropriate for stakeholder engagement, it is always important to discuss and engage stakeholders in decisions related to a social learning space. This enhances the co-creation and co-production aspects of collaborative learning. The space for dialogue and deliberation must be safe, accessible and convenient to every stakeholder, especially women and other members of vulnerable groups. The focus on women when making decisions on social learning space is important as they are often hindered and intimidated in many traditional/community decision-making spaces. It is therefore important to ensure that the views of vulnerable groups among the participants are collected and incorporated in the decision-making. In addition, the frequency of exploring the space (e.g., bi-weekly, monthly, annually, twice or thrice a year etc.) must also be discussed and agreed upon with all participants. This is important as sporadic engagement without prior (well-informed in advance) notice to stakeholders affects their interests and participation in the learning process.

5.4.2 Frame the issues to be discussed

Framing the issues to be addressed involves garnering in-depth and better understanding of the key agricultural and land management challenges that exist among the stakeholders and within the communities of interest (Lamboll et al., 2021). This helps also to identify the differences in differentiated capacities and resources among members of the community to respond to the problems (Fisher & Carr, 2015). The key agricultural and land management challenges should be framed from multiple perspectives including individual (personal), community, gender, marginalized groups' experiences and insights as well as institutional settings, challenges and constraints.

By doing so, the stakeholders gain a firsthand experience and information on the extent of vulnerability and capacities of each other. The framing of the key challenge(s) also contributes to the discovery process as other members of the collaborative learning process learn, sometimes for the first time, how a single problem manifests in diverse dimensions among different members of the society (Restrepo et al., 2018). This new insight contributes essentially to addressing the problem from different perspectives including gender and other social groups.

5.5 Negotiate objectives and co-create solutions

The next step involves the negotiation of social learning objectives and the co-creation of solutions with the stakeholders. This involves exploring what measures and strategies are feasible within the contexts of the stakeholders and the project communities to address the key challenges identified in the previous step. Arriving at a particular solution requires exploring broadly what works best given the social learning participants' conditions and experiences, what are the stories related to the success and failure of past (related) innovations or solutions and how differently should the new innovation be implemented. It is important to address these questions from the unique position of women, men, youth, and other marginalized groups given their differences in resources, capacities and vulnerabilities (CGIAR, 2024). Gender is always cross-cutting as in Africa's agriculture and land management systems, women are always involved and affected by changes. As stated in the previous section, working in subgroups may be a good entry point as it enables homogeneous groups to create solutions that work for their specific context.

It is important to discuss solutions and their contribution towards equity and social justice from a gender and intersectional lens. Solutions, for example, to innovations in agricultural and land management practices, should be explored for their potential to be adopted by the diverse stakeholders and strategies that tackle for the different needs, resource availabilities and priorities should be assessed. Also possible trade-offs within households and across the communities should be discussed within the communities (Beuchelt & Badstue, 2013). As McGuire, Leeuwis, et al. (2024:9) point out, discussion should also "*explore whether an innovation is likely to increase labor burden for different groups of people, or whether it could shift the balance of intra-household decision making power and access to resources. By thinking through the innovation's impact within a larger community, users and non-users of the innovation are considered*." Identifying specific groups that are likely to be negatively affected by the innovation due to their diversity and intersectionality status is important. Such groups may be harmed if specific interventions and measures that compensate negative effects are not implemented for them (McGuire, Leeuwis, et al., 2024) which is against the imperative to "do no harm" in research (Nischalke et al., 2018).

The discussion with the collaborative learning participants should center on the specific interventions that can be implemented to change or improve the status of women, youth and other vulnerable and at-risk groups, thereby enabling them to access and use the innovation and derive the associated benefits. The identification of specific activities or interventions for the at-risk and vulnerable groups should lead to the development of gender responsive collective actions. These activities could include developing complementary packages as part of the solutions, increasing knowledge and skills of the

vulnerable groups through training and capacity development, establishing partnerships to improve access to resources among the groups, creating business models or market links for the vulnerable groups (McGuire, Leeuwis, et al., 2024). Such integration is to ensure that collectively developed actions or innovations are effectively implemented to promote equity, justice and fairness between and among stakeholders and project communities.

5.6 Monitor and evaluate impacts to improve knowledge and the GSL processes

GSL is an iterative process that requires continuous revision and modification to ensure that it is fit-for-purpose and context. This is largely achieved through joint monitoring and evaluation by all involved stakeholders during and after the leanring process, driven by the project team with the stakeholders. Evaluation should be based on participants' views and experiences regarding the immediate impact of the GSL process itself. Here, the emphasis is on whether their participation in the GSL has contributed in any way to their capacity (knowledge, communication and networking skills, conflict resolution, collective decision etc.) and how that contributes to addressing the problems in their contexts or serves as the basis for implementing specific actions (Restrepo et al., 2018). Because some impacts may occur in the medium to long term, it is usually challenging for projects to evaluate long term impacts given their short lifespan. Long term impacts promote robust transformation, leading to steady changes in systemic barriers and inequalities. The evaluation process should also explore trade-offs and positive and negative unintended outcomes. Similarly, the evaluation should discuss the GSL process itself and how it relates to participants past experiences in collective decision-making. Here, emphasis should be placed on how innovative the GSL process was, the challenges encountered and how the process can be improved for future collaborative learning. Multiple sources of information including the self-reported evaluation provided by the respondents and the researchers or project implementers' reflexive evaluation based on the organization and management (including facilitation) of the GSL space, are needed. Lessons learned from monitoring and evaluation is fed back and integrated into the current and next cycles of social learning by the project team. Dynamic changes in the socio-economic and natural environment, such as changes in national laws and policies, implementation of interventions by state and non-state actors or external shocks (e.g. drought) may directly or indirectly affect the GSL processes.

5.7 Challenges in applying the framework

Given the uncertainties that surround stakeholder engagement and project implementation, we outline some challenges that may be encourterd when using the framework.

1. Limited resources may affect how many times and the length to engage stakeholders. Given the iterative nature of the framework, we recommend that engaging stakeholder ones may affect the effectiveness of the stakeholder engament process. Continuous engagement, at least twice a year, is highly important, especially for medium to long term projects in resource constrained environment. However, for short duration projects, the duration and frequency of engagement (weekly, monthly, quarterly etc.) must be adjusted to the length of the project and the available resources.
2. It is difficult to get all relevant stakeholders on board, especially those in the vulnerable and marginalized groups. Achieving the proposed 30% minimium quota may also be problematic and does not mean that by all means the target must be met. However, even when there is limited

number for such groups, it is crucial that conscious efforts are made to ensure their issues are articulated and integrated into the learning process. Including gender experts and other local actors with the requisite capacity to participate as well as in-depth knowledge of the context can help to align the learning process to the context of vulnerable and marginalized groups.

3. The context of the participants may serve as a barrier to effective engagement. It is therefore crucial that the choice of a facilitator for the learning process is based on the context of the participants. Where language and culture are likely to be key issues, an insider facilitator selected from the community or someone with in-depth knowledge of the community is preferred. This is important for projects in local and rural communities. Nevertheless, a project team member (outsider) can also facilitate the process when language and culture do not play immense role in stakeholders' participation, especially at the national and regional level.
4. Another possible challenge is how to sustain stakeholder engagement. Stakeholders' participation in the learning process is likely to diminish if they see no motivation and interest in continuous engagement. Key approaches to addressing this include allowing stakeholders to collectively select one among themselves to drive or facilitate the discuss at a particular time, getting feedback from stakeholder on which issues are relevant to be discussed in subsequent meetings, funding the stakelholders, particular at the local level, to self-organize an event to integrate the learning platform into existing structures and platforms e.g., CSOs, and share their experience of engaging in the learning process.

6 Conclusion

Social learning is an essential vehicle for addressing gendered and intersectional problems in the agricultural and land sector, and promoting sustainable development. It offers the opportunity for stakeholders, from all relevant groups and differentiated by gender, to co-design and effectively contribute to the collective development of context-specific and fit-for-purpose solutions. It also offers an opportunity to gain requisite knowledge, skills and experiences of the various stakeholders, thereby enhancing the capacities of vulnerable and marginalized groups to contribute towards addressing their context-specific challenges. The literature shows promising potential of social learning in addressing systemic inequality and marginalization that are pervasive in vulnerable and patriarchal societies, if gender is intentionally and consciously integrated in the learning process. Using a gendered social learning approach can contribute substantially to research and development projects in meeting the needs and interests of women and men alike who pertain to diverse interest groups. Incorporating gendered social learning approaches can reform how research and development projects are developed and implemented to maximize their impacts and contribute to gender and social justice. Similarly, government and policymakers can enhance the effectiveness and equity of targeted interventions in marginalized and vulnerable population and communities through a gendered social learning.

Achieving the benefits of gendered social learning requires the conscious consideration and integration of diverse knowledge sources, actors, and social groups, including women, youth, herders etc. in the collective development of solutions. As there was no existing framework on how to integrate gender in the social learning processes for addressing agriculture and land management challenges, we present a framework that offers a pragmatic approach to integrating gender and intersectionality in collaborative learning in different contexts. The framework contributes to the implementation and scaling of solutions that are gender-responsive to the needs and priorities of different social groups. While our framework contributes to the body of knowledge on social learning from a gendered perspective, it provides a practical guide that can be applied by researchers, and project developers, to strengthen and engender social learning processes. Beyond this user group, the framework is also relevant to development practitioners, government and policymakers who seek to foster change and address pervasive inequalities. The possible challenges that may affect the application of the framework are outlined and alternative solutions are provided.

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