



IMPLICATIONS OF GENDER-FOCUSED RESEARCH IN SENEGAL FOR FARMER'S ADAPTION TO CLIMATE CHANGE

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Crop and climate models predict how climate change will impact yields of various crops in different regions. However, it is difficult to predict the impact of climate change on individuals' lives. Different groups and types of people experience the impacts of climate change differently depending on their position in society, which is determined by gender, race, class, ethnicity, religion, age, and other factors. Local cultural and gender norms regarding who does what and who controls the benefits from different activities also matters. It stands to reason, then, that appropriate climate change adaptation strategies, including adoption of climate-smart agricultural practices and use of climate information, will be distinct for different groups of people, and for women compared to men.

This brief highlights key gender-related findings regarding climate change perceptions, adaptation strategies and information needs in Kaffrine, Senegal, where the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is working.

We know that in Senegal and elsewhere, male and female farmers have different roles and responsibilities on the farm. What this means in terms of how they will adapt their farming practices in the face of a changing climate, and what governments, development agencies, NGOs, and researchers can do to facilitate this, is not so well known.

We set out to explore gender differences in how men and women perceive climate change and its impacts, and the ways in which they are responding to these changes. We interviewed the principal male and female decision-maker, including multiple wives, in 200 farming households in Kaffrine, located in the southern peanut basin of Senegal. We asked men and women the same set of questions, and explored the implications of similarities and differences in their answers for policymakers and others seeking ways in which to enhance agricultural development and livelihoods.



Image: Women receiving climate information (credit: A. Tall).

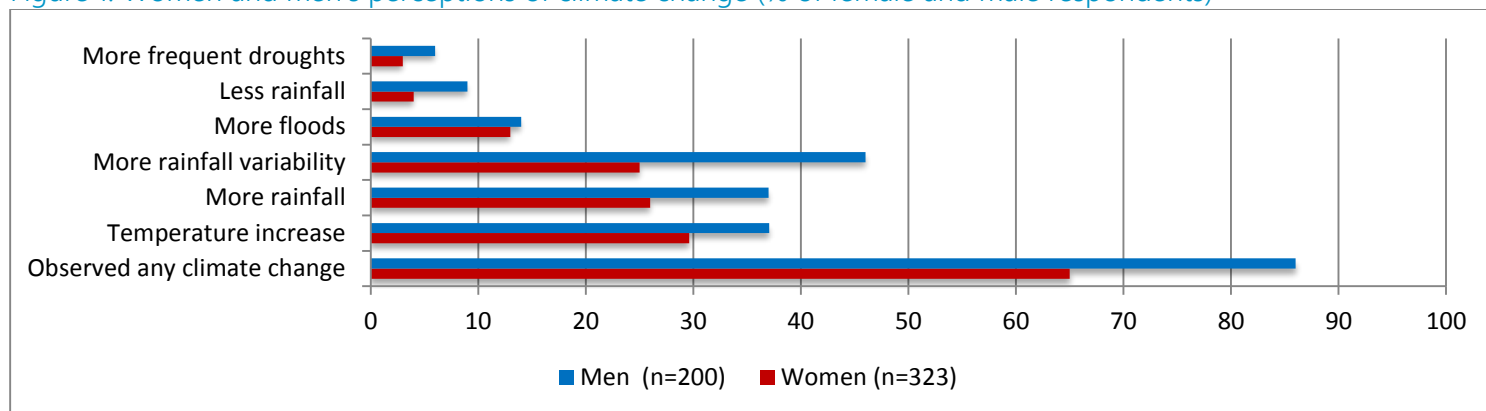
GENDERED PERCEPTIONS OF CLIMATE SHOCKS AND CLIMATE CHANGE

Respondents were asked about their perceptions of short-term weather-related shocks (e.g. droughts and floods) that they experienced in the last five years, as well as long-run changes in weather patterns over their lifetime (climate change).

We found no gender differences in perceptions of extreme weather-related shocks in Kaffrine. Close to 20% of both women and men reported experiencing floods and a slightly higher percentage said they had been affected by storms. Very few respondents had experienced a fire or drought in the last few years, while around 10% of both men and women observed erratic rainfall.

However, many respondents have experienced climate change (Figure 1). More men than women reported that they had observed changes in weather patterns over their lifetimes (86% of

Figure 1. Women and men's perceptions of climate change (% of female and male respondents)



Source: IFPRI-CCAFS Senegal household survey.

men versus 65% of women). When asked about specific types of changes, more men (37%) than women (30%) reported perceiving higher temperatures.

More men than women, but few of each, also reported experiencing a decrease in overall rainfall or an increase in the incidence of droughts. More than 10% of men and women reported experiencing more floods. In terms of perceived impacts due to climate change, men and women similarly ranked health problems first, reduced agricultural productivity second and increased poverty third.

CLIMATE INFORMATION SERVICES AND GENDER

Because of increased variability in weather patterns, smallholders are finding it increasingly difficult to decide when and how to plant, apply fertilizers and/or pesticides, feed and water their livestock, and harvest their produce. This study found that a little over half of the farmers in Kaffrine have access to short-term weather forecast information. Women have less access to certain types of climate information than men, likely related to their gender differentiated labor roles, as women are responsible for most domestic work. The types of information they are getting less of include the predicted start of the rains (83% of men are receiving information on the start whereas only 65% of women reported receiving this information), livestock production-related information (38% vs. 24%), and pest and disease outbreaks (38% vs. 29%). Overall rates of access to information are low in this region, even for men.

Although access to information is not very high, we found that if women, as well as men, have access to the information, most say they are able to make use of it (e.g. to take up new agricultural practices that help them adapt to climate change) (Figure 2). However, less than half of all women interviewed report being able to use information regarding droughts, suggesting they may lack access to other resources that are needed to use this type of information to adapt to or cope with extreme weather events.

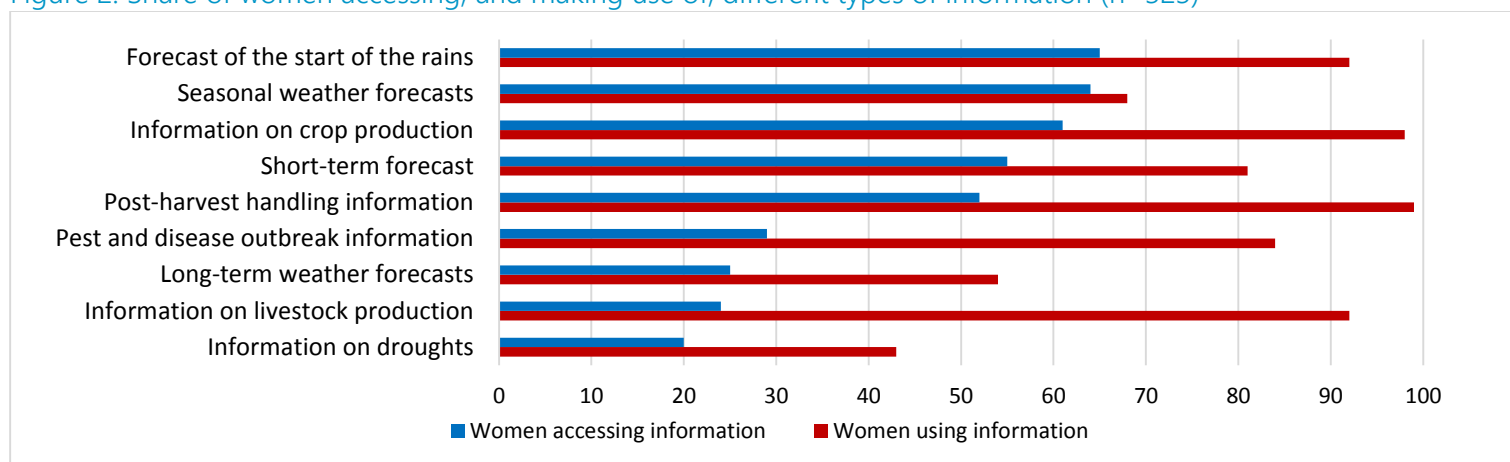
Where do farmers get their information from? Access to different sources of weather and agriculture-related information (i.e. extension agents, radio programs, etc.) is largely determined by gender and other cultural factors. Farmers often get information from NGOs, government extension agents, and community meetings. However, few farmers in Kaffrine reported having access to these sources of information compared to other similar smallholder environments in the region. Women, in particular, have little access to agricultural information—only 2% of women report having access to extension agents and 8% to NGOs and community meetings (Table 1). While men are more likely than women to have access to these information sources, the rate of access is still very low at less than one quarter of men. Farmers' organizations do not seem to be a source of information either.

We also found that very few men and women have access to agricultural or climate information from TV, newspapers/bulletins, schools/teachers, cellphones, internet, or agricultural shows. Radios are reaching over 80% of both men and women, however. There is clearly much progress to be made by climate information providers and agricultural extension and development agents to better understand and serve the needs and preferences of both men and women.

GENDER DIFFERENCES IN ADAPTATION TO CLIMATE CHANGE

How are men and women responding to the changes in climate they have experienced? Adaptation strategies being pursued by men and women are likely to differ due to differences in access to and/or control over resources and participation in decision-making processes, among other factors. When asked about changes in agricultural, livestock or livelihood practices in response to climate change, almost half of all interviewed men, but only one-third of women, reported making such changes. This amounts to a statistically significant difference, suggesting men in this region are more responsive to perceived climate change than are women.

Figure 2. Share of women accessing, and making use of, different types of information (n=323)



Source: IFPRI-CCAFS Senegal household survey.

The men and women who did not adjust their farming practices stated that they did not know what to do or that they lacked the financial means to implement changes. Insufficient labor or information about climate change were also mentioned by some farmers.

People cannot adopt practices that can make them more resilient to climate change and other challenges if they are not aware of these practices. We found that women are less aware of many agricultural practices than men, including terracing, water harvesting, mulching of crop residues, composting, more efficient use of fertilizer, improved varieties, minimum tillage, cover cropping, as well as improved feed, livestock breeds and rangeland management practices (Figure 3). However, women are more aware than men of improved cookstoves (81% vs. 66%), as they are responsible for food preparation.

If women are aware of certain practices, they seem to adopt them just as much as men. In Kaffrine, women, in accordance with traditional labor patterns across gender, participate less in agricultural production activities compared to men--only 7% reported being responsible for the majority of farming activities.

However, among those women who said they were aware of improved practices, 96% are practicing agroforestry, 85% are mulching, 96% are practicing improved manure management, and around 80% are using fertilizers more efficiently. Significantly more women than men also reported planting improved crop varieties and cover cropping--both of which are important for food security--when they are aware of these practices.

DISCUSSION AND CONCLUSIONS

Differential access to weather and agricultural information clearly affects men and women's abilities to adapt to climate change. Men in Kaffrine are more likely than women to access information from

formal networks. This is important to note because while women may have some access to informal channels of information, they are unable to access formal networks structured by men because of cultural norms. The data show that women largely depend on family members, neighbors and traditional sources, along with radio, to meet their information needs. While men also depend on these traditional sources of information, they are more likely than women to also be receiving information from agricultural extension services, NGOs and community meetings.

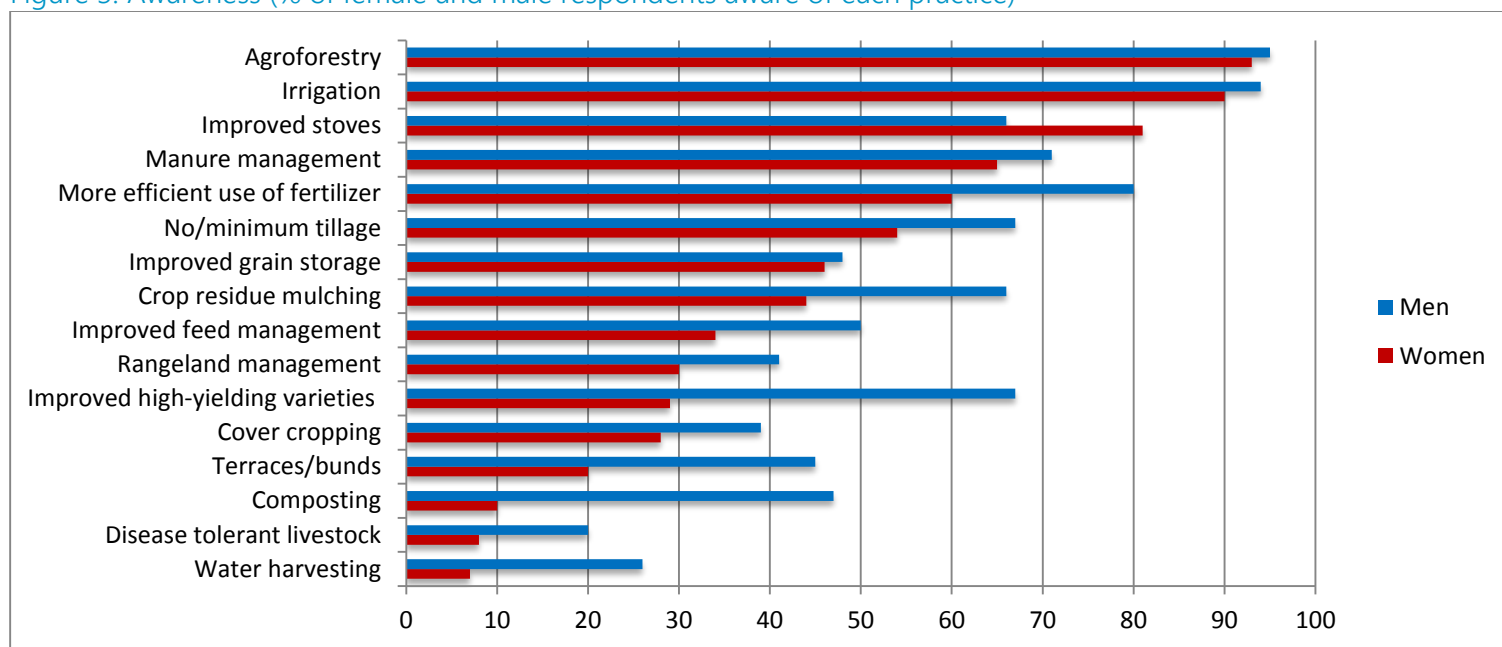
Table 1. Sources of climate and agricultural information for women and men (% of women and men with access)

Sources of information	Women (N=323)	Men (N=200)	Significant Difference
Traditional forecasters or indigenous knowledge	88	94	*
Radio	85	88	
Family members	83	68	*
Neighbors	80	79	
Religious groups	13	14	
TV	10	8	
NGOs	8	24	*
Community meetings	8	17	*
Agri-service providers	6	15	*
Government extension	3	12	*
Farmer organizations or cooperatives	1	1	
Cell phones	1	4	*
Newspaper/bulletin	0	1	

Source: IFPRI-CCAFS Senegal household survey.

*Significant difference between men and women.

Figure 3. Awareness (% of female and male respondents aware of each practice)



Source: IFPRI-CCAFS Senegal household survey.

Types of information, sources of information, dissemination methods, and timing are all important aspects for providers of climate and agricultural information services to consider when delivering information that both men and women farmers can use to make informed decisions. Access to even basic weather information is still an issue for both men and women in Kaffrine. Women in Kaffrine generally have less access to various types of information than men, including the predicted start of the rains, livestock production-related information, and pest and disease outbreaks. Despite limited access to information, it is encouraging to note that if women have access to information, most say they are able to use it. This suggests that interventions that improve access to information and make such access more equitable will have positive impacts in terms of adaptive behavioral changes.

As long as women continue to be much less aware than men of many practices that can enhance their resilience to a changing climate, investments in climate and agricultural adaptation will underperform and not reach their potential.

FURTHER INFORMATION:

Twyman J, Green M, Bernier Q, Kristjanson P, Russo S, Tall A, Ampaire E, Nyasimi M, Mango J, McKune S, Mwongera C, Ndour Y. 2014. Gender and Climate Change Perceptions, Adaptation Strategies, and Information Needs: Preliminary Results from Four Sites in Africa. CCAFS Working Paper No. 83. Copenhagen, Denmark. Available at <http://ccafs.cgiar.org/publications/adaptation-actions-africa-evidence-gender-matters#.VGO54ocg25A>

Tall, A., P. Kristjanson, M. Chaudhury, S. McKune and R. Zougmore, 2014. Who gets the Information? Gender, power and equity considerations in the design of climate services for farmers. CCAFS Working Paper No. 89. Copenhagen, Denmark. Available at: <https://ccafs.cgiar.org/publications/who-gets-information-gender-power-and-equity-considerations-design-climate-services#.ViaJ9ytknpo>

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This work was implemented by the International Food Policy Research Institute (IFPRI) as part of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) under the project "Increasing Women's Resilience to Climate Change". This publication has not been peer reviewed. The views expressed in this document cannot be taken to reflect the official opinions of IFPRI, CGIAR or Future Earth.

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