RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CGIAR CCAFS

Info Note

Gender differences in climate change perception and adaptation strategies: A case study on three provinces in Vietnam's Mekong River Delta

Findings from a gender case study

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Key messages

- All participants in the study have witnessed a change in weather in the last 10 years. Most notably, temperatures have increased and become more variable while precipitation has decreased and become more variable.
- Perceptions of climate change in Vietnam do not appear to be individual but rather disaggregated at the household level (at the most finite level) or possibly at the landscape level.
- Perceived impacts of stress by male and female respondents are quite similar, which may indicate that stress is managed at the household level rather than at the individual level.
- Further gender research in Vietnam should focus on adaptation and coping strategies during climate change stress as it appears that gender differences are most present in this area.
- To cope with climate change issues, farmers need: (1) rice varieties that are tolerant to stresses such as heat, drought, and salinity; (2) pest management training; and (3) crop production management training.
- Challenges related to climate change faced by individual households are likely to be the same challenges as their neighbors. Thus, future climate change studies in Vietnam should also include spatial analysis.

This brief summarizes the findings of a project output for the Policy Information and Response Platform on Climate Change and Rice in ASEAN and its Member Countries (PIRCCA), being implemented by the International Rice Research Institute (IRRI). The report focuses on the results of the survey conducted in the first half of 2015 on climate change perception and adaptation strategies of male and female farmers in three selected provinces across the Mekong River Delta (MRD) region in Vietnam: An Giang, Bac Lieu, and Tra Vihn.

The survey gathered information on current climate change perceptions and adaptation strategies and gaps between the identified male and female respondents.

Survey Location and Methods

A total of 214 farm households were selected to be part of the climate change perception and adaptation strategies study. The husband and wife of each household were separately interviewed, which brings the number of respondents to 428 (214 pairs). The surveys were carried out by IRRI's local partner in Vietnam, the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD), in seven districts located in the three provinces.

Geographic selections for this study were based on a priori knowledge of areas facing climate change issues. This criterion was used in the selection of provinces, districts, communes, and villages. Once the villages were identified, a list of farmers with at least 10 years of farming experience was prepared for each commune.

Male and female respondents during the project orientation.

Survey participants were then selected using a stratified random sampling procedure with equal numbers of respondents from each village.

Results

Climate Variability

Of the 214 surveyed households, all male and female farmers reported that they had noticed changes in the weather in the last 10 years. This result is in support of Lambrou and Nelson (2013) who received the same response from Indian farmers reporting change over a 40-year period. When asked specifically about changes in temperature, nearly all respondents, male (92.1%) and female (85.0%) alike, reported a perceived increase in temperature.

The data suggest that perceptions of the average temperatures are higher and there is potentially more variability in temperatures. Results also showed that respondents perceived colder temperatures during the cold months (18.2% for males and 19.2% for females) and hotter temperatures during the hot months (37.4% for males and 50.9% for females) as well as many irregular changes in temperature.

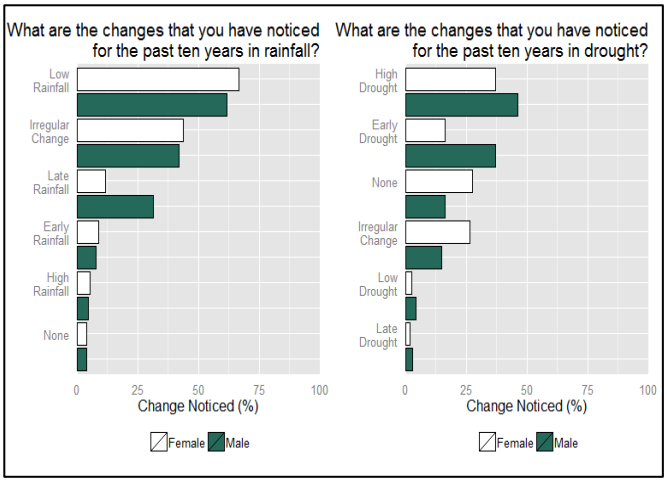

Figure 1. Perceived changes in precipitation and drought during the last 10 years in the survey areas.

On the average, male and female respondents reported a decrease in precipitation. Approximately 31% of the males also perceived rainfall coming later in the season. Reports indicated that the most significant change in perception observed was low rainfall. Similarly, males and females had compatible perceptions on drought. High drought was most perceived, with approximately half of the respondents noting that they had experienced high drought.

Nearly 40% of the male respondents also reported early drought. Ninety-one males and 66 females reported high drought to be the most significant change in the last 10 years. The responses to changes in precipitation and drought are in agreement with one another and suggest that low precipitation is of concern to many respondents in southern Vietnam. In further agreement, the respondents also reported less flooding in the last 10 years.

Sea-level rise does not seem to be a major concern to the respondents: 42% of the male respondents and 37% of the female respondents reported no change in sea-level rise in the last ten years. The responses on sea-level rise were similar between males and females. In fact, all responses regarding climate variability were similar between male and female respondents.

There is slight variation in responses between male and female respondents in regards to what causes climate change. Male respondents reported that climate variability is due to humankind and non-humankind activities at 33% and 44%, respectively, while female respondents reported 41% and 43%, respectively. Female respondents were 8% more likely to report humankind activities as drivers of climate change. Regardless of this difference, there appears to be a consensus among the respondents that temperatures are increasing and becoming more variable, precipitation is decreasing, and sea-level rise is not presently a concern in their respective regions.

Climate-related Stresses

Both male (66.4%) and female (67.3%) respondents reported heat stress to be the climate stress most present in their area. Similarly, drought was reported as the second highest observed stress in each respondent's area, followed by salinity and flooding. When respondents were asked which stress was most important or most prominent in their areas, the most common response was salinity. Even though heat and drought were identified as the major stresses present in the area of the respondents, stress associated with salinity was reported to have the greatest effect on their areas. This observation was reported by 35.0% of male and 40.6% of female respondents. Storms and sea-level rise were rarely reported as observed weather stresses.

Respondents also reported that livestock production was affected by stress. The major effect reported was in the increase in disease incidence. The most commonly reported livestock raised were cows and pigs among 55 and 34 households, respectively. The effect of climate stress in aquaculture is unknown in this study because only few respondents engage in aquaculture.

A total of 123 (57.48%) male and 105 (49.06%) female respondents reported that climate stress has affected irrigation on their farms. Based on an open-ended question, the most reported effects on irrigation were shortage of water and salinity contamination. The most commonly reported irrigation source was canals (85.70%). Among all the respondents, only five identified new sources of irrigation in the farm after stress. The new sources mentioned include public wells, dikes and gates.

Survey interview with a male farmer-respondent.

Impacts of climate stress

Respondents were asked to identify the impacts of climate stress on rice production. Low yields were the most commonly stated impact for both males and females, with 66.35% of male and 68.22% of female respondents reporting it.

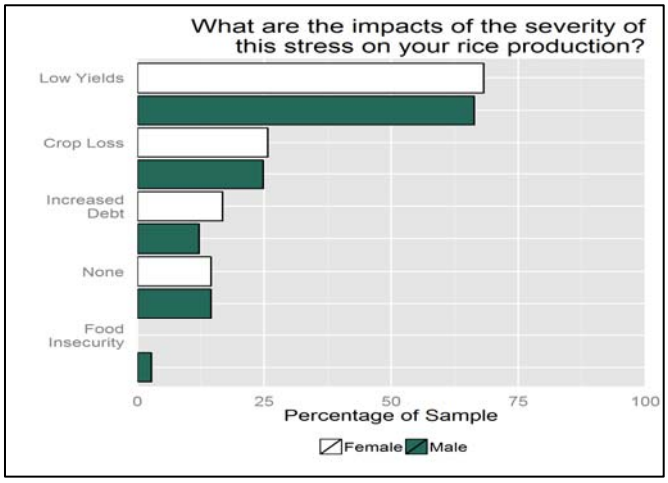

Figure 2. Reported impacts of climate stress on rice production.

Other reported impacts include crop loss and incurrence of debt. Respondents were also asked if there were noticeable changes in individual stresses on male and female household members as a result of climate stress. The responses were nearly identical for all four scenarios: (1) male perception of male stress; (2) male perception of female stress; (3) female perception of male stress; and (4) female perception of female stress. Generally, male respondents perceived more health problems for both male and female household members. Female respondents, meanwhile, perceived increased anxiety of male and female household members. The similarities of responses among males and females may indicate that stress is managed at the household level rather than at the individual level.

Institutional Support

Another objective of the study is to investigate the existing institutional support extended to the respondents during stress. The types of support included in the inquiry were housing support, relief goods ration, credit support, health insurance, training on new rice technologies, and support on farming activities. The findings reveal that majority of the institutional support that was investigated in this study was not widely used by the respondents. For instance, the only institutional support that had a large recognition from male and female respondents was on farming activities (57.9% for male and 42.5% for female).

On their expectation of institutional support during stress, the most common responses include improved rice varieties, training on production techniques and climate change adaptation, access to low-interest credit for inputs, better access to markets, and price support for paddy produced in the farm to be sold at a higher price. Respondents also reported non-farm support such as access to rice for home consumption and health insurance.

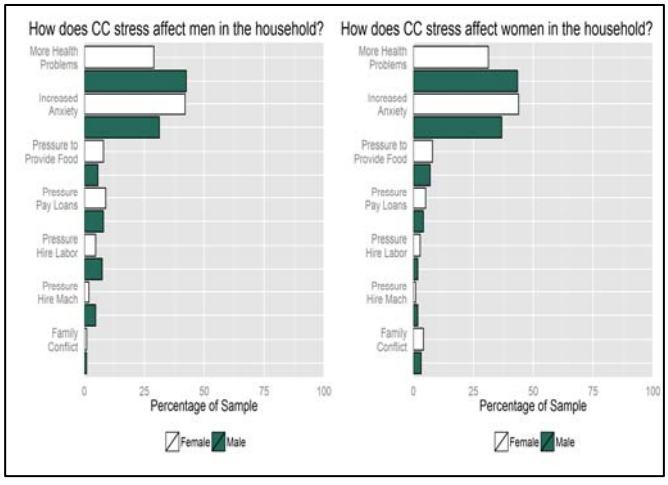

Figure 3 . Perceived impact of stress on household members.

Respondents were asked about their access to information on cropping patterns and agronomic practices. Most of them stated that they have access to these information, and information on weather conditions are most common.

Adaptation and Coping Strategies

Respondents were asked what they did as individuals to cope with the negative impacts of climate stress. For many, "do nothing" was the most mentioned strategy in dealing with stress (56.1% for male and 38.3% for female). Aside from "do nothing", male respondents also cited other strategies such as reducing household consumption of food (26.6%), availing of bank loans (21.5%), and working more (21.5%).

Meanwhile, female respondents reported reducing household consumption for food (30.4%), availing of banks loans (27.6%), use of savings (22.0%) and working more (21.0%) as adaptation strategies. The results of the inquiry on adaptation and coping strategies introduce major differences in male and female perception. An example of such disparity is the use of bank loans between male and female respondents (21.5% vs 27.6%). It is also possible that the coping strategies within the household are not equally known to all members.

A greater consensus was observed between genders regarding the changes in farming activities that male and female intend to do in case of a climate stress. For male respondents, "no change" (45.8%) is still the most common strategy reported. Female responses reported "no change" (39.3%), second only to changing rice variety (46.7%). Male respondents reported changing rice variety second most frequently (44.4%). Change of cropping pattern was also cited by male (19.6%) and female (15.4%) respondents, and many respondents also reported leaving lands to fallow. Other adaptation strategies such as changing to livestock production, diversifying crops planted, growing dry fodder crops, and relocating crops were rarely mentioned.

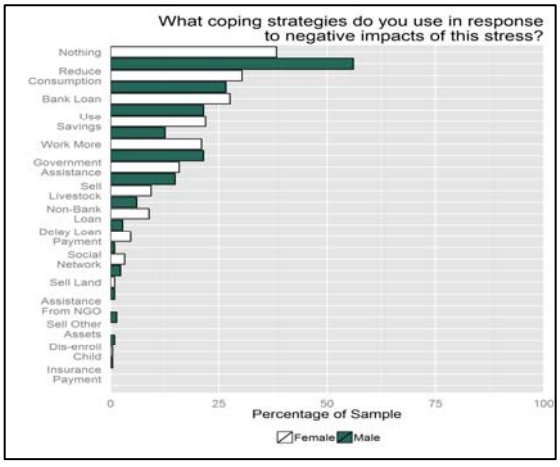

Figure 4. Individual coping strategies by gender.

As discussed, "change rice varieties" was reported to be the most common option of change in farming activities that is done in times of stress. When asked on factors that influence the decision to change their commonly used rice varieties, both male and female respondents had almost similar responses.

The influencing factors in the adoption of other rice varieties for males were: good yield (78.0%); stress tolerance (53.3%); market demand (49.1%); physical factors such as suitability to soil and climate conditions (35.0%); and farm harvest price (26.6%). For the female respondents, the influencing factors mentioned were: good yield (79.4%); farm harvest price (41.1%); market demand (41.1%); stress tolerance (34.6%); and physical factors such as suitability to soil and climate conditions (29.9%).

In terms of changing the cropping pattern (i.e. what to plant), both male and female respondents reported that physical factors such as climate and soil conditions are the most important factors in consideration. In particular, the influencing factors in the changing of commonly used cropping pattern for males are: physical factors such as suitability to soil and climate conditions (55.1%); market demand (25.7%); recommendation of government (25.2%); and good yield (21.5%). For the female respondents, the influencing factors are: suitability to soil and climate conditions (46.7%); good yield (37.9%); selling price (34.1%); market demand (25.2%); and amount of capital (22.0%).

Conclusion

Data for this study were gender disaggregated to investigate whether there was gender disparity in climate change perceptions or adaptation and coping strategies. The data do not provide any strong evidence that a gender gap exists in climate change perception. The largest variability in responses comes from the individual coping and adaptation strategies.

Some interesting findings from this study are:

- The respondents have witnessed change in weather in the last 10 years. Most notably, temperatures have increased and become more variable while precipitation has decreased.
- The expressed needs of farmer-respondents are rice varieties that are heat-tolerant, drought-tolerant, and salt-tolerant; pest management training; and crop production management training.

The findings of the study affirm that there is no gender imbalance in terms of awareness and understanding of climate change issues between male and female rice farmers in the MRD. However, this study finds differences in the coping and adaptation strategies between male and

female. The empirical evidence of this study supports the anecdotal evidence witnessed through several field visits conducted for the study. The following are the probable reasons for these findings:

- The term 'climate change' is not so popular among farmers in the study areas. Climate change became more comprehensible when it was represented by proxy questions relating to changes in temperature, precipitation, etc. Farmers recognize changes in climate through actual experience in agricultural activities. In addition, the wide coverage of climate issues in the mass media such as television, radio, and newspapers in the MRD and other rural areas, has helped in disseminating climate and weather information.

- The findings of the study that there are no gender differences in climate change perceptions are consistent with other gender-focused climate change studies (see Lambrou and Nelson, 2013).

- Climate change impacts indiscriminately across landscapes but not all individuals within these landscapes are equally equipped to adapt to climate change. Similarly, challenges related to climate change faced by individual households are likely to be the same challenges as their neighbors but each household and individuals in each household are likely to have different adaptation abilities and strategies.

Therefore, future studies on climate change perceptions in Vietnam should provide more emphasis on landscape-level impacts of climate change and less emphasis on gender issues that do not appear to exist in climate change perceptions.

Future gender research in Vietnam should focus on adaptation and coping strategies during climate change stress as it appears that gender differences are present in this area. Finally, the effect of household income on climate change perceptions and adaptations should be investigated in future research.

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Research led by

The information presented here is the result of an analysis of the survey conducted in the first half of 2015 on climate change perception and adaptation strategies of male and female farmers in the selected provinces in Vietnam for the PIRCCA project. The PIRCCA project is one of the trial projects funded under Flagship 4. PIRCCA has an overarching goal to enable policymakers in ASEAN countries to make informed decisions on (1) food security policies focusing on the supply and availability of rice; (2) climate change adaptation policies; and (3) gender action plans.

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