Research article

Shedding Light on the Gender Gap in Cambodia's Agriculture Sector - A Case of Agricultural Cooperation in Kampong Cham Province

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Abstract This study deals with the status of women who engage in agricultural practices in Kampong Cham Province, Cambodia. Specifically, it dissects the selection processes to determine which gives participant farmers access to training opportunities provided by an international non-governmental organization. The research was conducted to provide gender-disaggregated data while elucidating the gender gap that exists in opportunities for equal participation in and access to training and women's role within Cambodia's agricultural sector based on data analysis for the baseline survey and key informant interviews. This study concludes that there are specific gender roles, norms and biases, either visible or invisible, embedded and/or expected in the local community. These traits were manifested by participant farmers as well as officers who were responsible in selecting farmers. Individual interview revealed that gender norms regarding men as the head of the house and illiteracy were mentioned as two possible factors hindering women from participating in agricultural training, but when leaders who were responsible in selecting farmers were mindful about equal gender ratio, they could bring equal numbers of female participants. In order to ensure gender equality in access to skills development opportunities in the agricultural sector, trainings should focus on building effective program, and optimizing and acknowledging current female farmers' roles and contributions in the agricultural and development sector of the rural economy.

Keywords gender equality, sustainable agriculture, rural development

INTRODUCTION

A global commitment, Sustainable Development Goal No. 5, is a stand alone goal to end all kinds of discriminations against women and girls and also to empower them (United Nations). Similarly, Cambodia's 5-year strategic plan (Neary Rattanak) is designed to support women to access and claim their right to fully participate and benefit from economic and social development, and also participate as decision makers. Agricultural extension services play an essential role in agricultural development, poverty reduction, and food security (Feder et al., 2011), but women often lack the resources and opportunities they need, and face more severe constraints than men in accessing productive resources, markets and services (Raney et al., 2011). Agricultural extension services are particularly needed by smallholder farmers in developing countries as they usually have low levels

of education and limited access to information and resources to enhance their capacity and level of productivity.

The project on "Promoting Sustainable Agriculture Conditions for Poverty Reduction in Kampong Cham Province" is currently being implemented by an international organization based in Japan. The target populations are more than 25 local agriculture extension officers and 1,500 local farmers in the region where agro-chemical and their improper application is prevalent. According to FAO statistics, Cambodia's total fertilizer use increased from 38,693 tons in 2005 to 134,053 in 2018. The project was designed to alleviate farmers' poverty and improve their livelihood conditions by intoroducing and disseminating sustainable agricultural practice. Throughout the project, participant smallholder farmers have learned the techniques of sustainable agriculture, including composting, pellet composting, pest and disease management so that they can reduce the use of synthetic products which economically burden them and are harmful to the human bodies and environment. In the third year of the project, they will gain techniques on the collecting and shipping process so that they can sell their safer products with added price. The objectives of this study are 1) to elucidate the situation of the women's participant to the trainings that are to eradicate the poverty and bring knowledge and technique on sustainable agricultural practice and analyze the participation rate and the cause of it, and 2) to conduct analysis based on the interview over women's role and contribution to the agricultural management, which includes the management of the marketing, and the needs of the training.

METHOLODOGY

This study adopted both quantitative and qualitative approaches. The baseline survey of 500 principal farmers gathered in 2018 were examined in order to recognize the gender disaggregated data and elucidate the situation of the women's participant to the training. Additional key informant interviews with 40 individual female farmers and ministry officers were conducted in 2019 to complement the information which was missing from the original baseline survey. The interview was structured in accordance with the gender analysis, which examines how the roles, rights, and responsibilities of men and women interact and how that affects outcomes (Doss, 2013). The semi-structured questions were particularly focused on intersection between gender and recruitment, participation and women's roles and their needs in the region: 1) the process of how they were selected, 2) gender roles in agricultural practice, what are their everyday work in the field and at home, 3) does the training provided by the organization meets the needs and requests of women. Analysis included looking at the gender norms and the implications of those relationships on women's ability to participate in the training on sustainable agriculture. Interviewees were the participants and beneficiaries of the three-year project who know what is going on in the field.

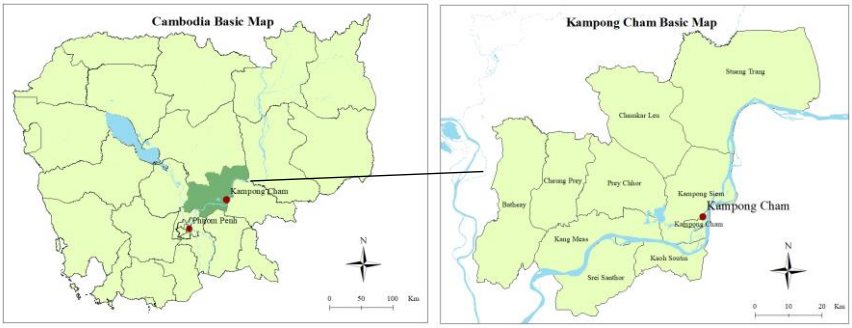

Fig. 1 Location of the study area of Kampong Cham Province and 10 districts

The target population was selected across nine districts in Kampong Cham Province that is Prey Chhor, 8; Batheay, 6; Srei Santhor, 3; Cheung Prey, 8; Kampong Siem, 5; Kang Meas, 2; Kaoh Soutin, 1; Stueng Trang, 5; and Chamkar Leu, 2. Farmers were selected based on availability and willingness to take part after the training.

RESULTS AND DISCUSSION

The Status of Female Participant's Rate

After the initiation of the project in 2018, a baseline survey was conducted targeted 500 participating farmers and was examined as gender segregated data. The baseline survey shows that the principal farmers consisted of 333 male participants (67%) and 167 female participants (33%). Out of 500 particicpants, 119 male participants (36%) and 59 female participants (35%) answered that they belong to some agricultural group in their villages. The opportunities provided were geographically varied as only four female farmers belong to compost and safe vegetable groups in Kampong Cham District, whereas nine female farmers and 27 male farmers belong to various agricultural groups in Stueng Trang District. The average size of their agricultural land is 1.07ha. The educational background was categorized by 1) Never been to school, 2) Primary school, 3) Secondary school, 4) High school, 5) College, 6) University. For all age groups, on average, men have a slightly higher educational background (2.43) whereas women's average is 2.23. According to the age group, both men and women hold particularly lower educational backgrounds in their 40s and 50s, particularly in their 50s (Female: 1.86, Male: 2.33). This can be from the fact that they were directly effected by the internal conflict within Cambodia during the 1970s where people's educational opportunities were deprived. Cambodia's gender gap in adult literacy rate is significantly improved in recent years, but the gap remains for elderly populations (UNESCO, 2015). The participants' age varies, but the average age of male participants is slightly higher than female participants (Female: 45 and Male: 47). The baseline survey didn't specify whether the household is either female or male. Hence, the income gap between male and female participants is not obtained. When they were asked what techniques they need, female farmers were particularly interested in seeds (48%), organic fertilizers (47%), planting (35%), and marketing (28%), where as male farmers showed their interests in organic fertilizers (47%), seeds (44%), planting (30%), and marketing (27%).

Fig. 2 Technical training on pest and disease management (farmers making bio-pesticide)

The first training for 500 principal farmers was conducted from December to March 2018 with the theme of "Improvement of Soil Fertility". It was a one-day training held in two different communes from 8:00 a.m. to 4:30 p.m. The venue was optimized in each district such as model farmers, Department of Agriculture offices, or community space. The training covered the role and function of soil in agricultural land, compost, pellet compost, and liquid fertilizers, and was led by trained ministry officers. The training included a demonstration on how to make compost and liquid fertilizers. The second training for the same principal farmers was conducted from January to March 2019 with the theme of "Pest and Disease Management" with adjustment of the time for the morning session to cocomplete earlier so that female farmers can return back their home for lunch preparation. The training focused on Integrated Pest Management (IPM), proper use of chemical fertlizers, and technical and practical knowledge about pest and disease control. The training also included a demonstration on how to make bio-pesticide (Fig. 2).

According to Table 1, the participating numbers of women were disproportionately small compared to that of men. However, in Cheung Prey, Kampong Cham, Kampong Siem Districts, the

female farmers were closer to half of the participants. In contrast, in Chamkar Leu District, the numbers of female participants were only 16% (Table 1).

Table 1 Numbers of principal farmers in the baseline survey conducted in 2018

District	Batheay	Chamkar Leu	Cheung Prey	Kampong Cham	Kampong Siem	Kang Meas	Kaoh Soutin	Prey Chhor	Srei Santhor	Stueng Trang
Male (%)	72%	84%	58%	54%	51%	72%	58%	69%	72%	74%
Female (%)	28%	16%	42%	46%	49%	28%	42%	32%	28%	26%

Source: Baseline Survey and List of Participants for Improvement of Soil Fertility in 2018

The individual interviews with the female farmers revealed how individual participants were chosen: 1) the specific individual participant was directly appointed by the local authority, or 2) the household of the participant was appointed by the authority, then a discussion was held within the house to designate the actual participant. Out of 35 participants interviewed, five answered that they were directly appointed by the authority. Four answered that the authority appointed their husbands. In the remaining 26 cases, participant selection was done within the family members based practical reasons such as availability and not on the notion that in a traditional gender role the important meetings and trainings are attended by men. Several farmers decided to rotate participation during the course of the trainings. One of the interviewees in Batheay said she was encouraged by the authority to rotate the participation when they are busy. The participants were mostly either husband or wife, but a few interviewees rotated the participation with their children. There were eight cases where husbands work in a non-farming sector, especially during the dry seasons from around December to May in Cambodia. One has gone to the Thailand to generate more income. 12 female farmers out of 35 participants came to the second training on "Pest and Disease Management" instead of their husbands or other family members. Hence, male and female participation is fluid, and the analysis of the baseline survey data may not cover the actual gender ratio as well as gender segregated data of the participants. The rate of the female participants was dramatically increased in some districts for the second training. For instance, in Cheung Prey, male participants in the first theme of the training, Soil Fertility, outnumbered the female, but at the second training on the theme of the Pest and Disease Management, female numbers significantly increased (Table 2).

Table 2 Numbers of principal farmers who participated in the second training in 2019

District	Batheay	Chamkar Leu	Cheung Prey	Kampong Cham	Kampong Siem	Kang Meas	Kaoh Soutin	Prey Chhor	Srei Santhor	Stueng Trang
Male (%)	-	85%	14%	60%	47%	58%	64%	66%	52%	63%
Female (%)	-	15%	85%	40%	53%	42%	36%	34%	48%	37%

Source: List of Participants for Pest and Disease Management in 2019

The key informant interview was also conducted with five chief ministry officers, consisting of one female and four males, who were responsible of selecting participant farmers. The officers from Cheung Prey and Kampong Siem noted their participants were selected by a Village Leader and a Commune Leader. For Cheung Prey District, the two leaders were sensitive to the gender ratio and tried to have equal numbers of male and female participants, although the officer himself was not aware of it. Similarly, a female officer in Kampong Siem wasn't aware of the gender neither ratio nor gender equality, but the leaders were. Prior to this project, both districts have provided some trainings on microfinancing and chicken raising specifically to female farmers. Evidently, the ratio of female participants was higher in those two districts compared to other districts (Table 1 and 2). The officer in Srei Santhor said he was conscious about gender equality and selected the participants simply based on people who are more actively engaging in agriculture, however, the female participant rate was relatively low in the two trainings. Additionally, the female participation rate was significantly low in Chamkar Leu District (Tables 1 and 2). A male

officer from Chamkar Leu answered that they appointed the household along with the Village Leader, and appointed the persons who actually do the farming and those are naturally males. Other noted from Chamkar Leu District that as much as they wish to include females, when they visited their houses, they usually ask their husbands who are the head of the house to respond to the officers. A male officer from Prey Chhor mentioned that females are relatively illiterate and they are not willing to join this kind of training. Gender norms regarding men as the head of the house and illiteracy were mentioned as two possible factors hindering women from participating in agricultural training, but when leaders who were responsible in selecting farmers were mindful about equal gender ratio, they could bring equal numbers of female participants.

The Roles of Female in Agricultural Practice and Access to Market

In this section, this paper will discuss about the roles and contributions of the female farmers in their agricultural practices in Kampong Cham Province. In details, the interview was conducted to study if there are any particular work that female farmers bear and also what kind of trainings are needed in the area. According to the key informant interviews with 35 farmers, specific gender roles exist in agricultural practices in the region. Most of the female interviewees answered that they engage in broad tasks such as soil preparation; preparing, making and applying the fertilizer and compost; sowing; collecting weeds; and drying rice after products are harvesting; and selling the products was largely taken care by women, whereas men engage in seemingly physically harder and mechanical tasks such as ploughing, harvesting, and spraying the pesticides. When they are raising the vegetables, female farmers bear more tasks including the harvesting. Most of the interviewees sell the products to the middle persons, and women are actively involved in the negotiation process. In the case of a single mother or a woman whose husband is disabled or working in the non-agricultural sectors, they employee other men and women to engage in their fields. Some of them bear more tasks than other women who work with their husbands. They tend to express more power than the other female interviewees, which was manifested by their use of phrases such as “male and female can do the same”, “there are no specific gender roles in agricultural field”, and “the training being provided by the organization will equally benefit both men and women”. On the other hand, women’s work in an agricultural field across the nine districts was xpressed in words such as “small” and “not too much”, due to the gravity of the physical workload.

At their households, all the female workers perform traditional gender roles: cooking, taking care children and livestock, or growing vegetables around the houses. The male officer in Chamkar Leu, too, generalized that house work is normally the work of women. Some of their husbands support the wife’s role in doing such tasks carrying water, cooking, taking care of children. Many of the interviewees were engaged solely in agricultural practice, but the interviewees also revealed that a few female participant farmers engaged in work outside of the agricultural field, such as working at a factory or crafting weed mattresses at home in order to seek the additional income for the family. However, according to the participants, women face severe constraints due to lack of knowledge and skills in a non-agricultural sector or their elderly age as factories or companies favour younger women as their employees. A study by Gender and Development of Cambodia in 2010 (Ministry of Women Affairs, 2014) noted that men perceive that they should fulfill the role as the head of the house, and women perceive normalizing male privilege. Consequently, women tend to see their capacity and power lower than men in the society. The interview showed that female farmers bear broad range of agricultural practices as well as domestic work, but some of them seen their ability lower than male partners, which may be based upon the traditional gender norms prevailing in the country.

Lastly, female farmers expressed concerns about the fixed marking price provided by middle persons. Some of them noticed that the selling price to the customer is a lot higher than the farmers’ sold price, but they see that there is no way that they can increase the value of it. Out of 35 interviewees, 20 expressed the need of the marketing skills. A female farmer answered that there seems to be no connection between the producer and the consumer because she sells it to a middle person. They want to build a strong relationship between the two. Building a relationship between

the producer and customer is a growing trend in agriculture throughout the world, and this can be promoted during the course of the project. Due to the low price that is given from the middle persons, two female farmers tried to sell the products in the market, but they faced multiple difficulties ranging from finding a spot in the market place to selecting a suitable price and attracting regular customers. One of them expressed the concern over transportation as she uses her own motorbike that she cannot carry many products at one time. The access to the local market was also depending on the geographical location of the marketplace versus where they live. The above two female farmers in Kang Meas and Kampong Siem Districts were able to access the local market because it is accessible from their houses. The marketing skills will benefit women greatly because majority of sellers in the market consist of female workers in Kampong Cham Province. Participating female farmers shared the information and techniques with husbands or other family members, and what they have learned is being practiced at their farmland. However, they are also seeking other specific trainings such as raising chickens, ducks, cows, fish, and crafting that they can do while doing the housework at home.

CONCLUSION

The knowledge gained in this study can be summarized as follows. First, regarding the trainings on promoting sustainable agricultural conditions for poverty reduction, the 2018 baseline survey showed that participating male farmers significantly outnumbered the female farmers. However, the participation in the second training revealed that the ratio of male and female participating farmers is fluid as some of them rotate the participation in accordance with their availability. In two districts, female farmers outnumbered the male farmers in 2019, where the persons who directly involved in the election process were particularly aware of having the equal numbers of men and women. Interviews lso revealed the gender biased selection methods by the officers who were responsible in selecting farmers at the initial stage. Secondly, female farmers bear broad range of agricultural practices, even though some of them seen their ability lower than male partners, which is based upon the traditional gender norms prevailing in the country. Female farmers would come to the training if the content is related to their regular work that they do in the field, such as soil preparation, pest and disease management, and the marketing. It is also a key to design the timing, period, and venue of the training when female farmers can participate, as their reproductive work at home is widely normalized. Additional training and/or awareness raising may be necessary for the local authorities who are responsible in selecting farmers in order to disrupt the gender biased selection process. The interview with the female farmers mentioned the higher needs of the training in marketing in the region, and some of the challenges they face. Their needs are also varied beyond the basic agricultural techniques. Therefore, in order to reduce the inequality for female farmers in getting agricultural information and knowledge, building an effective program based on their actual regular agricultural practice is required.

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