

# A Review of Gender Norms, Agency and the Adoption of Agricultural Innovations



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## **Abstract**

Gender norms may enable or inhibit the adoption of various innovations. Women are often constrained by norms but they may also be able to use norms to serve their interests. In order to ensure that innovations benefit both women and men, it is important to understand what norms exist in a particular context and why and how they function. Our findings indicate that in addition to paying attention to the variety of norms in a specific geographical or cultural setting, we must think beyond just economic gains for women to ensure that new innovations can be adopted equitably by women.

Keywords: gender, social norms, agency, poverty alleviation, gender analysis, agricultural innovations

## **Introduction**

The purpose of this literature review is to study the role played by gendered social norms in the adoption of agricultural innovations in deserts and dry areas. Additionally, we offer insights into how new agricultural innovations may be adopted, how social change might be enacted, and how to avoid unintended consequences when encouraging the adoption of innovations by women farmers. Understanding norms is vitally important, not only to encourage the adoption of appropriate and beneficial agricultural innovations, but to avoid increasing the burden of work placed upon women and thereby possibly exacerbating their poverty and eroding their decision-making power and wellbeing (Baruah, 2005; Bezner Kerr, 2012; Bezner Kerr, 2008; Doss, 2001). A nuanced understanding of social norms also allows for a critical look at gendered power relations where paying attention to agency becomes a way to recognize the ways that harmful norms can be subtly challenged or provide avenues for marginalized people to act (Boudet, Petesch, Turk & Thumala, 2013). These considerations are especially important in light of a nascent focus on gender transformative approaches in research for agricultural development which does not stop at identifying gender inequalities but

focuses on changing the underlying social norms that produce those inequalities (Njuki, Parkins & Kaler, 2016).

This article will review and discuss scholarly contributions to the study of gender, social norms and agency in order to understand how gendered social norms might affect women's ability to adopt innovations in deserts or dry areas. It is concerned with social norms and agency and how they influence the adoption and adaptation of agricultural innovations. It is important to consider agricultural innovations and their intersections with gender in desert and dryland areas because about two-thirds of the world's population lives in dry areas which are increasingly more vulnerable to climate change (Strategies for Combating Climate Change in Drylands Agriculture, 2012). Furthermore, the adoption of innovations as a social process will be deeply impacted by gender norms (Beuchelt, 2016). The body of specific scholarly or practitioner literature on this topic from deserts or dry areas is quite small and as such, our review of the literature is necessarily broad in its geographic scope. Literature was selected based on relevance to the topics of norms, gender, and adoption of agricultural innovations in deserts and dry areas. The other major selection criterion in place was an attempt to keep the literature review current and required that literature be no more than ten years old at the time of writing this review. Some exceptions were made due to the source being foundational to the concept being discussed, or for very widely cited sources. This essay begins with a discussion of the importance of social norms, especially as they relate to gender, which provides a theoretical background on norms and their function. This is expanded on with a discussion of the relationships between laws and norms. Norms are then contextualized through an engagement with the ways in which gender can influence the adoption of innovations. Finally, agency is explored and complicated in relation to the adoption of agricultural innovations.

## **What are Norms and Why Gender Norms Should Be Considered**

Norms are important to consider with studies related to agency, adoption and adaptation of agricultural innovations. Norms regulate behaviours and influence decisions, they can provide comfort and a space of belonging, and as such, people are attached to norms in multiple ways, not just through fears of social rejection (Unnithan, 2010). Not only do they shape our social world, it has been argued that norms influence our identities (Hogg & Reid, 2006). This is important because norms inform the social context people exist in and the ways in which individuals maintain their sense of self. As such, people tend to internalize group norms to the extent that group norms shape their perceptions and attitudes (Boudet et al, 2013; Hogg & Reid, 2006).

Since agricultural innovations are practiced within the social contexts of various geographical locations, norms have a profound impact on whether useful innovations are adopted. Considering that the adoption of innovations can ensure the greater security of a food supply, as well as improved livelihoods for farmers, paying attention to whom is actually able to adopt innovations is vital (Ndiritu, Kassie & Shiferaw, 2014). Furthermore, there is evidence that gender norms are some of the most impactful, in terms of impact on being able to successfully learn about and adopt innovations (Smale, Heisey & Leathers, 1995; Doss, 2001; Ragasa, Berhane, Tadesse & Taffesse, 2013). As such, accounting for gender norms in the discussion of the adoption of agricultural innovations is essential.

Norms are highly relevant to nearly every study in the social sciences; however, many articles we read for this review noted that one shortcoming of the widespread use of the concept of norms is that its definition is both unwieldy and inadequate. Cialdini, Kallgren, and Reno call for more congruence in the definition of norms (Cialdini, Kallgren & Reno, 1991). They posit that there are different types of norms: descriptive

(what people think most people do) and injunctive (the things people actually do) as well as approval or disapproval of certain behaviours (Cialdini, Kallgren & Reno, 1991). This idea has been taken up by many other scholars to frame the ways in which norms are processed by individuals and to understand the complex interactions through which norms are established. For example, Rimal and Real propose a theory of normative social behaviour and suggest that injunctive norms are important because they may encourage behaviours that are incongruent with descriptive norms (Rimal & Real, 2005). This means that the approval or disapproval of important figures in peoples' lives may influence whether or not someone adopts a widely practiced but potentially harmful behaviour or adopts a less practiced but potentially more beneficial one (Rimal & Real, 2005). This theory, if applied to the adoption of innovations suggests that motivation to change based on norms is most effective when aimed at people who identify strongly with a group which adopts an innovation, or if a person with influence adopts an innovation.

In recognizing the importance of norms for shaping human behaviour, Knight, Lapinski & Rimal discuss the ability of individuals to act outside of norms because this has often brought about powerful changes (Knight, Lapinski & Rimal, 2005). Acting outside of norms indicates that a particular norm is incongruent with some individuals' values, which can cause the norm to be questioned. Rimal and Real conclude that communication is central to people acting outside of norms (Rimal & Real, 2005). Communication may explain part of how norms function; the way a person communicates plays a role in how they perceive norms. Communication is more influential coming from a fellow group member, but strangers and acquaintances can also communicate norms to people outside their group, meaning that both forms of communication can influence behaviour or perceptions of whether a behaviour is

prevalent (i.e. a norm) or not. Hogg and Reid argue that groups generate context-specific common behaviours, meaning that norms are often group or identity-based; how norms are communicated is also regulated by group norms such as who is typically allowed to speak to whom, which is often gendered (Hogg & Reid, 2006). The social identity perspective is the argument that people, at least in part, derive their sense of self from their social groups (Hogg & Reid, 2006). While diversity and oppositional viewpoints exist in groups, people's views and outlooks tend to be deeply rooted in group norms. Differing viewpoints in groups are often marginalized, as they can cause schisms for the group; however, schisms can also contribute to innovation and a willingness to change.

Imposing rules onto those who are in subordinate positions may shift behaviour in certain circumstances but not change norms. Burks and Krupka found that dominant and subordinate groups are aware of the other's viewpoints, and differences in norms are likely due to loyalty with their peers, and their hierarchical position where both groups do not always benefit equally from the same behaviour (Burks & Krupka, 2012). Those in positions of authority may impose certain behavioural standards onto the group(s) lower in the hierarchy, but it does not mean that they will become norms. The implications of this finding is that those in positions of power – including, for example, development workers and agricultural extension agents – may not have the ability to construct or influence norms directly. In their expansive review of a broad selection of literature from across the social sciences, Pearse and Connell examine how the concept of gender norms functions in order to understand the relationship between gender norms and economics (Pearse & Connel, 2016). They found that the common argument that gender norms always constrain women is only part of what gender norms can do, they can also create the context for people to act. Gender norms are not monolithic; rather,



there are significant variations in how people understand, respond to, and transmit gender norms both between social groups and within them (Pearse & Connel, 2016). Norms are not simply rigid rules that people comply with for fear of social sanctions. People may feel pressured by norms and shape their behaviours in response to norms, but this behaviour does not signify values, which do not necessarily predict or correlate to behaviour (Sunstein, 1996).

Mackie et al. focus on the role of social motivators in the continuation of practices that can be harmful and the adoption of new practices that can be beneficial norms (Mackie, Moneti, Shakya & Denny, 2015). They found that attitudes - for example what an individual says about something - are often measured by either qualitative and quantitative means by social research, while social expectations - for example, ideas about what people should do, what people think others are doing and what outcomes are expected for particular behaviours - are almost never measured. While social motivators are not the only factor that contributes to the persistence or adoption of practices, they are often overlooked or deemed inconsequential in the practice of development. This is an unfortunate oversight, as many practices that are social cannot be changed through interventions that focus on changing the behaviours and attitudes of individuals alone (Mackie et al., 2015). There are very few methods for measuring social change to begin with and none discuss expectations of group members for each other. Measuring behaviours is not sufficient to enable us to understand if what is observed is a norm, or if a norm is in the process of changing; these must be measured over time (Mackie et al., 2015).

Hapke stresses a theoretical approach to understanding gender norms that is threefold: which contains a gender analysis in the broad context (socio-economic, political and cultural), is multi-scalar and historical, and draws on material and cultural

information to assess how patriarchal structures are dialectically connected (Hapke, 2013). Two key findings suggest prioritizing the assessment of social status hierarchies, how these intersect and evolve. Of additional importance is focusing on the patriarchal family in order to better understand norms, ideological configurations of gender and social transformation (Hapke, 2013). However, development is not a neutral process and its benefits are not evenly distributed between men and women (Beuchelt, 2016; Momsen, 2010). It has been argued that norms variously shape our social world as well as our most intimate ideas about who we are as individuals. Understanding how gender informs norms provides insights into the rates and ways in which innovations are adopted, this in turn has profound effects on the material conditions of the everyday lives of people who rely on agriculture in deserts and dry areas.

### **Regulating Innovation: Laws and Norms**

The relationship between laws and norms was also frequently mentioned in the literature, with laws being conceptualized as codified norms that have some potential to affect more informal norms, which might benefit marginalized people (Hayford, 2005; McAdams, 1997; Sunstein, 1996). There was also an important distinction made between individual versus institutional change and the adoption of innovations.

Development projects often focus on small changes to individual and family life, which may not lead to any meaningful shifts in the ways or underlying reasons that people make decisions (Baruah, 2005; Hapke, 2013; Knight Lapinski & Rimal, 2005; Mabsout & Stavern, 2010; O'Reilly, 2006; O'Reilly, 2010). For instance, Mabsout & Stavern note that women's ownership of household resources does not equate to their control of those resources (Mabsout & Stavern, 2010).

Information is crucial to maintaining or changing norms, which is where the law can be used to restrict or communicate information that is crucial to maintaining or

dismantling norms. McAdams suggests that norms can be quite malleable under the right circumstances, where new information or the unreasonable costs of maintaining a norm may converge to change a norm rather quickly (McAdams, 1997). Sunstein also takes up the relationship between laws and norms and problematizes the notion of the autonomous rational person, because for Sunstein, human behaviour stems from norms (Sunstein, 1996). Similar to McAdams, Sunstein argues that norms can be influenced and changed more quickly through laws (McAdams, 1997; Sunstein, 1996). He writes that governments should have the ability to regulate norms since changes to norms can lead to greater social well-being, through passing laws that encourage behaviours which ensure that societal, rather than simply individual needs are met.

Often, a refusal to adopt an innovation is justified by personal preference, but if personal preferences are understood to be shaped by norms and not as solid or inexplicable as we think they are, then paying attention to what norms need to change for an innovation to be adopted may be an effective way to shift personal preferences (Sunstein, 1996). In contrast, Hayford argues that people are deeply attached to norms through social relationships and that laws are not always effective at changing norms (Hayford, 2005). She found that changes to behaviour most correlated to the decision of other people to adopt the change or not, meaning that norms, or shifts in norms, have more of an effect at the community level than individual factors such as income or education. This is consistent with the arguments put forward by Rimal and Real which states that people who are important to specific individuals can influence how individuals respond to norms (Rimal & Real, 2005).

Norms regulate behaviour mostly through the idea of maintaining the esteem of others, which McAdams labels the esteem model (McAdams, 1997). Economic models often ignore norms because losing the approval of others may not have direct fiscal or

material costs; however, fear of losing the esteem of others does produce powerful norms (McAdams, 1997). The esteem model is able to account for conflicts between norms at different levels, how norms can arise without consensus, and how critique can sometimes rapidly shift norms because critique indicates that a norm is no longer held in esteem. It explains why some norms that do not necessarily have material benefits continue to exist; the fear of breaking norms is regulatory.

### **How Gender Norms Affect Adoption of Innovations**

Several themes arose in the literature on adoption of agricultural innovations, most predominantly that norms are powerful, complex and have multiple facets, which opens several avenues for change and adoption of innovations. Norms inform the very basis of how people make decisions and act, making them vitally important for understanding how innovations are adopted (Hogg & Reid, 2006). Gender in particular was shown to affect adoption rates of innovations and the ability to make decisions and participate in positive, negative and unexpected ways (Agarwal, 2001; Doss & Morris, 2001 & Ndiritu, Kassie & Shiferaw, 2014). For example, gendered domestic labour that often goes unpaid and unrecognized constrains women's ability to participate in resource management (Agarwal, 2001). Another example is in the paradox of high numbers of women involved in agricultural organizations that are simultaneously blocked from leadership roles, indicating that some gender norms around leadership have remained intact (Alidou & Niehof, 2013). Additionally, much research shows that gendered norms around access to land and resources affects the ability of women to adopt innovations (Beuchelt, 2016; Ndiritu et al., 2014; Smale, et al., 1995; Doss, 2001; Ragasa et al., 2013). The following section discusses various examples of innovation adoption in deserts and dryland areas. While most focus on agricultural innovations, a

few other innovations are discussed to highlight the ways in which gendered norms can affect the adoption of innovations.

Corneliussen's theory of technicity is a useful theoretical intervention here (Corneliussen, 2014). She is concerned that women and technology are often conceptualized as being of two separate realms, to the point that women often experience barriers to participating in technological fields. Technicity means that humans and gender cannot really be understood outside of technology, since technology shapes human contexts, and since technologies are inherently gendered (Corneliussen, 2014). Technicity can be extended to thinking through different agricultural innovations and technologies, in order to understand that they are already implicitly gendered in how they are designed, promoted and eventually adopted. Being cognizant of this may help to ensure that more women are able to adopt useful agricultural innovations. Some scholars have also noted how the conflation of technology with masculinity communicates strong gender norms resulting in men being almost exclusively able to adopt new technologies and innovations, particularly related to mechanization and irrigation (Brandth & Haugen, 2000; Oldenziel, 1999; Zwarteveen, 2008).

In order to investigate the question of gender and the adoption of innovations, Ndiritu, Kassie and Shiferaw use empirical analysis to understand the uneven adoption between men and women of sustainable intensification practices in Kenya (Ndiritu et al., 2014). The fact that women adopt certain innovations at lower rates is significant and has implications for food security in the country since women take on a large proportion of agricultural work. Most innovations are adopted at lower rates by women. Women are constrained less by factors related to biological sex and more by factors such as weak land tenure and a lack of access to credit and knowledge, which are outcomes of gendered norms and which influence what innovations are accessible to

them (Ndiritu et al., 2014). Women's lives are also constrained by factors such as age and household size. Younger people may express greater openness to innovations and larger households often have more labor capabilities to put innovations into practice (Ndiritu et al., 2014). Smale et al. and Doss similarly note that women in parts of sub-Saharan Africa were unable to adopt improved seed varieties due to the fact that improved seed varieties are often more input-intensive and women suffer from a general lack of access to financial resources (Smale, Heisey & Leathers, 1995; Doss, 2001). Smale, Heisey and Leathers note how adoption of new maize varieties reflect societal gender roles of men and women (Smale et al., 1995). Women preferred a local maize variety for its easier pounding and storability while men preferred improved maize varieties for their higher yield when grown with fertilizer (Smale et al., 1995).

Ragasa, Berhane, Tadesse and Taffesse analysed if the adoption of innovations is gendered through studying access to extension services in Ethiopia, which are a variety of programs that are meant to bring the benefits of agricultural research to rural people (Ragasa, et al., 2013). Male farmers were more likely to be visited by extension agents, to report receiving advice that they found useful, and more likely to adopt innovations than women. They argue that adoption rates have more to do with the fact that male farmers found their visits with extension agents to be more useful, and that men tend to be wealthier and therefore better able to absorb risk than women (Ragasa et al., 2013).

It is important to know how gendered factors - such as the attitudes of male extension agents, and lack of access to information for women - affect adoption of agricultural innovations since this affects the overall ability of women to produce food. In this regard, Moore and Vaughan simultaneously advise caution by emphasizing that increased efficiency should not be the lone aim with agricultural innovation, other

priorities and needs must be considered in order to adequately meet food security goals (Moore & Vaughan, 1987). Using long-term historical analysis, they found that women's agricultural responsibilities during busy times contributed to exhaustion and a lack of time, which meant that other household duties, such as cooking could not be done. Bezner Kerr similarly describes how the adoption of improved seed varieties in South India and the Gambia, which were targeted at men, led to increased workloads for women, reduced their decision-making power and compromised the overall nutritional wellbeing of households (Bezner Kerr, 2008).

Development projects often have unintended consequences that disproportionately affect women, usually by increasing their workloads, as any new responsibilities that come with such projects do not replace but are added to the responsibilities women already had (Baruah, 2005; Moore & Vaughan, 1987; O'Reilly, 2006; O'Reilly, 2010; Torri, 2010). For example, increased access to water through a development project may not make women's lives easier if it means that women have to take on more responsibilities as their ability to farm increases with their access to water (Torri, 2010). Development projects are often implemented utilizing a technical-rational framework, while the people the project is aimed at often view and adapt development projects through their own norms and priorities (Baruah, 2005, McAdams, 1997; Pearse & Connel, 2016). One example is a water project aimed at increasing women's access to clean water that did not take into account class, caste, or gender roles, which meant that some women were wary of sharing the same water source that was used by people of all castes (O'Reilly, 2006). Innovations and improved technology are not enough to change deeply entrenched norms that can marginalize people.

While not directly related to agricultural innovations, the example of cooking fuel technologies and levels of adoption highlight the ways in which decision making,

and power at the household level are deeply gendered. Fuel collection adversely affects the health of women and their abilities to pursue other interests or responsibilities. Girls who are responsible for fuel collection may miss school or have to drop out (Laxmi, Parikh, Karmakar & Dabrase, 2003). Laxmi et al. and Baruah both note that a strong public sector is essential for instituting incentives and subsidies so that alternatives to wood-burning stoves can be adopted (Laxmi et al., 2003; Baruah, 2015). However, Baruah notes that changes in politics are not enough because gender plays a significant role in what improved technologies are adopted (Baruah, 2015). Since men are not generally responsible for cooking, they do not necessarily see the value of a stove that offsets or eliminates the use for wood since the wood collected by women is perceived to be 'free.' Men are much more likely to value access to solar powered lanterns rather than clean cook stoves because they experience the benefits of the former directly. Men also often have the final word in financial decisions (Baruah, 2015).

Biological differences based on sex are not the reason for differences in adoption rates between men and women, rather it is the differences in gender norms for men and women that shape if adoption is feasible or not for women (Ragassa et al., 2013). Doss and Morris investigate how gender affects adoption rates of two innovations - modern varieties of maize and chemical fertilizers - in Ghana (Doss & Morris, 2001). They emphasize that the adoption of agricultural innovations correlates with a more reliable food supply. If agricultural innovations are being adopted at lower rates by a particular group, understanding why can lead to making innovations more accessible or to developing innovations that could be more widely adopted by marginalized groups. Adoption or non-adoption of the agricultural technologies studied was not due to the farmer's sex, or even their gender roles directly. However, a lack of access to resources, such as land and labour - which is an outcome of gendered social



norms - appeared to be the primary reason for non-adoption (Doss & Morris, 2001). The authors suggest either policy changes that increase women's access to resources, or research into technologies that make use of the resources women already have, as possible future actions.

### **Gendered Norms, Agricultural Innovations and Decision Making:**

#### **Complicating Agency**

Gender norms and agency are linked, because ideas about gender influence norms, which affects agency. However, gender does not determine agency: it can only inform contexts, it does not decide how people respond. Agency is most often understood by feminists as the actions a person takes - however small - under constraints, and through which he or she asserts autonomy (Burke, 2012). However, a focus on autonomy and liberation in the literature on agency is not congruent with how some women exercise their agency by actively choosing to conform to more restrictive expectations within their group or culture because these expectations align with their own values (Burke, 2012). Writing about women's inability to inherit parental property in contemporary India despite constitutional guarantees to that effect, Baruah emphasizes that women's well-documented aversion to stake claims to natal property was less a consequence of their ignorance of the law or their inability to appreciate the economic benefits of property ownership but more an outcome of a profound desire to stay connected with and feel loved by their natal families (Baruah, 2010). Declining shares of parental property in favour of brothers similarly represents less a mindless subscription to traditional gender ideologies and more an intricate exercise of agency and negotiation of kinship that alienates women from natal property, but also ensures economic and emotional support from brothers in times of crisis. Like the findings of several others Baruah endorses the view that legal literacy and consciousness-raising initiatives that

raise awareness among women as well as men about the benefits of greater equity and address fears about undoing customary male privileges are as crucial as legislation, policy reforms and other state actions that protect women's interests and facilitate their agency (Agarwal, 1994; Baruah, 2010; Basu, 1999; Parasher, 1992). Viewed through this lens, agency becomes more complicated and some theoretical space is opened up for recognizing that agency does not always manifest itself through Western values of liberty and autonomy (Burke, 2012). Burke suggests that future scholarship should theorize the limits of agency, develop the concept of non-agency more fully, and understand that liberation and autonomy may not be the only markers of agency (Burke, 2012). Yet, it is equally important not to treat instances of extreme oppression as celebrations of women's agency.

In their study of women's perceptions of land ownership in the district of Kutch in Gujarat, India, Rajgor and Rajgor found an apparent contradiction between participants' agreement that no other asset but land could bring them the same sense of self-worth, security, or respect within the village and the women's reluctance to give land to their daughters (Rajgor & Rajgor, 2008). In part, this was due to pragmatic concerns about whether daughters who had moved away to marry could farm land they are given. However, it was also due to concerns that in transferring land to their daughters, mothers could place them at risk of reprisals from in-laws who do not share a commitment to transferring land to women. As with the findings from Baruah, women who hesitated to endow daughters with land may just be taking the practical step of working with patriarchy in some ways while subverting it in other, perhaps less-visible, ways (Baruah, 2010). Engaging with such choices will require us to be guided by a less narrowly defined sense of logic, idealism and agency.

While some scholars suggest that when women have greater access to ownership of resources, employment and credit, their role in decision-making is improved, others have found that these same factors may also place new burdens on women and open them up to other forms of exploitation. Boudet et al. show in their study of gender norms and gender equality in 20 countries in all world regions that women are only likely to challenge gender norms when also conforming to ideal expectations of a ‘good’ woman (Boudet et al., 2013). Similarly, Farnworth et al. argue in their assessment of successful approaches to empower women and transform gender relations that an enabling context to reduce gender inequalities entails minimum confrontation and conflict (Farnworth, Fones-Sundell, Nzioki, Shivutse & Davis, 2013). They also focus on the importance of collective agency for women to achieve change through self-help groups and cooperatives. Mabsout and Stavern state that most research on women’s bargaining power analyses only the individual and household level, which overlooks the significance and persistence of unequal gender norms in societal institutions beyond the household (Mabsout & Stavern, 2010). They argue that the societal level is so powerful that it may override any gains made by women at the individual and household level. In contexts where gender norms are highly unequal, women’s bargaining power is more likely to be improved through extra-familial institutional changes, although household level factors should not be trivialized or negated.

The general consensus in the literature on intensive cultivation through commercialized farming seems to be that it has increased the responsibilities of women. There might be enough food available, but women may have less time or energy to prepare it, or to attend to other household needs (Bezner Kerr, 2012). This suggests that increasing productivity cannot be the only goal for agricultural innovation, other

gendered labour responsibilities also have to be taken into account (Moore & Vaughan, 1987). The quality of women's participation in agriculture should also not be measured by numbers alone, as is evidenced in Alidou and Niehof's research on barriers to women's involvement in cotton production organizations in Benin. Women make up about half of the agricultural workforce in Benin and tasks are usually gender-specific (Alidou & Niehof, 2013). In addition to their agricultural roles traditionally being quite rigid, women have seldom been included in the administration and management of cotton organizations. Women's membership in cotton organizations may be increasing simply because such organizations are looking for additional members to boost numbers, or because male relatives sometimes sign up their female relatives to serve as proxies. It is often difficult for women to exert their agency because they are blocked from doing particular jobs and because they have very limited access to leadership roles in cotton organizations (Alidou & Niehof, 2013). The authors also point out that women's involvement in agriculture benefits men economically while also ensuring that women are generally fixed in non-leadership roles with very limited ability to enact change. Agarwal emphasizes that husbands and other family members may allow women to take on work that benefits the household economically but this does not necessarily lead to deep shifts in attitudes regarding women's status and rights (Agarwal, 2003). There may be less resistance to women taking part in income-generating activities because they are considered a 'win-win' for the family (Agarwal, 2003). While men may not challenge such activities at all, they are likely to be far more resistant to deeper economic and political demands from women - for leadership roles in organizations and independent land and property rights, for example - that challenge their traditional privileges and entitlement to resources. Given these observations, it is

important not to conflate the high numbers of women in in the agricultural sector with empowerment.

In a similar vein, Agarwal discusses people's participation in natural resource management using data collected in India and Nepal on Community Forest Groups (CFGs) (Agarwal, 2001). She argues that participation is influenced by norms, rules and perceptions, and these may play a role in disadvantaging women. Participatory exclusions based on gender are more universal than initially expected, as the gendering of particular kinds of work that often go unpaid and unrecognized leaves women unable or with less time and inclination to participate (Agarwal, 2001). Exclusions from CFG participation almost always occurred on the basis of norms and perceptions. A recommendation from this article is to reflect more deeply about the ability of marginalized groups, including women, to participate in institutions which are ostensibly for 'everyone.'

## **Conclusion**

Improving conditions and changing norms are not the same; involving women in projects which ostensibly improve one or more aspects of their living conditions does not guarantee that the social structures which result in women's subordinated positions will shift (Torri, 2010). Feminist scholars of development often note that technology cannot shift gender norms or improve the conditions of women on their own (O'Reilly, 2010). Women cannot be expected to bear all responsibility for social change when they still navigate the same social norms, albeit with improved technology. This means that for innovations to be fully adopted and useful for women, norms must be accounted for in meaningful ways. As Sunstein argued, changing norms has the potential to shift and improve social conditions (Sunstein, 1996). At the same time, attempts to shift norms

must be carefully thought through since women often bear the brunt of most modernization processes, often increasing their already heavy workloads while not actually creating meaningful change for them, which they see as necessary for improving the conditions of their lives (O'Reilly, 2010).

Social norms do inform how women and men make decisions and take action and this renders them critical for understanding how innovations may be adopted. Gendered social norms are not monolithic. The common assumption that gender norms always constrain women is only part of what they can do. Gendered social norms may also enable women and men to act in counter-intuitive ways. This article highlights how gender norms affect women's ability to adopt innovations. Understanding what norms exist in a particular context and why and how they function is a crucial first step towards understanding how agricultural innovations might be adopted by women and men. To ensure that women can adopt innovations equitably with men, we must employ strategies that produce not just better economic outcomes but also lead to elevations in women's social and political status within and beyond the household. Understanding women's choices and constraints may also require us to be guided by a less narrowly defined sense of logic, idealism and agency.

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