Gender Inequality in Agriculture: A Household Survey of Farmer Organisations in Four Provinces[1]

This article presents a descriptive analysis of the findings of a household survey conducted by CDRI in 2011 as part of a study to examine the benefits and constraints of participating in farmer organisations for female-headed and male-headed farming households. According to our survey, female-headed households represent about 26 percent of all farming households in the study areas (CDRI forthcoming)[2]. The study therefore has direct implications for these households and the general challenges women farmers face. Given its dominance in the agriculture sector and government policy priorities, the study focuses on rice production. Livestock farming is included in the scope because it is a common activity of Farmer Organisations (FOs) in Cambodia.

Background and Rationale

Cambodia's economic growth is narrowly based, relying on four main pillars – garments, tourism, construction and agriculture. Although Cambodia has undergone dramatic structural transformation from an agrarian subsistence-based economy, the economy is still highly dependent on agriculture, which contributes just over one-third (around 34 percent in 2010) of GDP (NIS 2011). Despite its moderate growth rate compared to industry and service sectors, agriculture remained staunchly resilient to the negative impact of the global financial crisis in 2009, serving as a crucial social safety net and economic buoy that saved people from even greater hardship and prevented GDP growth from dipping into negative figures.

Agriculture has strong potential to be an engine of growth for Cambodia's socioeconomic development, engaging around 49.5 percent of the employed labour force in 2011 (NIS 2012). The sector is characterised by rural household ownership of small parcels of land: in 2009, 46.9 percent of households had agricultural plots of less than one hectare. Further, data from the 2008 Census indicates that 66.1 percent of employed women (aged 15 to 64) are engaged in subsistence crop farming, compared with around 60 percent of employed men (NIS 2009).[3] Therefore, developing the agriculture sector would be a far-reaching and effective way of improving rural living standards, particularly for women.

To realise the national vision of agriculture sector development, the government recognises and prioritises the promotion of smallholder farming and the establishment of FOs as key to livelihood strategies, rural economic development, and poverty alleviation (Chea 2010). FOs are expected to enable members' greater access to information, inputs and techniques that help improve smallholder agricultural productivity, and to organise collective access to input and output markets so that small-scale rural producers can take advantage of economies of scale.

Overview of Farmer Organisations in Cambodia

In concept and in practice, FOs as a means for achieving agricultural development, food security and poverty reduction at grassroots level have a long and varied history in Cambodia. Couturier *et al.* (2006) report that about 13,017 FOs had been established by 2005,over 60 percent of which had been formed since 2000. Most FOs in Cambodia have less than 30 members, and only 12 percent have more than 100.

Farmer organisations are established to enhance rural development through capacity building and collective action, and are based on the principles of volunteerism, self-help, self-reliance, democracy,

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[2] While ideally the benefits and constraints of FOs for women in male-headed households should also be investigated, the survey design used in this case study meant that such an analysis was not possible.

[3] Author's calculation based on data generated from the 2008 National Census.

equality, equity, solidarity and empowerment (Nou 2006). Most Cambodian FOs are formed and technically and/or financially supported by NGOs or government agencies, whose main roles are to improve access to credit through group saving schemes, group businesses, capacity building on agricultural techniques, and community development (Couturier *et al.* 2006).

Initially, some FOs worked with only the poorest farmers, but this approach was not successful because those farmers lacked the necessary productive assets, capital, literacy and management skills to put into practice what FOs provided them. Outsiders, for example, government, NGOs or supporting agencies, initiated majority of the FOs; none of the sample FOs were self-established, whereas more than 60 percent were reportedly set up by support agencies. The objectives of FOs differ according to support agencies' various agendas, but the provision of informal savings and rotating credit schemes is the common aim.

Data and Methodology

The household survey was conducted in 2011 in four provinces – Battambang, Kampong Thom, Kampot and SvayRieng. The survey sample comprised 699 households – 330 FO members and 369 non-FO members. In addition, qualitative information was gathered from key informant interviews (KIIs) and focus group discussions (FGDs) to verify the descriptive analysis of the survey findings. We compared the benefits and drawbacks of FO membership for female and male-headed households. Although it is not possible to study individual male and female household members, studying the effects of FO membership on female-headed households can help identify gaps in creating an enabling environment for promoting gender equality, women's empowerment and more meaningful participation.

Benefits of Farmer Organisation Membership

FO members commonly benefit from group savings, agricultural techniques training, and teamwork. The survey data shows that the top five FO activities for both male and female household heads are savings and credit schemes, livestock husbandry techniques, fertiliser trade, crop husbandry techniques and vegetable growing, and seed production. There are no marked differences between male and female-headed households' perception of FOs in terms of trust, satisfaction with benefits, and teamwork.

Access to credit

Members mainly use credit from FOs to invest in farming. In rural areas, smallholders are increasingly forming self-help groups where members contribute savings to create a communal fund from which they can borrow[4]. Credit in self-help groups tends to be limited to members' investment in farming, including in improved inputs such as livestock feed, fertiliser and seed. Some groups, however, are capable of creating credit services to meet members' immediate needs as well. Applying for a loan is straightforward in terms of time, eligibility and paperwork, and interest rates are relatively low compared to those charged by MFIs.

> We were able to get a loan quickly when our children were sick. For example, once I had no money to register my child at school. I then tried to borrow [money] from someone [but] they would not lend me any. I appealed to the group and the members decided to lend me some money because they understood my situation. (FO female member, Battambang)

The average FO loan extended to members is around 306,000 riels (Table 1). This is nowhere near enough for farmers to expand agricultural production. The minimum amount that would make a useful difference to farm productivity and farm income was not captured by the household survey, but some farmers said during the key informant interviews that they would need around two million riels. Nonetheless, poor farmers still find FO loans useful because the loan conditions

[4] Self-help groups are the most common type of FO in Cambodia and typically involve less than 30 members; the two other main types are farmer associations (more than 30 members) and agriculture cooperatives (more than 30 members and registered at the Ministry of Agriculture, Forestry and Fisheries). Due to time and resource limitations, the study uses FOs as an umbrella term to represent all three organisation types.

Table 2: Farm Production Training Accessed by FO Member Households

Training services/instruction	Number of HHs	Total (% HHs)	FHH (%FHHs)	MHH (%MHHs)
Rice/vegetables				
- Disease and pest control	221	66.97	60.24	69.23
- Planting techniques	243	73.64	63.86	76.92
- Improved varieties and seed selection	236	71.52	68.67	72.47
- Chemical fertiliser application	186	56.36	49.40	58.70
- Composting and organic residue management	234	70.91	72.79	70.45
- Irrigation and water management	176	53.33	43.37	56.68
Livestock raising techniques				
- Breed improvement	212	64.24	56.63	66.80
- Housing	232	70.3	66.27	71.66
- Disease control	215	65.15	59.04	67.21
- Feed and nutrition	207	62.73	60.24	63.56

Source: Authors' calculation based on CDRI 2011 survey data

are not stringent. Some FOs even offer interest-free credit on short-term (repaid over one month or less) loans.

Table 1: FO Members' Average Loan by Sex of Household Head

	Total HHs	FHHs	MHHs	t-test
Number of households	330	83	247	-
Average loan (riels)	306000	208000	339000	- 1.4040

Source: Authors' calculation based on CDRI survey data (forthcoming)
Note: Because FO members have to rotate loans, female and male-headed households do not necessarily access loans at the same time; USD1=4000 riels.

Although not statistically significant, the average loan of 208,000 riels accessed by female-headed households is around 61 percent of that extended to male-headed households, and is well below what is needed to expand agricultural production. Further, fewer female-headed households (35 percent) than male-headed households (41 percent) take out loans for investment in crop production. This is because more women than men use FO loans for purposes other than agriculture.

Agricultural extension services and agricultural production

Although FO members were unable to understand everything taught them by agricultural extension officers, they have gained some practical knowledge on agricultural techniques such as how to make compost and use manure, plant green manure (cover) crops, grow vegetables, and raise poultry (chickens, ducks) and small livestock (pigs). Focus group discussions also noted that some FO members get training services from support agencies, while other FO members get assistance from both support agencies[5] and the Provincial Department of Agriculture.

> The Provincial Department of Agriculture offers training courses on agricultural techniques to the members of this FO at least every three months. (Agricultural extension officer, Svay Rieng)

[5] Support agencies are NGOs that provide financial and technical support to FOs. Some FOs are assisted either by NGOs or the PDA, and some are helped by both NGOs and the PDA, especially agricultural cooperatives because they come under the mandate of PDA.

Table 3: Rice and Livestock Production for FO Member Households

	Both	Female	Male	t-test
Land for rice (ha)	1.60	1.10	1.80	-3.04
Rice yield per year (kg per ha)	1958	1783	2015	-1.57
Rice revenue per year (0000 riels per ha)	206. 170	169	219	-2.22
Rice input costs* per year (0000 riels per ha)	62	61.77	61.19	-0.018
Rice gross margin per year (0000 riels per ha)	162.53	124.85	174.93	-1.89
livestock revenue per year (0000 riels)	465.12	336.37	506.35	-1.85
livestock cost per year (0000 riels)	75.23	34.44	88.19	-0.93
Livestock net revenue per year** (0000 riels)	389.89	301.92	417.85	-1.89

Source: Authors' calculation based on CDRI survey data (2011)
Note: USD1=4000 riels; * does not include labour costs; ** Net revenue = revenue – input cost

The farmer training programmes most highly accessed by FO members are planting techniques, improved crop varieties, seed production, composting and organic residue management, and livestock and poultry housing. Apart from instruction on composting and organic residue management, notably fewer women than men directly benefit from agricultural techniques training (Table 2).

Although not statistically significant, the disparity between male and female-headed households' access to agricultural extension services may be the result of direct albeit inadvertent discrimination by agricultural extension workers against female household heads. In addition, female-headed households have lower crop yields and lower livestock revenues compared to male-headed households, which also own relatively big parcels of farmland (Table 3).

One possible explanation for female-headed households' higher participation in composting and organic residue management training reported by provincial extension officers is that women do not have enough time to participate in all FO activities and these simple techniques are related to ordinary daily household chores.

Female-headed households' rice revenue is lower than male-headed households' rice revenue, and the difference is statistically significant at 5 percent level though female and male-headed households have comparable yields (see also Table 3). One reason for this may be that male-headed households' average cultivated rice land is significantly larger than that of female-headed households. Taking gross margin[6] into account, we find that female-headed households' rice production is less efficient than male-headed households' rice production, and the difference is statistically significant at 10 percent level. This suggests that female-headed households could potentially increase agricultural production if they make better use of farm production services and have better access to loans to improve their farming. Regarding livestock production, female-headed households' livestock net revenue is significantly lower than for male-headed households, though the difference is not statistically different.

Challenges Faced by Farmer Organisations

The household survey revealed a number of factors that inhibit FOs' effectiveness as a mechanism for improving productivity and linking smallholders to market chains (Table 4). The first is lack of capital, which directly relates to FOs' sustainability. The primary function of

[6] Gross margin = (revenue – input costs)/cultivated area

Table 4: Perceptions of Constraints to Farmer Organisations (percent)

	All HHs	FHHs	MHHs
Shortage of credit	82.73	74.7	85.43
Lack of farmland*	79.7	81.93	78.95
Illiteracy	79.39	80.72	78.95
Lack of external support (access to information and services)	70.61	65.06	72.47
Impractical knowledge and techniques provided by supporting agencies	68.79	71.08	68.02
Limited knowledge about planning	63.94	61.45	64.78
FO does not respond to members' needs	62.12	61.45	62.35
Improper enforcement of internal regulations	61.21	56.63	62.75
Lack of good leadership	51.82	48.19	53.04
Poor group structure	50.3	49.4	50.61
Lack of motivation to join collective action	45.15	43.37	45.75
Jealousies among members	38.79	43.37	37.25
Poor book-keeping/financial management	36.36	37.35	36.03

Source: Authors' calculation based on CDRI survey data (CDRI forthcoming)
Note: * Some households find it difficult to apply techniques taught due to limited farmland

FOs in Cambodia is to extend credit, and that may depend on funding by NGOs or government agencies (Nou 2006). More male-headed households (85.43 percent) than female-headed households (74.7 percent) perceived shortage of credit to be a challenge.

The second problem for FO members is limited farmland. The slightly higher response from women reflects the fact that female-headed households' farm plots are smaller than male-headed household plots are. To make use of agricultural techniques learned from supporting agencies, FO households should own a parcel of agricultural land. Indeed, some FOs stipulate that members must have their own agricultural land. It is worth noting here that tenure security and land registration is a long-standing issue in Cambodia. Further, there is a link between legal land tenure and productivity as secure land ownership encourages households to invest in agriculture (Tong 2011).

Illiteracy is another constraint, especially for female-headed households. The survey identified that 49.40 percent of female and 80 percent of male household heads can read and write. Female household heads have an average of around three years of education compared to around five years for males. Despite disparity in educational attainment, the sample male and female household heads have a similar perception of literacy being a problem.

Although FO members can access information and farm production training provided by supporting agencies, more than half of FO households in the survey reported it was not very useful. There are likely to be differences between female and male perceptions of this constraint due to different farming tasks, though the survey did not set out to examine this factor. One possible reason why FO members rank this constraint quite highly may be that NGO-dependent FOs must show they have met their donors' agendas

(Couturier *et al.* 2006).

One of the most important challenges for FOs is gaining market access to enable economies of scale for small-scale rural producers. Around 80 percent of FO member households (male and female-headed) do not have collective access to input and output markets, which is a key service FOs are expected to provide. Focus group discussions and key informant interviews revealed that trust is not an issue. Farmers reported no marked differences between individual and collective marketing, but indicated that it is sometimes more difficult to coordinate collective access to market than to access markets on an individual basis. This is a worrying trend and possibly relates to members'criticisms that FOs lack external support and access to information, and their concern about poor group structure (see also Table 4).

Some Policy Implications for Promoting Decent Work in Agriculture

Although some FOs have developed their own credit strategies within and through their organisations, government must develop specific credit policies and services to ensure that female and male-headed households can equally access credit.

Farm production training is a vital input to FOs' efficacy, and is too important to be left to FOs and the agendas of their supporting agencies alone. The government needs to have a more effective training strategy that enables FOs to strengthen the services they provide to members. Such training should include information and technical help with planning, marketing and input-output market access. In addition, there should be practical training on all facets of farm production, and programmes should meet the specific needs of women in both content and delivery. Gender sensitive considerations include women's level of literacy, organising training around household responsibilities i.e. at times when women can attend, and childcare arrangements. Women are likely to require capacity building to encourage them to attend training and to enable them to acquire negotiation and basic business skills.

To multiply the potential benefits of FOs, it is necessary that they promote collective access to output and input markets. It is essential that women's roles in agricultural production are recognised and supported and that female and male-headed households are empowered to participate equally. This will in part catalyse the transition to small-scale commercial agriculture and help rural women move out of subsistence farming.

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