Unpacking Intra-Household Decision-Making on Smallholder Farms in Colombia and Nicaragua to Foster Climate Change Adaptation

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Introduction

Climate change is perhaps the most pressing challenge facing the global community and particularly developing countries. Already we are seeing the effects of climate change on agricultural production systems and food security. According to the FAO (2017), 26% of all climate-related losses reported in developing countries between 2005 and 2015 occurred in the agricultural sector (p. 8). Climate change resilience, defined as the degree of preparedness of countries to manage climate change, varies with the world poorest nations among the least prepared (ND-GAIN 2018). These nations are expected to experience much higher incidences of climate change vulnerability,[1] which further disproportionately affect individuals according to their social status, gender, economic level, and their ability to access and control resources (UNDP 2013).

Women in developing countries are in a particularly vulnerable situation. Climate change is not gender neutral (UNDP 2013). Women in the rural sector comprise a significant proportion of the agricultural workforce (43%) because of the deepening feminization of agriculture, and as a result of prevailing gender norms, they continue to face significant gender inequality with respect to access to productive resources and credit, knowledge, education, time poverty, and equitable pay (FAO 2011). These conditions will likely be exacerbated by climate change (Habtezion 2012), which is argued to have the potential to reinforce and reproduce unequal power relations (Gonda 2014). If gender equality and equity between the sexes does not increase, women will face a disproportionate burden when it comes to adapting to climate change, inevitably impacting their livelihoods and those of their children and families.

Building on the existing work on gender relations and climate change, this paper argues that we need gender-transformative approaches that seek to progress more concretely towards changing gendered power relations to foster gender equality to confront the dual challenges of climate change adaptation and gender inequality – both of which, as described above, are not mutually exclusive. Up until now, the dominant approaches to addressing gender in the context of climate change have been focused on gender-sensitive and gender-responsive approaches; however, while these approaches have helped to visibilize women and the unique needs of men and women in confronting climate change, they have dealt less with changing dominant patterns of gender relations, while they be between men and women or the masculine-feminine binary.

In this paper, we examine agricultural decision-making practices used by households to explore gender relations, further arguing that these can help us unpack the factors that influence and shape

[1] A common definition of climate change vulnerability is, "the degree to which geophysical, biological and socio-economic systems are susceptible to, and unable to cope with, adverse impacts of climate change" (IPCC 2007).

gender relations at the micro-level in local contexts. By focusing on agriculture, we can see how decisions regarding climate change adaptation may be handled by rural households and begin to understand what kinds of spaces currently exist for gender transformative approaches to decision-making and the potential for creating new spaces for debate and the adoption of practices to adapt to climate change. We begin with perceptions of decision-making as a starting point for analyzing household decision-making and gender relations. We then complement this was an analysis of agricultural decision-making in practice, emphasizing joint decision-making between spouses. There are two main questions that we seek to address: First, what do men and women's perceptions of decision-making and process of making agricultural decisions tell us about gender relations in households with male/female spouses? Second, what opportunities and obstacles exist for promoting gender transformative decision-making at the household level that could in turn create new spaces for debate and adoption of practices to adapt to climate change?

To answer these questions, we draw on qualitative empirical data collected from two sites in Latin America where Climate Smart Villages have been implemented by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).[2] Latin America is an important region for studying gender and climate change issues for several reasons. First, while broad efforts have been made throughout the region to strengthen gender equality, machismo and male and patriarchal gender norms are still very much socially entrenched. While the feminization of agriculture has been slower to take hold in the region than, for example, in Africa (FAO 2011), women face disproportionate access to agricultural resources (e.g., credit and land) and social barriers to their participation in the agricultural sector (Nobre and Hora 2017). These conditions are expected to deepen with climate change, which is already affecting the region and its impacts are expected to grow stronger in years to come.

While some countries in the region are ranked as having relatively high climate resiliency ratings, which indicate how prepared they are to manage climate change, the poorest nations in the region are among the least prepared (ND-GAIN 2018). Given that vulnerability to climate change disproportionately affects individuals according to their social status, gender, economic level, and their ability to access and control resources (UNDP 2013), we can expect the rural poor and especially rural women to be particularly susceptible to climate change effects in countries with lower climate resiliency ratings. This underscores the importance of climate change adaptation for these communities and households. A gender-transformative approach to decision-making about the adoption of climate-friendly practices has the potential of reducing vulnerability of women as a subordinate group by opening up spaces for considering both masculine and feminine visions of climate change impacts and adaptation practices when engaging in the decision-making process. However, to effectively promote such approaches, it is first necessary to understand current gender relations in the household and how these are reflected in decision-making processes and practices, as well as assess the potential for gender-transformative approaches by identifying opportunities and challenges.

Gender, Climate Change, and Decision-Making as a Locus of Transformation

Gender, largely focused on women's inequality vis-à-vis their male counterparts, made its way on to the global climate change agenda in 2001 at the 7th Conference of the Parties (COP) in Marrakech where parties agreed to improve the participation of women in decision-making related to climate change (UNFCCC 2018). In 2010, nearly 10 years later at the 16th COP in Cancun, for

[2] For more information about CCAFS' work and Climate Smart Villages, please see CCAFS (n/d).

the first time the parties recognized the need to design gendered approaches to climate change adaptation (WEDO and GGCA 2013). In the years that followed, efforts were made to continue to enhance the representation and participation of women in climate change decision-making in United Nations Framework Convention on Climate Change (UNFCCC) negotiations, as well as introduce gender-responsible climate change policy in and language that suggested that parties take gender equality and women's empowerment into account when designing and implementing actions to address climate change (UNFCCC 2018). Additionally, international organizations have published a number of documents and reports advocating gender-sensitive and gender-responsive approaches to climate change adaptation (see, for example, (Huyer, et al. 2015, Nelson and Huyer 2016, UNDP 2012, UNDP 2013, United Nations 2015).

While such advances towards visibilizing women in climate change and investigating the unique needs of men and women have been significant though gender-sensitive and gender-responsive climate change research and action, scholarship has been more limited on the bigger issue of the disparate power relations between men and women that serve to continue to reinforce and reproduce gender inequality. Gonda (2014) specifically argues that:

> There is insufficient understanding of how climate change and climate variability affect gender relations as well as how to address gender differences effectively with adaptation and mitigation measures. Furthermore, analysis of how gender inequalities influence different factors that could potentially increase climate vulnerability of certain groups in the population. (p. 6)

She further states that there are three reasons for this: 1) confusion between the words "woman" and "gender"; 2) NGOs working on climate change have been more interested in the material effects of climate change while NGOs and movements working on gender have paid little attention to integrating climate change into their work; and 3) climate change is often associated with masculine topics, terms, and discourses (like security, modernization, and technical solutions), thus overlooking a feminine vision of climate change. Moreover, Gonda (2014) observes that not considering gender relations, and rather focusing specifically on women, runs the risk of making women appear to be victims and a homogenous group (p. 7), rather than agents in the process of adapting to climate change.

Gonda's (2014) contributions are significant in several ways. First, she highlights how the climate change adaptation discourse up to this point has been largely dominated by men and masculine visions of climate change adaptation, that has not sufficiently taken women's views and knowledge into account. Such conditions can be attributed to the lack of space open to women in these discourses both in terms of numbers of women and their equitable participation in spaces of climate change decision-making and debate (Gonda, 2014). This has been an on-going concern since gender was introduced to climate change arena, as mentioned above. However, it has been mostly couched in the numerous calls for increasing women's participation and by extension empowerment in climate change decision-making and debate, rather than for fostering conditions that would lead to gender equality. This underscores the need for a gender transformative approach to climate change adaptation that seeks to foster more equitable gender relations, which would open up a larger space for women to engage and for their voices to be heard and seriously considered. This would thereby transform their characterization as vulnerable victims to that of powerful agents of change and potentially reduce their vulnerability to the effects of climate change by creating spaces for feminine discourses on climate change and adaptation to be heard and both engage and challenge the existing dominant masculine discourses on the subject. The

exclusion of women and feminine discourses runs the grave risk of denying these perspectives entrance to the broader table where debates are held and decisions are made about climate change. The inclusion of feminine views and voices holds the promise of reorienting the climate change discourse and interventions to be more responsive to the unique concerns of women and limit the exacerbation of existing gender inequality.

As mentioned above, decision-making has been a prominent issue in broader conversations around gender, climate change, and women's empowerment. Women's participation in decision-making is included as one of the central elements in indicators and indexes for women's empowerment (Alkire et al. 2012; Bishop and Bowman 2014; Hanmer and Klugman 2016; Phan 2015).[3] Furthermore, it was cited as a key factor to measure when gauging gender transformative change (Hillenbrand et al. 2015). Kabeer (1999) describes decision-making as the "observable" element of empowerment. While there are many different sites of decision-making and debate at micro and macro social levels, household decision-making processes are important because this is where gender relations are put to the test. With regard to climate-friendly practices, patterns in household decision-making can help us to understand relationships of power that might affect decisions to adopt such practices. They can reveal perceptions about decision-making, preferences, influence, and interactions among and between different household members. Finally, household decision-making processes are an important site for assessing changes in gender relations brought about by climate change and variability.

Scholarship on household decision-making by farm families has grown considerably in recent years parallel to a broader interest in understanding different factors that enhance women's empowerment. In particular, the research on perceptions of joint decision-making has become a prominent thread of inquiry. A number of studies have compared the perceptions of spouses about who makes decisions and have reached the common conclusion that there is a lack of agreement between them, with the most common pattern being that men reported making sole decisions about some activities for which women reported joint decision-making with her spouse (Alwang et al. 2016; Ambler et al. 2017; Jacobs and Kes 2015; Twyman et al. 2015a). Understanding men and women's perceptions of decision-making is one way to unpack the reasons for spousal discord about decision-making. However, while evidence from studies on household decision-making suggest that men and women do not have the same perceptions of decision-making (Abdulsalam-Saghir et al. 2015; Anderson et al. 2017; Dekkers 2009; Jacobs and Kes 2015; Patel et al. 2007; Weeratunge et al. 2016), there is limited existing knowledge about the kinds of perceptions that men and women do have, their roles in making decisions, and how this relates to bargaining power (Ambler et al. 2017). Taking this a step further, Anderson et al. (2016) suggested exploring not only perceptions, but also the relationship between perceptions and actual decision-making authority in order to understand the adoption of agricultural practices in development programs and projects, specifically those targeting women. In line with this, Dekkers (2009) discussed how there is a difference between perceived power and the actual power that a person has in the household.

While considerable research on spousal discord in joint household decision-making has been conducted, few studies have considered the relationship between joint decision-making and

[3] Kabeer (1999) defined empowerment as "the processes by which those who have been denied the ability to make choices acquire such an ability." Women's empowerment has been a development target for government and non-government institutions since the Fourth World Conference on Women held in Beijing in 1995 and is seen as a key element for achieving the fifth Sustainable Development Goal of Gender Equality.

women's empowerment, and more specifically the question of whether joint decision-making can be used to measure gender equality. However, Acosta (2017) recently conducted a mixed-methods study to explore this issue. Based on her findings, Acosta (2017) identified four categories that express the different ways in which joint decision-making is understood by women and men in an agricultural setting in Nwoya, Northern Uganda (see Table 1 below). Based on the categories, she found that spouses did not participate as equals in the process of making a decision, especially in joint decisions. Her study raised questions about whether joint decision-making should be promoted as part of gender transformative approaches, whether it is a sign of women's empowerment, and whether it should be promoted by NGOs as part of their gender strategy (and if not, what type of joint decision-making should be promoted in order to enhance women's empowerment).[4] Furthermore, her research underscores the utility of studying men and women's perceptions of joint decision-making for measuring decision-making and women's empowerment.

Table 1. Acosta's Patterns of Joint Decision-Making

Discussion about Decision	**Decision Decision-Making Process**
No conversation between the couple	Man "informs" about the decision to the woman, after the fact
	Man "informs" about the decision to the woman, before the fact
Conversation between the Couple	Man "informs" about the decision to the woman, before the fact. Woman's ideas not considered
	Woman´s ideas are considered, but man has the final say

Much of the literature on household decision-making and gender has emerged from studies carried out in Africa. While Demographic Health Surveys (Covre-Sussai, 2014; Ministerio de Salud y Protección Social y Profamilia, 2016) suggest that joint decision-making is very important in Latin America, the scholarship on men and women's perceptions and practice of household decision-making is quite limited (Covre-Sussai, 2014). The existing literature has mainly focused on the variables that affect women's decision-making, such as ownership of assets (Brauw et al., 2014; Chant, 2002; Wiig, 2013), gender norms (Bradshaw, 2013; Farah-Quijano, 2013; Ramirez et al., 2005; Tepichin, 2009), and characteristics of the couples and the communities (Carter, 2004). These diverse scenarios have led multiple authors to advocate the importance of doing contextualized analysis when addressing the process of household bargaining (Carter, 2004; Farah-Quijano, 2013).

In terms of women and men's perceptions of household decision-making and the degrees to which they converge or diverge, there is not much research for the Latin American region. The few existing studies suggest that the region generally follows the same patterns as have been noted elsewhere – there is a lack of spousal accord concerning household decisions with men typically reporting making decisions alone, while women report a higher level of joint decision-making and sometimes more individual female decisions (Casique, 2000; Covre-Sussai et al., 2014; Deere and

[4] Currently, women's empowerment indexes and indicators, which are based primarily on surveys, face the problem of how to classify responses concerning "joint decisions." For example, researchers face the question of whether joint decisions indicate more or less empowerment compared to sole decisions.

Twyman 2014; Twyman et al. 2015a, 2015b; Twyman et al. 2016a, 2016b). However, one study did indicate that when women's spouses were present during interviews, women were more likely to report that decisions are made jointly as opposed to made by women (Brauw et al. 2014).

Unpacking Household Agricultural Decision-Making in Climate Vulnerable Sites in Colombia and Nicaragua: Study Description and Methodology

As stated above, this paper draws on household decision-making data collected from families living in two CCAFS Climate Smart Villages – one in Cauca, Colombia, and the other in Tuma-La Dalia, Nicaragua. Both countries are critical sites of climate change and have been experiencing climate change variability, particularly Nicaragua. According to the Climate Risk Index, Nicaragua is ranked fourth of the ten countries most affected by extreme weather events in the 1996-2016 period (Eckstein, Künzel, and Schäfer 2018). The Notre Dame Global Adaptation Initiative Index (ND-GAIN), which measures climate vulnerability and resilience, ranks Colombia 77th and Nicaragua 115th (of 181 countries) in their most recent index that includes scores from 2016 (ND-GAIN 2018). As such, inquiry and investigation into climate change adaptation and resilience measures are important for both countries. Bearing this in mind, CCAFS designed the Climate Smart Village (CSV) initiative to be implemented in sites with high climate risk using participatory research methods with local communities to full extent possible to experiment with climate change adaptation practices (CCAFS n/d).

In 2014-2015, CCAFS conducted a Gender Survey in communities located in the CSV sites in Colombia and Nicaragua mentioned above. Among other topics, the gender survey collected data on household decision-making. Results from these surveys suggested that men report most agricultural decisions are primarily taken by men, while women report a higher level of women's participation through both joint decisions and individual female decisions (see Twyman et al. 2016a, 2016b). However, it was unclear what joint decision-making meant to men and women. Thus, an additional mixed-methods study was conceived with the idea of conducting follow up research and including a strong qualitative component to explore how agricultural decisions are made within households and, in particular, inquire about men and women's perceptions of decision-making and about the norms that influence decision-making processes.

The qualitative component of the mixed-methods study on household decision-making was particularly important given that most studies on household decision-making and spousal accord have relied on quantitative data collected from surveys, and surveys have been found to provide limited insights into subjective perceptions of men and women about decision-making, the micro-processes that comprise the decision-making process, and how factors like legitimacy and gender norms influence decision-making practices.[5] In response to the limitations of surveys for studying household decision-making, scholars have called for alternative means of studying such processes, including qualitative methods to capture subjective data (Alwang et al. 2017; Hillenbrand et al. 2015) and gender-inclusive approaches that overcome gender biases (Alwang et al. 2017).

[5] While surveys have been useful for reaching conclusions regarding relationships between reported decisions and social and economic variables, they have several limitations especially concerning their limited capacity to reveal subjective information necessary for uncovering individual perceptions, especially the reasons why women and men disagree in their responses, how they value different decisions, and their perceptions of the process of decision-making, among other methodological aspects (influence of gender norms in data gathering) (Ambler et al. 2016; Alwang et al. 2017; Twyman et al. 2015b). For additional discussion on the limitations of surveys for conducting research on household decision-making, see Twyman, Useche, and Deere (2015a).

This paper uses qualitative data collected from the mixed-methods study to address the questions concerning what we can learn about household gender relations from the perceptions of decision-making held by male-female spouses and what spaces for gender transformative decision-making exist. Data was collected via semi-structured interviews with male-female spouses (both married and unmarried), which were carried out as part of a broader mixed-methods study of household agricultural decision-making practices (see Garcia, Godek and Twyman 2017). In Colombia male-female spouses were interviewed for 18 households, and in Nicaragua, male-female spouses were interviewed for 10 households. An effort was made in both cases to recruit households that had participated in a CCAFS Gender Survey conducted in both research sites in 2015. Local non-government organizations (NGOs) participated in data collection, and interviews were carried out by a research team consisting of one male and one female interviewer, with male interviewees interviewed by the male interviewer and female interviewees interviewed by the female interviewer. Informed consent was obtained from all study participants prior to their participation in the study and further permission was requested and obtained by all households to digitally record interviews.

Owing to the different relationships of CGIAR research institutions with the local communities, the data collection methodology different slightly in each of the sites. In Colombia, researchers from the International Center for Tropical Agriculture (CIAT) partnered with the local NGO, EcoHabitats, which reviewed and made recommendations about the research methodology. Once local community approval was obtained from the community research council to carry out the study, data collection proceeded in one community located in Cauca. Households participating in the interviews were selected and recruited by a local community member contracted by CIAT to facilitate the research. Male-female couples from a total of 18 households were interviewed, 7 of which had participated in the CCAFS Gender Survey.[6] In the case of Nicaragua, CIAT partnered with the Institute for Research and Development Nitlapan (henceforth, Nitlapan), which was already a CCAFS partner in the Tuma-La Dalia Climate Smart Village and provided additional research support. Nitlapan identified and recruited household participants from three communities in Tuma-La Dalia where the CCAFS Gender Survey had been implemented. Male-female couples from a total of 10 households were interviewed, 3 of which had participated in the CCAFS Gender Survey.

The interview protocol used to the conduct the semi-structured interviews varied slightly between the research sites, and this was in response to the stipulation by the local community research council in Cauca, Colombia, that the interviews last no more than one hour. As a result, the initial instrument developed by CIAT researchers had to be modified. In both cases, couples were asked about their perceptions of individual and joint decisions and asked about who makes decisions about a list of common decisions regarding agriculture, food security, and income (individually by the male or female, jointly, or by/with another party).[7] They were also asked to give an example

[6] The sample size was increased from the original target sample of 10 households because minor changes were made to the interview protocol following the first seven interviews in an effort to capture data specifically about a joint decision made about agriculture, rather than any joint decision.

[7] For Nicaragua, this list consisted of 16 different kinds of household decisions, including 3 regarding food choices and preparation, 12 concerning farm and agricultural activities, and 3 regarding income and spending. For Colombia we asked 9 decisions that included 1 regarding food household consumption, 3 about potential implementation of agricultural practices (improve beans variety, water harvesting, and home gardens), 1 income control, and 4 on farm-related decisions.

of an agricultural decision made jointly and describe how the process of making that decision played out between them and their spouse.

For this paper, in order to understand more about what agricultural decision-making could tell us about gender relations in the household, we analyzed data collected from the semi-structured interviews in several ways. First, discourse analysis was conducted for respondents' perceptions of individual and joint decisions in an effort to identify any emerging patterns. Second, data on decision-making was compiled and analyzed for spousal accord and discord in order to: a) identify any patterns and ascertain the household gendered division of labor and b) determine if the previous trend noted in the CCAFS Gender Survey, namely that men report that they make most agricultural decisions individually, while women report that they participate more than their spouses give them credit for via both joint decisions and individual female decisions. This data was further juxtaposed against the data on decision-making perceptions in an effort to theorize reasons behind decision-making patterns. Finally, using Acosta's (2017) typology of decision-making patterns as a base, the description of making joint decisions given by interview participants was examined and was either categorized according to Acosta's framework if it fit the typology or a new typology was created. Data on group membership, gender training, and perceptions of *machismo* were also included as potential variables that influenced decision-making perceptions and practices, and examined accordingly. The following sections present the findings for both research sites according to these three dimensions of the data analysis.

Household Decision-Making Perceptions and Practices in Cauca, Colombia

Theoretical Perceptions of Decision-Making

Results from the interviews conducted with couples in Cauca revealed that individual decision-making is understood as a conversation with no agreement and/or when the spouse acts without informing the other spouse. The participants usually consider both situations to be negative since they reflect a misunderstanding between the couple and a conflict in the relationship. For one woman, an individual decision was perceived as "no agreement." She further explained that an individual decision for her is when she talks with her husband about something, and they do not arrive to the same opinion and instead have different ideas. Also, another woman explained that an individual decision means to act alone: "Suddenly, well, one doesn't understand right away. One says, I'll do this and he'll do this. And each one does what they want." Nonetheless, when women and men make decisions independently in their "domains" of expertise, individual decisions are seen as positive. In other words, when individual decisions follow traditional gender roles – women in charge of the domestic responsibilities and men in charge of farm management – decisions made individually are acceptable. In such cases, the individual has a tacit "authorization" from his/her spouse to make decisions by themselves. This perception is more evident with men than women. One woman who at first expressed a negative perception of individual decision-making later gave an example of an individual decision that she viewed as positive: "On the farm, he [the husband] decides mostly. For example, what is needed for the crops. This is decided by him. Only he makes the decision. For all other decision, if he is going to plant something, he asks me, or if he wants to do something, he asks me."

When it comes to making joint decisions, interviewed men and women shared their perceptions of the joint decision-making process as a long or short conversation, an agreement, and a way to show support for each other. One woman described making a joint decision with her husband as reaching an agreement: "when we talk, when we agree." Another man stated that for him, a joint decision-

making is "when we understand each other." In general, joint decisions are seen as essential for a couple, family, and household. They are synonymous with harmony, the absence of serious conflicts, and demonstrate that things can be done. For some, joint decisions are a sign of a more gender equitable household not characterized as *machista*, with *machista* implying some degree of mental and physical control of one spouse over the other (i.e., not letting their spouse state her/his opinion). Some participants see more instrumental benefits from joint decision-making. They believe that when a decision is made by the couple, the positive and negative consequences of the decision are assumed by both spouses or they think they can avoid making mistakes by making decisions about topics not in their domain of his/her expertise by making the decision with their spouse.

Perceptions of joint and individual decision-making did not vary between men and women; however, gendered norms were reflected in their responses. For example, people understand *machismo* as control, to not permit women and even men to participate in decision-making. One man stated: "*Machismo* is when you want to do things alone and do not consider the woman." Echoing these sentiments, one woman explained that "*machismo* is when only the men is the one who makes decisions." Another finding was that individual decisions were considered positive as long as they were based on the traditional gender division of labor. Lastly, for some households, the man can have the last say in joint decisions because he is the head of the household. One man explained:

> You might understand that in a household someone has to take charge. Thus, here I have always taken initiative in such circumstances - but not in a *machista* way. Rather I have always been responsible for the household, and I don't know if things will change now. But, yes, the decisions I have made have always been made in this way.

Decision-Making in Practice

Gender division of labor and decision-making. The interviews show a traditional pattern of the gendered division of labor, and decision-making followed suit. Men are generally in charge of households and make decisions regarding the management of the farm, and women are generally responsible for domestic work. Some on-farm joint decisions can reinforce and perpetuate traditional gender norms. This is the case for decisions on hiring labor. The woman participates because she has to prepare food for the laborers, so her husband talks with her about these decisions to coordinate the logistics. There are some advances because women participate in decisions related to income from the farm and on the implementation on new practices, such as water harvesting, new bean varieties, and home garden. But, even though women participate in such agricultural activities, in general the farm is seen as the male's domain, and the men do not participate in domestic work or in related aspects, like the maintenance of the home garden.

The explanation given by the participants for the way joint and individual decisions are made related to gender norms, and particularly who has the knowledge and who is in charge. For example, decisions about hired labor are made jointly because men are in charge of seeking hired workers and women have to cook for the laborers. In this case, since women's labor is need to make food for workers, they participate in making hiring decisions. The management of agricultural inputs (e.g., fertilizers, agrochemicals) is usually seen as a decision made only by men because he knows more about that, and decisions about home gardens are made by women because she stays at home more compared to men. One woman explained that she makes more decisions about household food consumption"[b]ecause I am the person in the kitchen." Her husband said

that she makes decisions about the home garden "because I see that she has more ideas about that, and I don't have many."

The participation of some women in making farm-related decisions, individually or jointly, seems to be related to land ownership. In Colombia, women tend to inherit land from their parents, even while they are alive. Usually, the husband helps the women to manage the land, but he talks and makes joint decisions with her because she is the landowner. In the context of study, data showed that on the same farm, women and men can maintain and work separate plots. As well, the Colombian Law says that when a man and woman are married, they share ownership of acquired assets and some recognize this. One man explained:

> For example, I sold this cow, and she had not given me permission. I cannot sell it. The cow is her property… She also owns land and her name is listed in the property documents. The state, the law requires that you do that. Thus, 50% is hers – half is hers.

This aligns with the fact that several women and men have received training and information regarding women's rights and family relationships from NGOs, television programs, and religious groups. Additionally, agricultural organizations working in the research site have focused some of their activities on women and there are various groups of women that produce coffee.

Spousal accord and discord in commonly made decisions. In some cases, there is both spousal accord and discord in the answers concerning who makes what decisions on the farm and in the household. In general, as mentioned above, spouses usually agree that women and men make joint decisions regarding the implementation of new agricultural practices, hired labor, and farm income. Nonetheless, regarding the implementation of new agricultural practices, the data revealed that in some cases the woman or the man responded that they make this decision individually because they were the ones who attended the workshop where the new practice was presented.

Discord was cited in some cases for farm-related and non-farm related decisions. Regarding the use of bean and coffee varieties, half of the couples reported that this is a joint decision, but the other half disagreed, with the women more likely to report it as a joint decision and the men as a sole decision made by them. On the other hand, regarding sugar cane and inputs (e.g. fertilizers and pesticides) for the farm, some agreed that only men make this decision, and in some households there is disagreement about who makes this decision with women responding that the man makes this decision and men reporting it as a joint decision. A tendency noted in the data was that men report joint decisions for those decisions that are considered male domain, while women reported joint decision for those considered the women's domain (i.e., household food consumption and management of the home garden). The discord between the couple can be explained by differences in gender perceptions and in the recognition of the couple's contributions, as a worker or landowner, and the knowledge each have of farm-related activities. For example, in one household, the woman sees the management of farm inputs, like fertilizers and pesticides, as being a decision made by the man, while for the man it was a joint decision. The reason for the discord is reflected in the following two interview excerpts, the first from the wife and the second from the husband:

> He is the one who knows more [about inputs and varieties]. As he said, he always worked with his father, so he knows more. He has more knowledge about everything, while I don't because I was not raised like him. (Woman)

> Regarding coffee, she has less knowledge [about inputs]. But we agree. I talked with her because she is the landowner. (Man)

Joint decision-making process. In the study when we asked to the participants give a concrete description of an agriculture-related joint decision and explain how it was made. Analysis of the responses revealed four different typologies, all of which implied a short or long conversation:

- The man and woman each give their opinion, and with that information they make a decision
- The man and the woman exchange opinion with other family members (women or men), and make a decision together
- The man considers the woman's opinion, but makes the final decision
- The man informs the woman before the fact, but he do not consider the woman's opinion

The first type of decision can be understood as the most equal in terms of gender, and it is the most frequent type of joint decision among the interviewers. Several interviewees described this type of decision in which a woman and man have a conversation and can have different opinions, but the product of the dialogue is an accord. Throughout the conversation, they state they respect and support each other. In some cases, this conversation can be very rational, since it implies planning and thought towards a desired outcome. Several participants described such a process in the following:

> For example, when the harvest comes, like the beginning of the coffee harvest, this is the time when you make decisions with your spouse. For instance, right now we are starting the harvest, so we are thinking. And now we are talking: 'And now, that the harvest is ready, what are we going to do with it?' In these moments, you make decisions. (Female)

> Sometimes she [his wife] thinks one thing and I think another, but we reach an agreement because I talk her. In other words, we understand each other. Therefore, what she says or what I say, it is respected by both. (Male)

The second type of decision observed in the data collected from the households occurred less frequently. In this case, the decision was made with other family members that either live or do not live in the household. Usually, these family members include sons and daughters and/or the parents (typically the father) of the woman or the man. Children are seen by the couple as innovative and contributors to home and farm work, while parents are people with more experience with farm activities, or still are the landowners. One man described the process of making a decision about hiring labor with his wife and children as "reaching an agreement."

The third joint decision typology occurred when a man informs or talks to his wife before making a decision, but makes the final decision. During the conversation, the woman may share her opinion and the man considers it when making the final decision. For example, this typology was illustrated in an example one woman gave about buying fertilizer for coffee:

> Before going to buy the fertilizer, he told me that we have to buy this one kind. Then we would put it on the coffee… He asked me if we should buy a different fertilizer or we should buy the fertilizer that we had planned to buy… this [decision about] the fertilizer is his because he's the one who knows about it.

Even though the woman did not participate very much in this decision, she perceived it as a joint decision because her and her husband spoke about it before the final decision was made, and during this conversation, the woman could give her opinion. Men have the final say because of cultural reasons, like one man explained: "If you are the head of household, you have to make the decision."

The last type of joint decision identified is when the men informs the women before making a decision, but he does not consider the women's opinion. This can be a joint decision in which women play a very limited role. In this case, the man talks with the woman before making the decision, but sometimes the conversation is more about sharing information than sharing opinions. Thus, the ideas or reason given by women are null or are not taken into consideration in the final say. One man explained: "If I say: I will do this today or tomorrow, and [my wife] says: 'sure'." Another man explained: "I will consult to her about everything, but the decision is already made."

Joint decision-making: perceptions vs. practice. In comparing the responses of men and women participants on perceptions of joint decision-making and the process in practice, the data shows similarities, meaning that the men and women report a decision-making practices that are consistent with their perceptions of joint decisions. Two tendencies in the data were identified. For some women and men, they had different theoretical perceptions of joint decisions, and the examples they gave of decision-making echoed these perceptions. For example, one woman explained that a joint decision is synonymous with a peaceful household and described a decision-making process in which all the household members, including her sons and daughter, participate. They prefer not to move forward with a particular action until there is a consensus between them. According to her, they do not make individual decisions. Her husband perceives joint decision-making as an agreement involving conversation. In his description of an example of a farm-related joint decision, he describes talking with his wife, but not taking her opinion into consideration. He has the final say. A second tendency is that women and men share a similar perception of joint decisions and both report a similar process of making them. This happens especially for those that report the process of making a joint decision as a conversation in which women and men give their opinions, debate, and finally reach an agreement.

But not all households evidenced consistency between their perceptions of joint decisions and the process of making on in practice. Some households evidence differences between their perceptions and their decision-making processes. Some defined a joint decision as an equal conversation in terms of gender, but their description of a joint decision demonstrated that men have the final say in the conversation, and in some cases men did not even consider the women's opinion.

Household Decision-Making Perceptions and Practices in Tuma-La Dalia, Nicaragua

Theoretical Perceptions of Decision-Making

Data on individual decision-making collected from the couples interviewed in Tuma-La Dalia revealed several differences between the responses of women and men. Women gave clearly defined responses describing what it means to them to make an individual decision. This generally consisted of making a decision alone without consulting their spouse. Only one woman expressed a somewhat different opinion, linking individual decision-making with economic power: "I say it is a decision I make on my own because I pay." Women's responses overall tended to express a sense of empowerment and initiative to do something for themselves. Examples cited by the women included buying a pair of shoes or preparing food of their choice.

As for the men's perceptions of individual decisions, these varied more than those of the women respondents. Some of the men echoed the perceptions of the women, explaining that for them an individual decision was one they make on their own without consulting their spouse. One man stated that he believed making decisions without consulting one's spouse would generate problems between them. Several of the men had difficulty articulating their perception of an individual decision, which was curious being that every man interviewed cited at least one decision that he made individually.

While there was some variation in the women's and men's perceptions of joint decision-making, a major thread that ran through the vast majority of responses was that joint decision-making implied a conversation or dialogue between the couple and reaching an agreement (*ponerse de acuerdo*) between them on the subject of the decision. One woman explained: "Making decisions means both reach an agreement. One doesn't say no and the other yes. They reach an agreement." Another man echoed these sentiments, stating joint decision-making meant "reaching an agreement, both analyzing, and that there is no contradiction between them."

The main difference between the women and men's perceptions was that the men's responses emphasized the benefits of reaching agreement in joint decision-making, namely avoiding potential conflict that could affect the couple's success in achieving goals. Making decisions individually was thus seen as being a source of problems for the couple. Several examples of men's responses that highlight this perspective are as follows:

> What I know up until now is that when you make a decision together in a group, it means talking, recognizing the value of the other person. If you make a decision alone, it is lost decision. If you make a decision together with another person, it will be advantageous.
>
> It is good to make decisions together with your spouse because like this one works well. You don't feel in disagreement. Everything works better in agreement.
>
> [Joint decisions are when] both people think the same and enjoy success. So, the individual who make decisions alone - a man or woman, will have problems.

Another man also highlighted an additional benefit of making joint decisions, which is that one person does not shoulder responsibility for the outcome of the decision:

> For me understanding things in the same way is important because things could get worse if one makes a decision alone. Afterwards they say you were the one who made the decision. When decisions are made together things go well.

Several comments by interview participants about joint decision-making were useful for understanding gender norms and relationships of power in the household. For example, one woman reported that making a joint decision usually implied that her husband would initiate the decision-making process and they would then "talk about the decision," which, according to her explanation, consisted of her conforming to his wishes. When asked what would happen if she did not conform to his opinion, she stated his reaction would be "bad," thus underscoring her perception of having significantly less bargaining power in the decision-making process and inability to assert her opinion without negative consequences. In another case, a man who had difficulty describing his perception of a joint decision explained that he believed it was better when only one person made decisions, thereby again calling attention to the issue of power and influence in the making of joint decisions.

Decision-Making in Practice

Gender division of labor and decision-making. Among the couples interviewed in the Tuma-La Dalia research site, decision-making about food, agricultural activities, and household financial resources generally followed traditional gender norms: men are typically responsible for agriculture and farm decisions, while women are mainly responsible for decisions related to food. Financial decisions about income or spending varied with some couples reporting that couples make these decisions jointly, while others reported that the male spouse mostly makes these decisions. In no case were financial decisions made solely by women. Regarding agriculture, few women were involved in making decisions about agricultural production. The only activity for which women made decisions on their own was raising chickens and pigs. Apart from this activity, when women participated in agricultural decision-making, it was in the form of joint decisions made with their spouse.

Spouses were asked individually in the interviews about the reason behind the division of labor and decision-making. While the answers varied, the responses they gave generally supported the traditional gender division of labor and decision-making. Table 2 below provides a summary of the different responses from the interviews. The data suggests that how decisions are made is influenced first and foremost by the traditional gender division of labor, which generally extends to decision-making. A second, related factor is technical knowledge. Both men and women report that women do not make agricultural decisions because they lack knowledge about agriculture (and in turn make decisions about agriculture when they do have knowledge). Likewise, the collected data also revealed that men generally do not make decisions about food because they lack this knowledge. A final factor, also influenced by the gender division of labor, is time. Responses indicate that women do not participate in farm activities because they lack time on account of their domestic and care work, whereas men spend most of their time in the fields and thus are not at home.

Spousal accord and discord in commonly made decisions. Like in the case of Cauca discussed above, there is accord and discord in the responses of men and women living in communities in Tuma-La Dalia about different decisions they make in the household about food, agriculture, and income. The decisions for which there was the greatest degree of spousal accord (results showing 8 or more households in reporting accord) in the responses of the couples included those regarding food preparation (women made decision), fertilizers and agrochemicals (men made decision), and income distribution across expenses (mostly joint or made by men).

For other decisions, there was more spousal discord. Echoing the tendency cited in the Cauca case, it was found that for decisions in the man's domain of agriculture, men generally reported the decision as being joint, while women reported the decision as being made by the man. For decisions pertaining to the woman's domain (namely related to food), women generally reported these as joint decisions and men reported them as being made by the women. Table 3 below shows a breakdown of decisions for which both spousal accord and discord was reported. What is interesting is that discord was more frequent in several of the decisions that were normally associated with the women's domain, namely the size of food portions at meal times and what foods to eat. Furthermore, the results of the study suggest that deciding what foods to eat is not necessarily a decision made by women, as in some cases spouses agreed that this decision was made by solely men, solely women, or jointly depending on the household.

Table 2. Reasons for Gendered Decision-Making Patterns

Type of Decision and Reason	Women's Responses	Men's Responses
Why she makes decisions about food.	Women's domain is the home and domestic sphere	Women's domain is the domestic sphere
Why he makes decisions about food/home	Because he wants to cook something he cooks well and likes	Because wife is away or sick
Why he does not make decisions about food	He doesn't know about cooking and food He is mostly in the fields and not at home	He is mostly in the fields and not at home Doesn't like to cook
Why he makes decisions about agriculture	Man's domain is agriculture/farm He knows more about agriculture and/or has more experience	Man's domain is agriculture/farm He knows more about agriculture and/or has more experience
Why does she make decisions about agriculture	She makes decisions about pigs because they are hers	She makes a decision about an agriculture practice because she knows about it She participates in agricultural decisions
Why she does not make decisions about agriculture	She doesn't have time to work on the farm because of her domestic/care responsibilities She doesn't know about agriculture	She doesn't know about agriculture Agricultural work (e.g., working with chemicals) is too dangerous for women
Why joint decisions are made	Joint decisions are made when he initiates them Joint decisions are made because he doesn't want her to make decisions on her own Joint decisions are made to keep things moving	Joint decisions are made at his initiative
Other comments/explanations:		Because that is the way things are done

There were several other decisions for which there was a significant amount of spousal discord in the responses of couples but no obvious pattern of spousal discord (i.e., the combinations of responses variety). These included decisions related to small livestock (reported as mostly made by women), large livestock (mixed with women reporting it as women's decision and men reporting as men's decision), the home garden (mostly reported as men's decision), and how much of the harvest to sell and how much to keep for family consumption (reported as either a joint decision or decision made by men).

Table 3. Household Decisions and Patterns of Accord and Discord

Decision	Accord Pattern	No. Households Reporting Discord	Discord Pattern
Farm Labor	Joint decision or made by men	2	Women report as men's decision and men report as joint decision
Farm production	Mostly men	3	
Bean variety/seed	Mostly men or otherwise joint	3	
Use of income from sale of crops	Mixed joint and men	3	
Corn variety/seed	Men	4	
Coffee variety	Men	4	
Food portions at meal times	Women	4	Women report as joint decision and men report as women's decision
What food to eat	Mixed	5	

Joint decision-making process. Men and women perceive the joint decision-making process in different ways. As mentioned above, as part of the interview, we asked couples to give us an example of an agricultural decision that they made jointly with their spouse. Like in the case of Cauca, all but one response reflected either a short or long conversation between the spouses. There were very few instances in which the example given by the male and female spouse from the same household coincided. Furthermore, some men and women cited more than one example of joint decisions they made with their spouses in the interviews, and these were often different processes depending on the type of decision. In general, the examples that men and women gave fell into one of the following seven categories:

- The man makes the decision (no discussion)
- The man informs the woman before making the decision, and the woman conforms to what he says
- The man considers the woman's opinion, but makes the decision himself
- The woman considers the man's opinion, but makes the decision herself
- The man and woman exchange opinions and make a decision together
- The man and woman exchange their opinions with other family members and make the decision as a family

Regarding the first of these, this was the only instance in which a woman reported that her husband made decisions without consulting her. In this case, the woman reported that she does not know much about agriculture, so her husband makes those decisions. She also reported that they made joint decisions about how to spend income, and she participated more in these decisions.

For the second typology listed above, three women and two men gave examples of joint decisions made with their spouses in which the husband informed her of the decision and she conformed. What is meant here by conformed is that the woman reported simply saying "Sure" ("*está bien*")

and not further engaging in the conversation about the decision or giving an opinion. This response was more common for women who reported making very few decisions by themselves and/or for which few or even no joint decisions were reportedly made in their households. An example described by one woman is as follows:

> At least when he sells a cow, he tells me and we talk… [He says,] 'I'm going to sell it or maybe I'll buy a calf. What they sell are calves. It's going to cost money. At least, as you know, to fix the wire fence or something else.' So I tell him, 'yes, it's fine.'

She further reported that she does not think he would be open to her expressing an opinion that was different from his and she has never tried to do so. In another example, one man explained that he made the decision to plant coffee close to the house. When asked if he had discussed this with his spouse, he said that he had and she had said that it was fine. In his mind, they had reached an agreement, though there was little indication of just how much she participated in the decision.

The third typology listed above, which occurs when men consider the opinions of their spouses but ultimately made the decision themselves, was illustrated by examples provided by three men. In one case, the man's spouse had studied agronomy in the past and he expressed that while he has more practical experience, she has a lot of knowledge. He reported making joint decisions with her deciding which varieties of beans, corn, and coffee to grow (though she only reported making a joint decision about the bean variety – she reported that he made the decisions about the corn and coffee varieties). In another case, one in which the woman reported making no decisions on her own and having little autonomy – and indeed no joint decisions were reported for the household by either spouse, an interesting development surfaced in the examples of joint decision-making. Her husband explained how they came to produce rice on the farm:

> She asked me when I was going to plant rice. I asked myself, 'How am I going to plant rice?' So, she too makes decisions about work. We are going to see how this goes because I didn't want to plant rice… [But] yes, this is the first year that I planted rice. So I spoke with her and we planted it – and there it is.

Ultimately he made the decision, but the example suggests that he perceives some decision-making space for her to participate in agricultural decisions.

In two cases, men reported that women made agricultural decisions after taking their husbands' opinions into consideration, which is the fourth typology. Noteworthy here is that in both cases, one or both spouses attended some sort of training on gender equality and human rights, and in one case both the man and woman own land. In the first case, the woman sold some livestock to a buyer when her husband was away from the farm, but had coached her on how to do so prior to leaving. In the second example, the husband describes how his wife initiated a decision to contract some farmworkers and made the decision about which ones to hire. In both cases, the men report making a fair number of agricultural decisions jointly with their wives, though their wives generally perceive these decisions as being made solely by their husbands.

Regarding the fifth typology, which is when the man and woman both exchange opinions and make a decisions together, was the most frequently cited joint decision-making typology (five women gave examples and three men). This decision-making style was more common among households in which one or both spouses had been exposed to information about gender equality and human rights on television or via training workshops in their communities. It is important to note that in these decisions, even though participants report a dialogue between themselves and

their spouse, it is often the man who initiates the decision. An example of a joint decision made by one woman and her spouse is described in the following:

> When he made the decision to plant coffee, he say to me, 'Well, we have these animals, these pigs. If I plant coffee, they are going to damage it. What do you say - should I or should I not pant coffee?' So I said, 'The pigs can be tied up so that they don't damage the coffee.' He told me no because they would get stressed out. So I told him that they wouldn't get stressed out if they were well cared for and when the coffee was a bit bigger, we could let them loose again and they wouldn't damage the coffee. Like this we made the decision.

In both of the cases of the men who gave examples illustrating this typology, their wives' examples of joint decisions also followed this same typology and there is also spousal accord with respect to reported decisions they make jointly. The data suggests these two couples as being the most egalitarian of the group. In one example of a joint decision, the man describes how his wife came to his several years ago with an idea to change the type of bean variety they were using to one that was more climate-friendly. He describes this in the following:

> Two years ago, it was rumored that climate change was going to make it a dry year. So she said to me, 'The say that this year is going to be dry. Why don't we plant a few of these beans?' We planted them. I went and when I saw the beans, I told her and I changed varieties. We planted them, and this time we planted half a manzana and it's been good for us.

One final typology that was reflected in the descriptions of joint decision-making was of a decision made in the context of a family. This type of decision was only evidenced in the example of one woman of a joint decision, and it is unclear if she was a part of it. According to the woman's example, the family made the decision not to grow beans after the previous harvest had been rather small. She further explains in the following:

> The boys said not to plant right now because it was so much work and they didn't get out of it what they put into it. So they reached an agreement [with their father] that it was better to buy beans and like this we have been buying beans.

Joint decision-making: perceptions vs. practice. For the most part in the Tuma-La Dalia case, the examples that the men and women gave of joint decisions were consistent with their individual perceptions; however, the perceptions that each person had of joint decision-making was usually different from their spouse's perception. Only in three cases did spouses share more or less the same perception of what joint decision-making means. Furthermore, while for the most part joint decision-making is perceived by men and women as a process of conversing and reaching an agreement, there are different ideas about how this plays out and what it implies for the participation of each person. Reaching an agreement, as illustrated in a number of examples given by men and women, does not mean equal participation in the agreement. Several cases suggested that, for some men and women, reaching an agreement might mean simply conforming to the wishes of your spouse. Furthermore, given that men largely dominate agriculture owing to traditional gender norms and the gender division of labor, some men end up making agricultural decisions themselves, even though they acknowledge the role and the value of their partner in their stated perception of joint decision-making. Finally, related to this last point is a final and important observation: for the two couples that describe engaging in the practice of making decisions by sharing their opinions and making a decision together, in both cases the man clearly articulated the meaning of joint decision-making when discussing his perceptions, noting it was a process and

also underscoring the importance of "recognizing the value of the other person" and "reaching agreement [and] analyzing together." This should be seen in contrast to two other men who had difficulty both articulating the meaning of a joint decision and identifying an example of making a joint decision with their spouses.

Discussion

One of the aims of this paper was to explore men and women's perceptions of decision-making and the process of making agricultural decisions as a means of understanding gender relations in households in each of the study sites. To refresh, the rationale behind exploring this issue in the context of gender transformative climate change adaptation is that decision-making power is considered a key indicator of women's empowerment and measuring gender transformative change (Hillenbrand, et al., 2015). This paper argues that gender transformative approaches to climate change are necessary in order to reduce the negative impact of climate change on already existing gender inequality and the consequential likelihood of reducing the ability of women to adapt to climate change, which could result in enhancing their vulnerability and negatively impacting their livelihoods and those of their families. One of the challenges up to this point has been that the climate change discourse is largely dominated by men and masculine interpretations of climate change adaptation that has reduced the visibility of women and feminine concerns, knowledge, and perspectives. This limits the possibility of creating the kinds of fundamental changes that are necessary for reducing the burden of climate change on women, especially in rural areas where both poverty is high and, depending on the region, climate vulnerability can be high. Considering the findings of each of the case studies presented above can help shed light on this question.

This paper argues the importance of household decision-making as a site where decisions are and will be made to adopt climate-friendly practices that help families to adapt to climate change and existing gender relations can shape the adoption of such practices. Gender transformative approaches to household decision-making have the goal of deepening gender equality so that the voices of men and women are heard. Sharing the decision-making space and process means that outcomes are more likely to reflect the interests and goals of all parties – men and women. This could in turn reduce the likely negative effects of climate change on gender relations and ensure that measures are taken that do not disproportionately affect women. So the issue of gender relations within the household becomes paramount for assessing the potential of gender transformative approaches and also identifying factors that would hinder the progression of such approaches.

Turning back to the characterization of gender relations in the households included in these studies, there are several important observations to make. First, men and women's roles in the household and in decision-making highly correspond to traditional gender norms and gender division of labor. Women, for the most part, are in charge of domestic tasks, like food preparation and care work, while men are in charge of agriculture, and decision-making generally follows this pattern as well. Households that reported one or more spouse attending a training or workshop on gender equality and human rights or those for which both spouses possessed productive resources (e.g., land ownership) demonstrated patterns of decision-making that more significantly departed from traditional norms.

Another observation that we made was that men and women appear to have relatively similar ideas of what decision-making means, both individually made decisions and jointly made decisions, but

had very different perceptions of how decisions were made. Regarding the first of these, men and women generally defined individual and joint decisions similarly, though this differed somewhat by research site. In Colombia, individual decision-making was largely seen in a negative light, and only seen as positive when positive when men and women make decisions based on their gender roles (women = domestic, men = farm). In Nicaragua, the negative connotation of individual decision-making was expressed more in the responses of men who saw individual decisions as a potential source of conflict in the household. Women, in some ways, expressed a certain amount of empowerment when speaking about individual decisions. In terms of joint decisions, men and women in both sites had similar perceptions that joint decision-making entailed a conversation and agreement, and such decisions were seen as beneficial to the household and couple. In Colombia, perceptions of joint decision-making were linked to gender norms such as the perception of machismo, like a form of men's control over women, and at the same time the acceptance of gender traditions of labor and the figure of men as the head of the household. While these observations could be argued for Nicaragua as well, they were not as pronounced.

As for perceptions of how decisions were made, while the majority of individuals interviewed agreed that one of the defining features of a joint decision is agreement between the couples, agreement neither necessitates nor implies equitable participation in decision-making, thus echoing Acosta's (2017) findings. On the contrary, we found that there was a substantial amount of inequality in decision-making, even beginning with who initiates the joint decision (typically men). It was clear that men and women had different perceptions about the extent to which they participated in making agricultural decisions. This was evident both in the patterns of agricultural decision-making reported by the couples in their household as well as in the examples of joint decisions they described. Regarding the first of these, based on the data on how men and women reported who made agricultural decisions, these decisions were generally made by the men or they were made jointly. There were very few instances where there was spousal accord concerning an agricultural decision made by a woman on her own. When this did happen, there was a clear reason for it – perhaps she owned land or had technical knowledge about the decision.

There was a notable amount of spousal discord concerning agricultural decisions in both case studies. Women generally reported that men made most agricultural decisions and the reasons they gave were that he had more agricultural knowledge and experience or to traditional gender norms (the farm is the man's domain). On the contrary, men reported agricultural decisions as being made jointly, thus perceiving that his spouse had a greater role in the process than she herself perceived. This is particularly notable and departs from previous studies that found that men typically report themselves as the sole decision-maker for agricultural decisions, while women more often report these decisions as being made jointly or by herself (Twyman et al. 2016a, 2016b). It raised the question as to why men perceived women as participating more in these decisions, while the women did not. Previously, the belief has been that gender norms impede the participation of women in agricultural decision making; however, the results of this study question this assumption and rather raise the question of whether women are stepping into spaces where they can exercise more agency. In other words, the space for participating more equally might already exist in some households, but the question is whether women are exercising their agency to step into these spaces and participate. It would be logical to think that, given existing gender norms, that women's perception of the decision-making structure and traditional gender division of labor might discourage them from occupying these spaces and exercising more decision-making agency.

As in the case of spousal accord and discord described above, the examples of joint decisions also illustrated that men and women have different perceptions of how much they participate in agricultural decision-making. The data suggests that conversing and reaching an agreement – hallmark features of joint decisions according to the men and women – can imply very different degrees of women's participation. In some cases, as stated above, it appeared that the woman merely conformed to the wishes of her spouse and in some cases was fearful of the consequences of expressing herself fully. In such cases, the male normally had significantly more bargaining power, which was attributed to his knowledge, assets, or status as the head of household. In other cases, it was clear that the man and woman engaged in a thoughtful dialogue and it was important to listen and analyze together. In such cases, both men and women initiated decisions with their spouse and bargaining power seems to be more equitably distributed. It was here again that the factors like whether the couple had received gender equality or human rights training appeared significant. The examples of both cases – where bargaining power is more concentrated and where it is more evenly distributed – offer us insights into what kinds of measures can promote gender transformative decision-making. They also point to the fact that joint decision-making is not necessarily a sign of women's empowerment – rather it is the conditions and manner in which joint decision-making is exercised that can indicate degrees of empowerment.

Fostering Gender Transformative Decision-Making with Rural Households for Climate Change Adaptation

What does gender transformative decision-making look like when applied to making household decisions about agriculture? What criteria need to be met in order for gender transformative decision-making to occur? These are key questions for consideration and provide an entry point for thinking through the kinds of interventions and activities that can serve to promote the transformation of household gender relations decision-making about agriculture and, by extension, climate-friendly agricultural practices.

Based on what was learned in this study, several important obstacles exist for deepening gender transformative decision-making. By and large, the most important of these is related to traditional gender norms and the perception that agriculture is the domain of the male. This factor alone has broad implications. It can serve to discourage women from developing an interest in agriculture, gaining technical knowledge, or engaging in other activities related to this domain, as gender norms also dictate what men and women should like and what they should know. Furthermore, the same gender division of labor assigns women to the domestic sphere, where her responsibilities can prohibit her from working in agriculture (or any other vocation) unless necessary. The other obstacle observed in this study the continued challenge of educating families about gender equality, human rights, and how to put these principles into practice in the home. In Nicaragua, one or both spouses had been exposed to information about gender equality and rights, but there were cases in other families where spouses had never heard of machismo or had never spoken with someone or learned about these topics.

While both of these obstacles are significant, there are also important opportunities for expanding existing spaces for the promotion of gender transformative decision-making. First, there are examples of progress on gender norms that help to lay the groundwork for gender transformative approaches. The perception of machismo mentioned above in Colombia illustrates such progress, as well as the recognition of women as landowners in some households. Another example is of men in Nicaragua who expressed perceptions of decision-making in theory and practice that

included women in the agricultural decision-making process. Such examples illustrate that attitudes about gender norms are flexible and can change.

Another opportunity for gender transformative decision-making lie in gender-sensitive and gender-responsive programming that has been underway for some years now. This study both illustrates how important and influential this programming has been, and it also shows the need to reach those who have not yet been reached. There are two kinds of programming, in particular, that would be most useful. The first is gender-sensitive and gender-responsive technical training to grow men and women's knowledge about agriculture, not only in response to their own needs, but also to integrate masculine and feminine discourses about agriculture into programming that is not contingent on one's sex. In other words, instead of limiting discussion of feminine discourses of agriculture to women, introduce them to men and vice versa. The second kind of programming is more training and workshops on gender equality, and particularly in putting principles into practice with couples. Men have indicated that they want their wives to take part in decisions, but maybe it is a question of learning and practicing how to do this. Gender transformative practices, like others, will in many cases need to be learned and appropriated.

In closing, earlier in the findings of this paper, an example of gender transformative decision-making for climate change adaptation was referenced. It occurred when a woman in Nicaragua approached her husband about trying out a new bean variety that would be more suitable to climate vulnerability. The couple made the decision together through discussion to experiment with the variety, and it was successful. This example demonstrates that such equitable decision-making about agriculture and climate change, and as we go forward, it is a matter of creating the conditions – with regard to norms, attitudes, knowledge, and willingness – to increase the possibilities for more gender equitable approaches.

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