

Contents

I	Introduction	6
1.1	The Agricultural Sector.....	6
1.2	Agricultural Data Sources.....	6
1.3	Rationale for agricultural households in Kingdom of Cambodia	8
1.4	Key Definitions	9
II	Demographic and Social Profile of the Agricultural Household.....	10
2.1	Agricultural Population and Household Characteristics	10
2.2	Marital Status.....	15
2.3	Highest Education Successfully Completed and Literacy.....	16
III	Agricultural households Access to Productive Resources	20
3.1	Household Agricultural Labour Force	20
3.2	Agricultural Land	21
3.3	Improved technologies	26
3.4	Information and Communication.....	30
3.5	Credit.....	30
IV	Agricultural Households Livelihood activities.....	34
4.1	Income Sources.....	34
4.2	Crop Production	39
	Table 4.6 Crops Produced and Loss, by Sex of the Household Heads and Main Group of Crops: 2008	43
4.3	Agricultural Practices	45
4.4	Livestock.....	46
4.5	Fishing	49
4.6	Forestry	52
V	Status of the Agricultural Households Livelihood outcomes	54
5.1	Housing Conditions	54
5.2	Access to Safe Drinking Water	56

5.3	Sources of Energy.....	58
5.4	Sanitation	59
5.5.	Utilization of health care facilities	60
5.6.	Using mosquito nets	62
	Using mosquito nets Impregnated.....	62
VI	Conclusions	63
VII	Recommendations	63

List of Tables

Table 2.01	Agricultural Population in Cambodia, by Sex of the Population, by Zone: 2008	10
Table 2.02	Median Age of the Male and Female Agricultural Household Heads, by Zone: 2008	12
Table 2.03	Average Agricultural Household Size, by Sex of Household Heads, by Zone: 2008.....	13
Table 2.04	Active Agricultural Population, by Sex, by Zone: 2008	13
Table 2.05	Proportion and Sex Ratio of Active Agricultural Household Members and Dependency Ratio, by Sex of Household Heads, by Zone: 2008.....	14
Table 2.06	Proportion of Female Agricultural Household Heads to the Total Heads, by Zone: 2008..	15
Table 2.07	Proportion of Agricultural Household Members by Sex of the Household Heads, by Sex and Educational Level of the Members Successfully Completed, by Zone: 2008	17
Table 2.08	Number and Percentage of Agricultural Household Members 15 years old and over, by Sex of Agricultural Household Heads and Members, by Zone: 2008	18
Table 3.01	Number and Percentage of Skilled Agricultural and Fishery Workers in the Agricultural Households, by Sex of the Household Head and by Sex and Primary Occupation of the Members, by Zone: 2008	20
Table 3.02	Number of Agricultural Households Reporting Access to Lands, by Sex of Agricultural Household Heads and Number of Used Plots, by Zone: 2008.....	22
Table 3.03	– Average Land per Agricultural Household Area by Sex of Agricultural Household Head, by Zone: 2008.....	24
Table 3.04	Percentage of Bought Plots, by Sex of the Agricultural Household Heads, by Zone: 2008	26
Table 3.05	Percentage of Irrigated Plot Area, by Sex of Agricultural Household Head and by Season, by Zone: 2008.....	27

Table 3.06 Proportion of Agricultural Households with Access to Selected Tools and Machineries, by Sex of the Agricultural Household Head, by Zone: 2008	29
Table 3.07 Proportion of Agricultural Households with Access to Agro-Processing Machines, by Sex of the Agricultural Household Head, by Zone: 2008.....	30
Table 3.08 Percentage of Male and Female Headed Agricultural Households Obtaining Loans, by Source and by Zone: 2008.....	32
Table 3.9 Rank of Topmost Five Primary Purposes for Obtaining Loans, by Sex of the Agricultural Household Heads and Primary Purpose, by Zone: 2008.....	33
Table 4.1 Number and Percentage of Members 15 years old and over in Agricultural Households Reported Employed in Selected Industry/Economic Activities (Pertaining to their Primary Occupation), by Sex of the Household Heads, by Zone: 2008.....	35
Table 4.2 Number and Percentage of Members Engaged in Agriculture, Forestry and Fisheries, by Sex of the Household Heads and Sex and Employment Status of the Members: 2008.....	36
Table 4.3 Percentage of Unpaid Family Workers, by Sex of Household Heads and Sex of Members, by Zone: 2008	38
Table 4.4 Number and Percentage of Members 15 years old and over in Agricultural Households Reported Employed in Primary Occupation, Sex of the Household Heads and Sex and Occupation of Members: 2008.....	39
Table 4.5 Number of Plots and Average Physical Area, Average Area Cultivated and/or Harvested to Crops, by Sex of Household Heads, by Season and Categories of Crops: 2008.....	41
Table 4.6 Crops Produced and Loss, by Sex of the Household Heads and Main	43
Table 4.7 Estimated Value of Crop Production, by Sex of the Household Heads, by Zone: 2008	44
Table 4.8 Estimated Cost (in \$) of Cultivating Crop, by Sex of the Household Heads and Type of Cost, by Zone: 2008.....	45
Table 4.9 Number of Household Reporting and Average Value Sold, by Sex of Household Head and Kind of Livestock and Poultry, by Zone: 2008.....	49
Table 4.10: Number and Percentage of Agricultural Households Engaged in Fishing, by Sex of the Household Heads and Type of Cost, by Zone: 2008	50
Table 5.01 Percentage of Agricultural Households, by Sex of the Household Head and Primary Construction Material of the Wall of the Housing/Dwelling Unit, by Zone: 2008.....	55
Table 5.02 : Percentage of Female and Male Headed Agricultural Households Reporting Main Source of Drinking Water in Wet and Dry Season, by Zone: 2008	57
Table 5.03: Number and Percentage of Female and Male Headed Agricultural Households Reporting Energy Source for Lighting, by Zone: 2008	59

List of Figure

Chart 2.01 Number of Male and Female Headed Agricultural Households,	11
by Zone: 2008.....	11
Chart 2.02 Agricultural Population Age Pyramid, 2008	11
Chart 2.03 Literacy Rate of the Agricultural Household Heads, by Sex, by Zone: 2008	18
Chart 3.01 Percentage of Agricultural Household Members Engaged in the Household's Own Agricultural/Forestry/Fishery Activities, by Sex of Agricultural Household Heads and Employment Status of the Members, by Zone: 2008.....	21
Chart 3.02: Percentage of Agricultural Households, by Sex of Agricultural Household Heads and Accessed Plots, by Zone: 2008.....	23
Chart 3.03 Agricultural Land Areas per Agricultural Household, by Sex of Household Head, by Zone: 2008	23
Chart 3.04 Land Area of Male and Female Headed Agricultural Households, by Type of Land Tenure: 2008	25
Chart 3.05 Average Area Irrigated per Plot (in Hectares for Male and Female Headed Agricultural Households, by Zone: 2008.....	28
Chart 3.06 Percentage of Male and Female Headed Agricultural Households with Access to Loans, by Zone: 2008	31
Chart 4.1 Percentage of Own Account Workers/Members, by Sex of Household Members, by Zone: 2008	37
Chart 4.2 Percentage of Female Own Account Workers/Members, by Sex of Household	37
Chart 4.3 Average Cultivated and Harvested Area to Rice, by Sex of Household Heads, by Zone: 2008	42
Chart 4.4 Percentages of Plots with Investments Made, by Sex of Household Heads, by Zone: 2008	46
Chart 4.5 Average Number of Livestock and Poultry Raised, by Sex of Household Heads: 2008	47
Chart 4.6 Percentage Differences of Households Reporting Cattle by Sex of Household Heads: 2008.....	47
Chart 4.7 Average Amount Received from Fish/Shrimp Culture, by Sex of Household Heads, by Zone: 2008	52
Chart 4.8 Total Amount Received and Spent in the Forestry Activities, by Sex of Household Heads, by Zone: 2008	53

Chart 5.01 Percentage of Female and Male Headed Agricultural Households in Choosing Roof Materials, by Zone: 2008	56
Chart 5.02 Percentage of Female and Male Headed Agricultural Households Using Firewood, by Zone: 2008	58
Chart 5.03 Percentage of Female and Male Headed Agricultural Households Re-Sanitation, by Zone: 2008	60
Figure 5.04: Had sought health care of persons with health problems, by geographical zone and sex, 2008.	61
Figure 5.05: Type of care of those who sought care.	61
Figure 5.06: Household had using Mosquito net.....	62
Figure 5.07: Household had using Mosquito net Impregnated.....	62

I Introduction

1.1 *The Agricultural Sector*

Cambodia is a country located in Southeast Asia with a population of almost 14 million people in 2008, with Phnom Penh being the capital city. The country shares border with Thailand to its west and northwest, with Laos to its northeast, and with Vietnam to its east and southeast. There are two bodies of water, Mekong River and Tonlé Sap Lake, flowing within the jurisdiction of Cambodia.

About 80 percent of the households were living in rural areas. A large majority of these households engaged in rice-based agriculture, collection of forest products and raising livestock. The agricultural sector generates 32 percent of the Gross Domestic Product in 2008 and provides employment to about 80 percent of the country's labor force. The sector is dominated by small farm households engaged mainly in subsistence production. Most of those employed in agriculture are self-employed or unpaid family workers in their own subsistence production system.

In view of the country's economic and historical background, it is important to evaluate the actual agricultural situation especially the contribution of the male and female headed agricultural households in the country. The assessment should be based on the available agricultural statistics compiled at the national level as well as those gathered in the administrative reporting system in the local level to identify the characteristics of the households and its population that are engaged in the agricultural activities.

This report attempts to give a quick view of the situation of Cambodia with respect to the household livelihood activities in the Agricultural Sector. Some key indicators on this analysis are based on data derived from the latest Cambodian Socio-Economic Survey in 2008 (CSES 2008). However, due to small sample households used in the said survey, the indicators are presented at the zone level.

This report will also focused on the female headed and male headed agricultural households and their characteristics pertaining to their demographic and social profile, access to productive resources, information on their agricultural activities and state of these households with regards to some proxy indicators that will imply whether these are poor or non-poor.

1.2 *Agricultural Data Sources*

The CSES was designed to provide information on social and economic conditions of the households for policy studies on poverty, household production and final consumption for the National Accounts and also to update consumer price index of goods and services. It also

served as a medium for training and improving the survey methods and analysis within the National Institutes of Statistics (NIS) of Cambodia.

The CSES 2008 is the latest and most ambitious in a series of multi-objective national surveys that have been conducted by the NIS with the following considerations:

1. It is the largest multi-objective household survey ever undertaken in Cambodia, including a total of 3,600 households interviewed in 360 Primary Sampling Units (PSU) during a 12-month period from January 2008 through December 2008.
2. It is the first multi-objective household survey that covers the entire country.
3. The CSES 2004 collects data on household consumption using two different data collection methodologies, i.e., recall questions similar to those used in previous surveys and a calendar month diary in which all household economic transactions were recorded. Consequently, the CSES 2004 survey teams spent more than one month in each surveyed village.
4. The range of data collected in the CSES 2008 was also more extensive than that collected in previous multi-objective household surveys.
5. In addition to data on household consumption and a wide range of social indicators, the CSES 2008 collected data on sources of household income, village data on land use and access to community and social services (for examples, roads, electricity, water, markets, schools and health facilities), and data on up to three prices from local markets for 93 food and non-food items.

Sample

The survey sample was selected to be representative of the country and representative monthly samples of 300 households based on the twelve months data (January to December 2008) was collected from 3,600 households with a total of about 16,900 individuals.

The fieldwork started in November 2007 and supposed to end in December 2008. However, some more basic data was needed for the analyses and the fieldwork was extended to include January 2009.

Survey estimates were produced for the first nine months of fieldwork for two strata: 1-Urban area and 2-Rural area in the five following zones:

- 0 = Phnom Penh
- 1 = Plain
- 2 = Tonlé Sap
- 3 = Coastal
- 4 = Plateau/ Mountain

At the end of the 12 months, reliable estimates were produced for 11 individual provinces; Banteay Meanchy, Battambang, Kampong Cham, Kampong Speu, Kampong Thom, Kandal, Phnom Penh, Prey Veng, Siem Reap, Svay Rieng and Takeo. The other 13 provinces were grouped according to zones.

1.3 Rationale for agricultural households in Kingdom of Cambodia

In Kingdom of Cambodia, at most 80 percent of populations were living in rural areas and income sources depend on their agriculture product or GDP share from agriculture product 31 percent in 2008. For rural development we still need some more information on agricultural household's data is a major constraint to provide full understanding of the activities and responsibilities of the households in the agricultural sector. Although a number of National Surveys has been conducted such as, CSES 2004, 2007, 2008 and 2009, Cambodia Demographic and Health Survey 2005 and Population Census 2008, gender data related to agriculture are not enough to be analyzed, tabulated and disseminated.

The information provided in this research can be used by the planning and the policy making community to improve the situation of the agricultural households specifically those headed by women. The profile will be useful in the following: (1) to provide directions in setting priorities when it comes to providing agricultural and forestry extension services; and, (2) to transfer knowledge and skills that will improve agricultural productivity and livelihoods of rural populations.

The availability of high quality, reliable statistical data agricultural household's by sex and age for the food and agriculture sector and national capacity to produce such data are critical for the development and implementation of effective poverty reduction, food security and rural development policies.

Agricultural Households Livelihood Analysis framework in the Cambodia 2008

The following table indicate the information on agricultural sector areas under investigation in this report. It highlights the key points to be analysed from Agriculture Households perspective.

Category of enquiry	Data to be tabulated and analysed
Demographic and Social Characteristics of the Agricultural Households	Age, Sex Ratio, Dependency Ratio, Percent of Economically Active Population in Female and Male Headed Agricultural Households; Marital Status in the Female and Male Headed Agricultural Households; Education Status of the Household's Members in the Female and Male Headed Agricultural Households.
Access to Productive Resources	Farm labour; Land access; Land size; Land tenure; Improved technologies such as irrigation and farm equipment; Information and Communication; Credit
Agricultural Activities	Household member Differences in Crop Production, Livestock, Forestry, Fishery
Status of the Agricultural Households with regards to Non-Income Indicators	Poverty proxy indicators such as: housing conditions; drinking water (source); sources of energy; toilet facilities; and durable goods and Health Care.

1.4 Key Definitions

Key Definitions from Population Census

Generally, a household is a group of people who are living together, and making daily arrangement for food and other life necessities; usually, household is composed of persons who are related such as: husband, wife, children, and parent; it also include person who are not relative to the household head such as household worker that stays in the household.

Households

A single-person household comprises of one person living on his/her own without any other person living with him/her; arranging for his/her own food and other life necessities; he/she has his/her own registration book.

A multi-person household comprises of two or more persons living in the same dwelling unit; that arrange for their food and other life necessities together and share a common registration book. This is normal household comprises husband, wife and son, daughter, cousin, servant and other persons living in the household.

The head of household is the person that knows well the situation of household with respect to money matters and welfare of the household members. In the Cambodia society, the husband is usually the head of the household. In case of his absence, her spouse or any adult member of the household becomes the head.

Key Definitions from CSES

A household is a group of people making common arrangements for food, shelter and other acts of daily living. A household usually consists of relatives such as a husband, a wife, children and parents, but sometimes includes unrelated people such as live-in household or farm workers.

Sex refers to the biological differences between men and women.

Agricultural Households Livelihood Analysis is the study of the different roles of women and men head of household to understand what they do, what resource they have and what their needs and priorities are.

II Demographic and Social Profile of the Agricultural Household

2.1 Agricultural Population and Household Characteristics

- The total agricultural population in Cambodia includes about 9.5 million persons (71 percent) out of a total population of 13.5 million. These include those living in the four zones such as Plain, Tonle Sap, Coastal and Plateau/Mountain who are depended for their livelihoods on agriculture, fisheries or forestry activities. Of the agricultural population, 48.5% are males and 51.5% are females.
- In all Zones, the female agricultural population is higher than the male agricultural population with an estimated average difference of 3 percentage points.

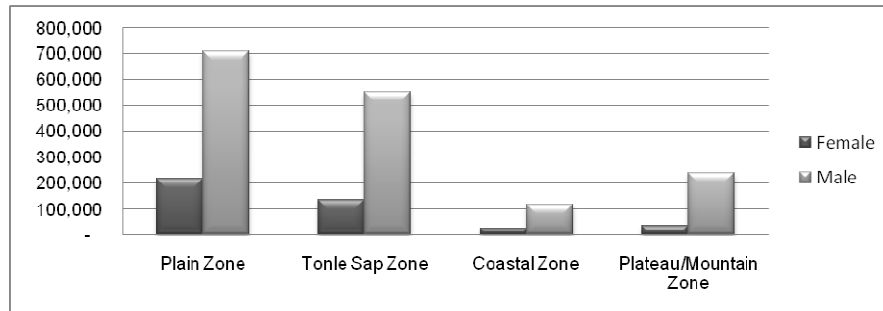
Table 2.01 Agricultural Population in Cambodia, by Sex of the Population, by Zone: 2008

Zone/Age Group	Both Sexes		Female		Male	
	Number	%	Number	%	Number	%
Cambodia	9,509,818	100.0	4,898,553	51.5	4,611,265	48.5
Plain Zone	4,326,825	100.0	2,251,752	52.0	2,075,072	48.0
Tonle Sap Zone	3,236,009	100.0	1,656,052	51.2	1,579,958	48.8
Coastal Zone	619,254	100.0	318,420	51.4	300,834	48.6
Plateau/Mountain Zone	1,327,730	100.0	672,329	50.6	655,401	49.4

Source: NIS, CSES, 2008

- The total number of agricultural households is 2.3 million or about 85 percent of the total households in the country. Of these, 80 percent of the agricultural households are male headed and 20 percent are female headed. The number of male and female headed households varies per zone (Chart 2.01). The Plain Zone which includes Phnom Penh (217,665) has the highest number of female headed households; followed by Tonle Sap Zone with 136,046 female-headed households. Thus, in these two zones the first two highest proportions of female headed households are reported; Plain Zone (53%) being the first and Tonle Sap (33%), the second. The lowest proportion of female-households can be seen in the Coastal Zone (6%).

Chart 2.01 Number of Male and Female Headed Agricultural Households, by Zone: 2008

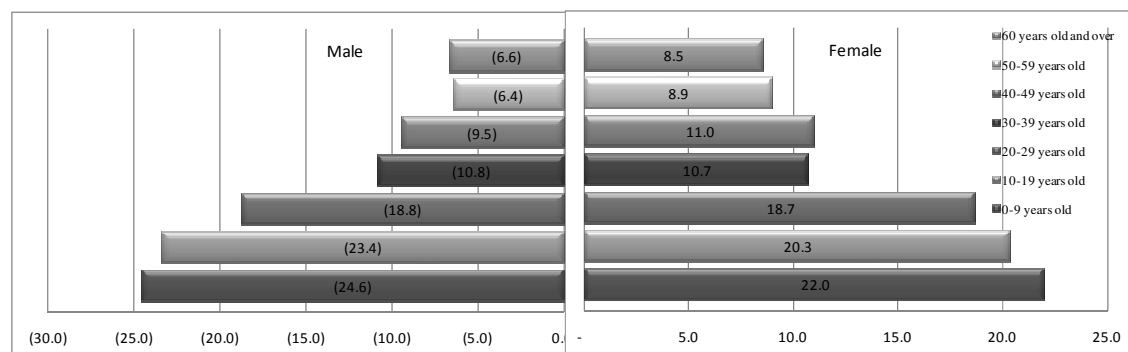


Source: NIS, 2008 CSES

2.1.1 Age

- Chart 2.02 depicts a crude age pyramid of the agricultural population that utilizes 10-year age categories. The pyramid shows a rather typical 'young' population, where the majority of the individuals in the population can be found in the younger age categories. The age pyramid shows that those aged 0-9 years old are slightly greater in number than those in age group 10-19 years old; approximately by 1.3 percentage points in average. This is due to the declining fertility rate in the country or may be due to miscalculation of the age reported in the 2008 CSES.

Chart 2.02 Agricultural Population Age Pyramid, 2008



Source: NIS, 2008 CSES

- As the age group increases, the percentage of male and female agricultural population decreases, specifically, starting in the age group 30-39 years old, in which there is a sudden decrease of the percentage of men and women in the agricultural households. This can be attributed to wars and sad experiences in the country during the Khmer Rouge and possibly due to more recent rural-urban migration in response to employment opportunities in factories, construction, etc
- The median age of the agricultural household heads in Cambodia is 46 years old. Male heads have a lower median age than female heads. In all zones, half of the female heads are older than their male counterparts by an average difference of 8 years.

Table 2.02 Median Age of the Male and Female Agricultural Household Heads, by Zone: 2008

Zone/Age Group of head	All Households	Female-Headed	Male-Headed
Cambodia	46	54	44
Plain Zone	47	50	45
Tonle Sap Zone	45	53	43
Coastal Zone	45	49	43
Plateau/Mountain Zone	45	54	43

Source: NIS, CSES, 2008

2.1.2 Household Size

- The national average household size for agricultural households in Cambodia is 4.7 members, with male headed households having 4.9 members and female headed households 4.0 members. At the zone level, agricultural household size ranges between 4.4 (Coastal) and 5.0 (Plain) members for male headed households and between 3.8 (Plain) and 4.9 (Plateau/Mountain) members for female headed households.
- The difference in household size between male and female headed agricultural households is 0.9 at national level. In Plain, Tonle Sap and Coastal Zones, the female headed households have 0.4 to 1.2 member less than male-headed households. But in the Plateau/Mountain Zone, the female-headed households are slightly bigger than the male headed households. The difference in household size between the male and female headed households is mostly due to the absence of male heads in female headed households. The female heads are also on the average older than the male heads.

Table 2.03 Average Agricultural Household Size, by Sex of Household Heads, by Zone: 2008

Zone	All Households	Female-Headed	Male-Headed	Difference in Size
Cambodia	4.7	4.0	4.9	0.9
Plain	4.7	3.8	5.0	1.2
Tonle Sap	4.7	4.1	4.8	0.7
Coastal	4.4	4.1	4.4	0.4
Plateau/Mountain	4.8	4.9	4.8	(0.0)

Source: NIS, CSES 2008

2.1.3 Household Labour Force (Active Agricultural Population)

- The economically active agricultural population in Cambodia refers to the population in agricultural households that are within the age group 15 to 64 years old.
- Cambodia has an active agricultural population¹ of 5,869,633 or 62 percent of the overall agricultural population. Of the active agricultural population, 47 percent are males and 53 percent are females. All Zones have higher percent of females in the active agricultural population; wherein the Coastal Zone recorded the highest percentage of active female population of 55 percent.
- The economically active members in the agricultural households in the country are more than the inactive members; thus, recording a dependency ratio of 0.6. The dependency ratio of the male-headed households is slightly higher (by 0.1) than that of the female-headed households. The Plateau/Mountain reported the biggest differences (0.4 percentage point) in dependency ratio between the two types of households; followed by Tonle Sap (0.2). The Plain and Coastal Zone have equal dependency ratio.

Table 2.04 Active Agricultural Population, by Sex, by Zone: 2008

Zone/Age Group	Both Sexes	Female	Male
Cambodia	5,869,633	3,110,378	2,759,255
Plain Zone	2,682,374	1,438,224	1,244,149
Tonle Sap Zone	1,961,100	1,023,845	937,255
Coastal Zone	379,159	208,798	170,361
Plateau/Mountain Zone	847,001	439,511	407,490

Source: NIS, CSES, 2008

¹ Active agricultural population = population between 15 and 64 years old.

- Among agricultural households at national level, 61 percent of household members are of working age within male headed households and 66 percent within female headed households. The Coastal Zone has a lower percentage of active household members (54 percent) for female headed agricultural households and Tonle Sap has 60 percent for male headed households. On the other hand, the Plateau/Mountain Zone has reported highest proportion of 81 percent of active household members in the female-headed households and the Plain Zone has recorded 62 percent for the male headed households.

Table 2.05 Proportion and Sex Ratio of Active Agricultural Household Members and Dependency Ratio, by Sex of Household Heads, by Zone: 2008

Zone	All Households			Female-Headed			Male-Headed		
	Proportion	Dependency Ratio	Sex Ratio	Proportion	Dependency Ratio	Sex Ratio	Proportion	Dependency Ratio	Sex Ratio
Cambodia	61.7	0.6	0.89	65.9	0.5	0.53	60.9	0.6	0.99
Plain	62.0	0.6	0.87	63.7	0.6	0.50	61.6	0.6	0.98
Tonle Sap	60.6	0.7	0.92	65.1	0.5	0.56	59.7	0.7	1.02
Coastal	61.2	0.6	0.82	63.1	0.6	0.48	60.9	0.6	0.90
Plateau/Mountain	63.8	0.6	0.93	80.6	0.2	0.62	61.4	0.6	1.00

Source: NIS, CSES 2008

2.1.4 Sex Ratio of Active Members

- The active members vary between male and female headed households. There are likely equal active male and female members in the male headed households (sex ratio of 1) while in the female headed households, there are less economically active male members than the female ones.
- The male to female ratio of active members in agricultural households at national level is 0.9. Among all zones, the male to female ratio of active members is much lower in the female headed households, particularly, in the Coastal and Plain Zone that have low active male to female ratios: 0.48 and 0.50, respectively.
- At the national level, a male headed household has an average of 3.0 economically active members compared to 2.6 active members per female-headed household. Among the zones, the Plateau/Mountain reported the highest average number of economically active population for the female-headed households, surpassing the national average by 1.3 percentage points. The Plain Zone slightly exceeds the national average for the male-households in its recorded average of 3.1 active members.

2.2 Marital Status

- Nine out of ten female agricultural household heads are called “De Facto” or actual household heads in lieu of the permanent absence of their spouses/husbands or adult male members. The other remaining 11 percent are the “De Jure” female heads that are forced to take the responsibility of caring the household members in the temporary absence of their husbands/spouses.
- If related to the total agricultural household heads, more or less one in every five agricultural household heads is a female who are mostly widows or sometimes never married or separated/divorced. These are the de facto or real females heading the agricultural households. About 2.3 percent of the female household heads are married. These women take over the headship of the household in the absence of their husbands, who are, either working in other places in the country or abroad, are temporarily ill or are not the head for other valid reasons.
- The Coastal Zone’s female agricultural household heads are all de facto or real heads, accounting for 17 percent of its total household heads. The highest proportion (3.5 percent) of the de jure female heads is reported in Plain Zone and the lowest (1 percent) in the Plateau/Mountain Zone.

Table 2.06 Proportion of Female Agricultural Household Heads to the Total Heads, by Zone: 2008

Zone/Marital Status of Household Head	Female-Headed
Cambodia	
Proportion of De Facto Female Household Heads to Total Heads	18.0
Proportion of De Jure Female Household Heads to Total Heads	2.3
Plain Zone	
Proportion of De Facto Female Household Heads to Total Heads	20.0
Proportion of De Jure Female Household Heads to Total Heads	3.5
Tonle Sap Zone	
Proportion of De Facto Female Household Heads to Total Heads	18.1
Proportion of De Jure Female Household Heads to Total Heads	1.7
Coastal Zone	
Proportion of De Facto Female Household Heads to Total Heads	17.1
Proportion of De Jure Female Household Heads to Total Heads	-
Plateau/Mountain Zone	
Proportion of De Facto Female Household Heads to Total Heads	11.6
Proportion of De Jure Female Household Heads to Total Heads	1.0

Source: NIS, CSES, 2008

2.3 Highest Education Successfully Completed and Literacy

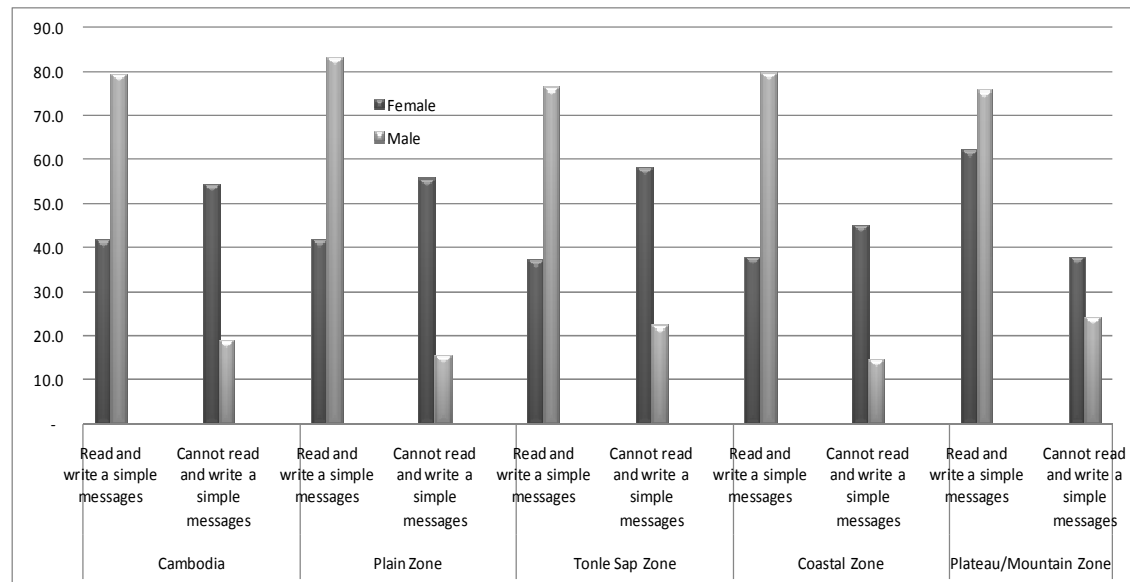
- Of the 9.5 million agricultural population (or 71 percent), 6.8 million household members have attended and successfully completed any of the available educational level in the country. About 2 percent has no class completed.
- Around 2 percent of the agricultural household members did not attend or have never attended any school. The proportion of such members in the male-headed households is higher than the female-headed households. The three top most reasons of the female and male members not attending school are as follows: (1) must contribute to household income; (2) must help in the household chores; and, (3) did not want to go to school (self-withdrawal).
- Of the educated members in the agricultural households, the proportion of male members is higher by 10 percentage points; which means that female members have less access to education.
- The proportion of the members that successfully completed any educational level in the female-headed households is lower (by 5 percentage points) compared to those living in the male-headed households. The educated female members in the female and male headed households have lower percentage (62 percent and 67 percent, respectively) against their male siblings. Similarly, in all zones, the proportion of educated female members is lower than their male counterparts.
- Most of the female and male members in the female and male headed households have reached and finished any class from one to twelve. However, only few female members in the female-headed household have attended and completed college/university undergraduate level. On the other hand, about 0.2 percent of the female members in the male –headed households have reached and attained bachelor’s degree, which is only less 0.1 percentage point when compared to the male members. A very nil percentage of these female members have post graduate degrees while about 0.1 percent of the male members have obtained master’s and doctorate degrees.

Table 2.07 Proportion of Agricultural Household Members by Sex of the Household Heads, by Sex and Educational Level of the Members Successfully Completed, by Zone: 2008

Zone/Highest level	All Households			Female-Headed			Male-Headed		
	Both Sexes	Female	Male	Both Sexes	Female	Male	Both Sexes	Female	Male
Cambodia									
Completed any educational level	70.9	66.1	76.0	66.7	61.6	75.4	71.8	67.3	76.1
No class completed	1.7	1.7	1.7	1.2	1.1	1.4	1.8	1.8	1.7
Don't know	0.1	0.1	0.2	0.1	0.0	0.4	0.1	0.1	0.1
Plain Zone									
Completed any educational level	72.7	68.1	77.8	65.9	60.8	74.8	74.3	70.2	78.3
No class completed	1.3	1.6	1.1	1.2	1.0	1.6	1.4	1.7	1.0
Don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tonle Sap Zone									
Completed any educational level	69.1	63.9	74.5	63.0	56.2	74.1	70.4	66.0	74.6
No class completed	1.5	1.6	1.5	1.5	1.8	0.9	1.6	1.5	1.6
Don't know	0.3	0.2	0.4	0.2	0.0	0.5	0.3	0.2	0.3
Coastal Zone									
Completed any educational level	73.8	68.4	79.6	71.8	71.7	71.9	74.2	67.6	80.5
No class completed	0.7	0.1	1.3	1.6	0.1	4.7	0.5	0.1	0.8
Don't know	0.2	0.0	0.5	1.4	0.0	4.2	0.0	0.0	0.0
Plateau/Mountain Zone									
Completed any educational level	68.2	63.9	72.5	79.9	77.4	83.6	66.5	61.5	71.2
No class completed	3.6	3.0	4.1	0.2	0.0	0.5	4.0	3.5	4.6
Don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: NIS, CSES, 2008

- In Cambodia, 72 percent of the total agricultural household heads can read and write a simple message. The proportion of literate male heads is higher than the female heads, even, higher than the national level literacy rate. There are more female heads that cannot read and write even a simple message than those considered to be literate female heads.
- Higher literacy rate of female heads are reported in Plateau/Mountain Zone and the lowest are recorded in the Tonle Sap.

Chart 2.03 Literacy Rate of the Agricultural Household Heads, by Sex, by Zone: 2008

Source: NIS, 2008 CSES

- Surprisingly, the literacy rate of the members 15 years old and over in the agricultural households is very low. Of these, the proportion of the female members that can read and write a simple message is lower than the male members of the same age group by 36 percentage points. The pattern depicted by the literacy report from the 2008 CSES is that if the household is headed by female, the literacy rate of male member is lower than that of the female members while in the male headed agricultural households, the female members have lesser opportunity to read and write simple message as indicated by their literacy rate of 6 percent. Though, however, the male members 15 years old and over in the female headed households are more fortunate since their literacy rate is not too far from that of their female members.
- The literacy scenario at the zone level is almost the same situation as in the national level except in the Plateau/Mountain Zone, where less than 10 percent of the male members in the female headed agricultural households are literate.

Table 2.08 Number and Percentage of Agricultural Household Members 15 years old and over, by Sex of Agricultural Household Heads and Members, by Zone: 2008

Zone/Literacy Rate	All Agricultural Households		Female Headed Agricultural Households		Male Headed Agricultural Households	
	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
Cambodia						
All Members 15+	1,839,658	29.0	331,454	27.6	1,508,203	29.3
Female Members 15 +	410,626	12.1	253,044	31.0	157,582	6.1
Male Members 15 +	1,429,032	48.2	78,410	20.3	1,350,621	52.3
Plain Zone						
All Members 15+	832,977	28.3	164,512	28.0	668,465	28.4
Female Members 15 +	188,849	11.9	130,681	31.9	58,168	5.0
Male Members 15 +	644,128	47.4	33,831	18.9	610,297	51.8
Tonle Sap Zone						
All Members 15+	619,316	29.5	112,524	28.1	506,792	29.8
Female Members 15 +	139,305	12.6	77,514	29.1	61,791	7.4
Male Members 15 +	480,011	48.3	35,010	26.2	445,001	51.7
Coastal Zone						
All Members 15+	131,206	30.7	22,150	30.5	109,056	30.7
Female Members 15 +	24,687	10.5	16,685	32.0	8,002	4
Male Members 15 +	106,519	55.4	5,465	26.8	101,054	58.8
Plateau/Mountain Zone						
All Members 15+	256,159	29.0	32,268	22.8	223,890	30.2
Female Members 15 +	57,785	12.5	28,164	31.7	29,621	7.9
Male Members 15 +	198,374	47.1	4,104	7.8	194,269	52.7

Source: NIS, CSES, 2008

III - Agricultural households Access to Productive Resources

3.1 Household Agricultural Labour Force

- Labour force in Cambodian agricultural households are members belonging to age group 15 years old and over; however, for agricultural activities, this also includes 10 -14 years old that are helping in the household's own farm/agricultural activities. The total number of agricultural and fishery workers in Cambodia is 3,715,696, of which 1,755,581 (47.3%) are females and 1,960,115 (52.8%) are males. The number of female skilled agricultural and fishery workers ranges from 122 thousand in Coastal Zone to 807 thousand in the Plain Zone. Male skilled agricultural labourers range from 160 thousand in Coastal Zone to 907 thousand in the Plain Zone.

Table 3.01 Number and Percentage of Skilled Agricultural and Fishery Workers in the Agricultural Households, by Sex of the Household Head and by Sex and Primary Occupation of the Members, by Zone: 2008

Primary Occupation of the Household Member	All Agricultural Households		Female-Headed Agricultural Households		Male-Headed Agricultural Households	
	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
Cambodia						
All Members	3,715,696	50.9	591,602	43.9	3,124,095	52.5
Female Members	1,755,581	45.9	363,114	41.2	1,392,469	47.4
Male Members	1,960,115	56.4	228,488	49.1	1,731,626	57.5
Plain Zone						
All Members 15 years old and over	1,713,901	51.1	299,013	44.9	1,414,888	52.6
Female Members	807,161	45.3	183,570	41.6	623,592	46.6
Male Members	906,740	57.6	115,443	51.5	791,296	58.6
Tonle Sap Zone						
All Members 15 years old and over	1,183,183	48.6	192,556	42.6	990,628	49.9
Female Members	561,018	44.6	120,810	42.0	440,209	45.4
Male Members	622,165	52.8	71,746	43.7	550,419	54.2
Coastal Zone						
All Members 15 years old and over	281,901	57.9	44,196	56.5	237,705	58.1
Female Members	121,977	46.9	26,552	45.9	95,425	47.2
Male Members	159,924	70.4	17,644	86.5	142,280	68.8
Plateau/Mountain Zone						
All Members 15 years old and over	536,711	52.5	55,837	36.9	480,874	55.2
Female Members	265,425	50.6	32,182	34.0	233,243	54.3
Male Members	271,286	54.5	23,655	41.6	247,631	56.1

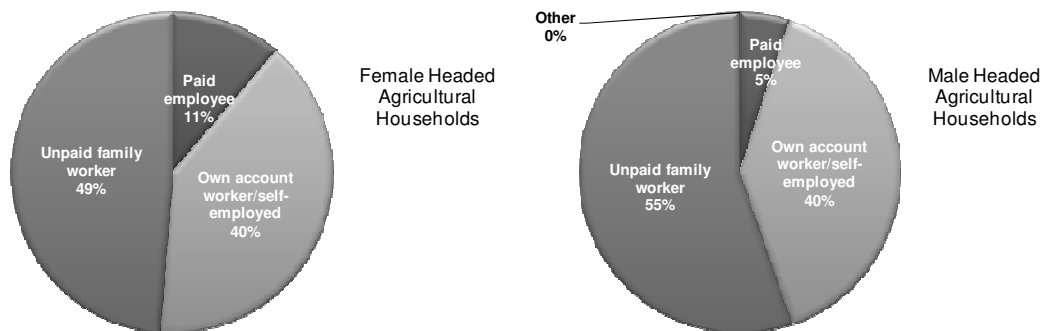
Source: NIS, CSES, 2008

- Higher proportion of female and male members that work as skilled agricultural and fishery worker is noted in the male headed agricultural households than in the female headed agricultural households. The proportion differs by around 10 percentage point for the female agricultural workers while 8 percent for the male ones. Across Zones, almost the same situation can be observed except for the Coastal Zone where there are higher proportion male members in the female headed agricultural that work primarily as skilled workers in agriculture and fishery. In this zone also the difference of the proportion of the

female members that are skilled agricultural and fishery worker between the two types of households is only one percentage point.

- About 16 percent of the agricultural household members have secondary occupation in agricultural production. Of which, 16 percent are members of the female headed agricultural households and 84 percent in the male headed ones.
- The agricultural household members 10 years old and over that are engaged in agriculture, forestry and fisheries are composed of paid employee (4 percent) working in either other agricultural households or in the government/private sectors engaged in such sector; own account/self-employed workers (23 percent) that manage/operate their own agricultural activities; unpaid family workers (31 helping in the household's farm/agricultural activity; and, other workers (0.02) not classified in the first three categories. Combining the own account and unpaid workers together, about 47 percent of the household members in the female headed agricultural households are engaged in its own farm/agricultural activity. This proportion is lower by 9 percentage points from the proportion of members in the male headed agricultural households that are involved in its own operated agricultural/forestry/fishery activity.

Chart 3.01 Percentage of Agricultural Household Members Engaged in the Household's Own Agricultural/Forestry/Fishery Activities, by Sex of Agricultural Household Heads and Employment Status of the Members, by Zone: 2008



Source: NIS, 2008 CSES

3.2 Agricultural Land

Agricultural land is the main component of producing crops, whether annual or perennial crops. A household may have operated or used a piece or pieces of lands in order to be able to produce such crops. In the case of 2008 CSES, operating a plot or several plots in the past twelve months was used instead of parcel or holding. The survey could not provide any information on the totality of the holdings operated by female or male headed agricultural households but it could give the gender profile of these households with regards to access on agricultural lands.

3.2.1 Access to Agricultural Lands

- At national level, around 96 percent of the total agricultural households have access to agricultural lands. The proportion of male-headed agricultural households with access to agricultural lands is higher than the female-headed agricultural households by 3 percentage points. These two households differ in the number of plots of lands used in their agricultural activities. The proportion of the female-headed households having one plot is higher than their male counterparts. On the other hand, the percentage of male headed agricultural households operating more than one plot exceeds that of the female headed ones by 10 percentage points.

Table 3.02 Number of Agricultural Households Reporting Access to Lands, by Sex of Agricultural Household Heads and Number of Used Plots, by Zone: 2008

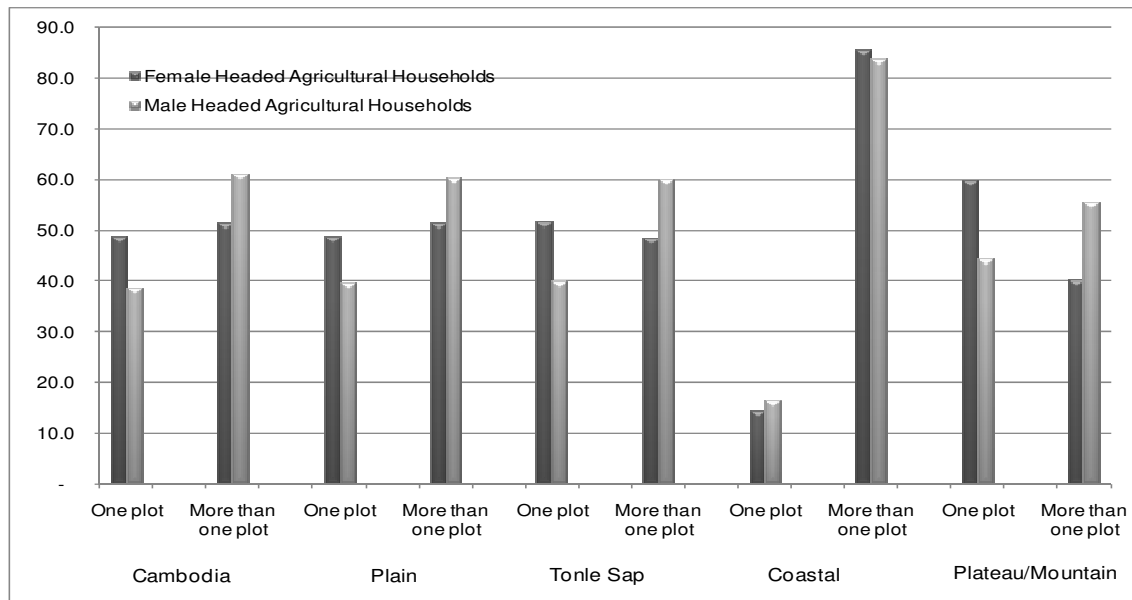
Zone/Available Plots in the Agricultural Lands	All Agricultural Households		Female Headed Agricultural Households		Male Headed Agricultural Households	
	HouseHold Reporting	Percent (%)	HouseHold Reporting	Percent (%)	HouseHold Reporting	Percent (%)
Cambodia						
Total	1,957,208		387,635		1,569,573	
One plot	796,404	40.7	188,286	48.6	608,118	38.7
More than one plot	1,160,804	59.3	199,349	51.4	961,455	61.3
Plain Zone						
Total	882,154		204,048		678,106	
One plot	368,366	41.8	99,064	48.5	269,302	39.7
More than one plot	513,788	58.2	104,984	51.5	408,804	60.3
Tonle Sap Zone						
Total	661,783		126,426		535,357	
One plot	278,793	42.1	65,342	51.7	213,451	39.9
More than one plot	382,990	57.9	61,084	48.3	321,906	60.1
Coastal Zone						
Total	140,076		22,755		117,321	
One plot	22,555	16.1	3,274	14.4	19,281	16.4
More than one plot	117,521	83.9	19,481	85.6	98,040	83.6
Plateau/Mountain Zone						
Total	273,195		34,406		238,789	
One plot	126,690	46.4	20,606	59.9	106,084	44.4
More than one plot	146,505	53.6	13,800	40.1	132,705	55.6

Source: NIS, CSES, 2008

Note: Excludes owned plots but rented out to other households/persons that are not part of the household.

- Similar situation can be seen in the three zones (Plain, Tonle Sap and Plateau/Mountain) in which there is a high proportion of female-headed households that utilize only one plot for their agricultural activities compared to the male-headed households that use more than one plot. However, the situation in Coastal Zone is different. Of the total female households in this zone, nine out ten are operating more than one plot compared to eight out ten of their male counterparts.
- At the national level and within the three zones (Plain, Tonle Sap and Plateau/Mountain) the average number of plots per household, regardless of the sex of the heads, is 2. In the Coastal Region, each male or female headed agricultural household has one more plot than their counterparts in the three other zones.

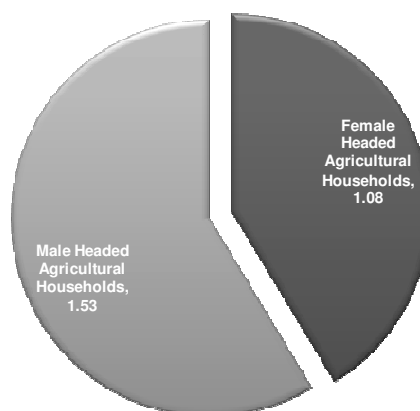
Chart 3.02: Percentage of Agricultural Households, by Sex of Agricultural Household Heads and Accessed Plots, by Zone: 2008



Source: NIS, 2008 CSES

- At national level, the average area of agricultural land available for agricultural households is 1.4 hectare. Female headed agricultural households have an average of 1.1 ha compared to 1.5 ha for male headed households, which is about 30 percentage points less land per household.

Chart 3.03 Agricultural Land Areas per Agricultural Household, by Sex of Household Head, by Zone: 2008



Source: NIS, 2008 CSES

- Particularly in Plain, Tonle Sap and Plateau/Mountain Zones, the female headed agricultural households have less agricultural land available than the male headed households. Among the Plateau/Mountain this is 38 percentage points less land per household, followed by the Plain with 37 percentage points less and in Tonle Sap, the female headed agricultural households have 22 percentage points less agricultural land. On the other hand, in the Coastal Zone, both households have almost same percentage in terms of average land area where the female headed households have only 2 percentage point less agricultural land compared to male headed households.

Table 3.03 – Average Land per Agricultural Household Area by Sex of Agricultural Household Head, by Zone: 2008

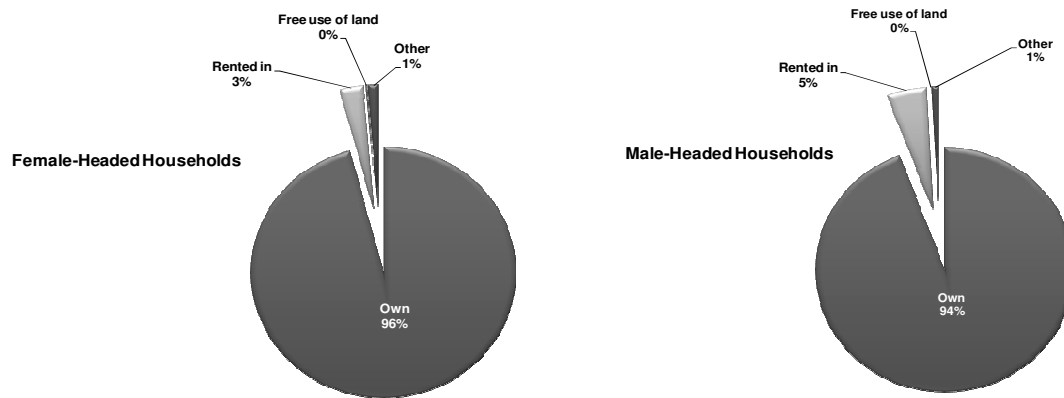
Zones	All Agricultural Households	Female Headed Agricultural Households	Male Headed Agricultural Households	Percentage difference
Cambodia	1.44	1.08	1.53	29
Plain	1.22	0.85	1.34	37
Tonle Sap	1.83	1.49	1.91	22
Coastal	1.06	1.09	1.06	2
Plateau/Mountain	1.37	0.90	1.44	38

Source: NIS, 2008 CSES

3.2.2 Land tenure

- The land tenure as defined in WCA 2010 refers to the arrangements or rights under which the household, as in the case of 2008 CSES, operates the agricultural plots.
- The 2008 CSES collected data on land tenure that distinguishes 4 types: owned, rented in, free use of land and other types. Of these types, around 40 percent of the agricultural households owned plots or agricultural lands. At national level, the difference between the proportion of male and female headed agricultural households that owned lands during the reference period is about 5 percentage points, with higher percentage of female headed households owning lands. At the zone level, differences in male and female headed agricultural households owning lands ranges between 2.0 (Coastal Zone) to 10 (Plateau/Mountain Zone) percentage points. In these two zones, higher proportion of male headed agricultural households owning agricultural plots over the female headed agricultural households is observed compared to the other two zones where the situation is reversed. Specifically, in the Coastal Zone, only 3 percent of the female headed agricultural households owned lands during the reference period.

Chart 3.04 Land Area of Male and Female Headed Agricultural Households, by Type of Land Tenure: 2008



Source: NIS, 2008 CSES

- Of the total plots reported at the national level, 95 percent are owned and acquired through different means: provision from the state or local authority, inherited or given by relatives, bought from other persons/households, cleared or occupied for free and donated by friends. Less (3.4) percentage of the total lands is rented in. The female headed households acquire about 56 percent of their plots through the state or local authority and around one-fourth of their plots are inherited or given by their relatives. On the other hand, more or less four out of ten plots of the male headed households are acquired through the state/local authority and another one-third through inheritance.
- A significant number of owned plots of both male and female headed households is bought. About 18 percent (for male-headed households) and 11 percent (female-headed households) of the total number of plots used are bought lands. The proportion of the total area of these bought lands among female headed agricultural households is lower by 8 percent compared to male headed households. Across the zones, notable differences in the proportion of bought lands between male and female headed households are in Coastal and Plateau/Mountain Zones.
- The 2008 CSES also collected data in the proof of ownership or rental agreement. Around 60 percent of the plots operated by the male and female headed households have certain papers that will certify their ownership or rental agreement.

Table 3.04 Percentage of Bought Plots, by Sex of the Agricultural Household Heads, by Zone: 2008

Zone	All Agricultural Households		Female Headed Agricultural Households		Male Headed Agricultural Households	
	Number of Plots	Percent	Number of Plots	Percent	Number of Plots	Percent
Cambodia	672,148	16.8	78,047	11.3	594,101	18.0
Plain Zone	274,266	15.8	37,590	10.7	236,676	17.1
Tonle Sap Zone	260,290	20.8	30,547	14.6	229,743	22.0
Coastal Zone	71,668	15.2	8,567	12.8	63,101	15.6
Plateau/Mountain Zone	65,924	12.4	1,343	2.1	64,581	13.8

Source: NIS, CSES, 2008

3.3 Improved technologies

This section provides information on the kind of technologies availed of by the female and male headed agricultural households to be able to improve their agricultural activities. There are several technologies supplied to boost such activities specifically crop production. In the past, agricultural households have used traditional farming technologies but nowadays they are introduced to the improved ones to give them more gains. One of these technologies is the use of improved irrigation system. Irrigation means supplying the agricultural land with sufficient water other than rain to increase crop production. Improved irrigation system refers to the existing facilities/equipment in the locality that can be put into operation to supply water to the crops; either through irrigation canals, pumps, sprinklers or local water structure.

Another technology is the use of machineries and equipment such as tractor, thresher, harvester, rice mill, etc. Traditional farming usually uses small implements or tools such as plough, harrow, rake, etc. But modern technology has brought the invention of big motorized tractor, harvesting and threshing machines, rice mill, rice/crop dryer, etc.

3.3.1 Irrigation

- The 2008 CSES collected basic data related to irrigation of the plots used in the dry season and wet season. At national level, the proportion of male headed agricultural households that irrigated their agricultural during dry and wet seasons is slightly higher proportion compared to the female headed agricultural households. However, during the dry season only, there is a difference of 3 percentage points between the proportion of the male and female headed households that irrigated their plots. On the other hand, the female-headed households are also reported to have higher proportion of irrigated plot areas during wet season; showing a difference of 2 percentage points over the irrigated area of their male counterparts.
- Higher proportion of plot areas of female (59 percent) and male (58 percent) headed households have not been irrigated in any season. The proportion of area not irrigated for both male and female headed households is 58 percent of the total area of plots used in agricultural activities.

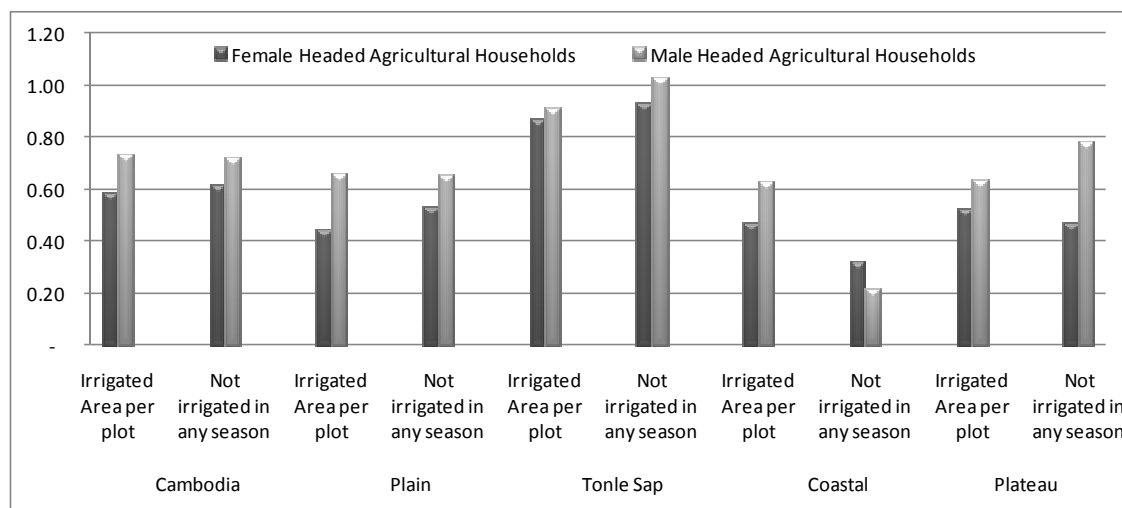
Table 3.05 Percentage of Irrigated Plot Area, by Sex of Agricultural Household Head and by Season, by Zone: 2008

Zone/Indicators for Irrigated Plots	All Agricultural Households	Female Headed Agricultural Households	Male Headed Agricultural Households
Cambodia			
Dry season only	8.8	6.6	9.2
Wet season only	26.0	27.6	25.7
Both dry and wet seasons	6.8	6.3	6.9
Not irrigated in any season	58.4	59.4	58.2
Plain Zone			
Dry season only	15.1	8.4	16.8
Wet season only	27.0	27.7	26.8
Both dry and wet seasons	7.4	8.0	7.2
Not irrigated in any season	50.5	55.8	49.2
Tonle Sap Zone			
Dry season only	5.9	6.0	5.8
Wet season only	29.6	32.3	29.0
Both dry and wet seasons	6.9	4.1	7.5
Not irrigated in any season	57.6	57.5	57.6
Coastal Zone			
Dry season only	0.8	-	0.9
Wet season only	15.2	23.7	13.8
Both dry and wet seasons	8.2	10.1	7.9
Not irrigated in any season	75.8	66.2	77.4
Plateau/Mountain Zone			
Dry season only	1.9	5.6	1.4
Wet season only	23.9	15.9	25.1
Both dry and wet seasons	3.5	0.3	3.9
Not irrigated in any season	70.6	78.2	69.6

Source: NIS, CSES, 2008

- The trend of irrigated plots is slightly different in the zones. There are higher proportions of irrigated areas under the female-headed households in Plateau/Mountain (differed by 4 percentage points) during dry season; in Coastal Zone (differ by 10 percentage points) and Tonle Sap (differ by 3 percentage points) during the wet season. Even in irrigating the agricultural plots in both seasons, the proportion of female headed agricultural households is higher in the Plain and Coastal Zones while the male headed agricultural households are at advantaged in irrigation in Tonle Sap and Plateau/Mountain areas.

Chart 3.05 Average Area Irrigated per Plot (in Hectares for Male and Female Headed Agricultural Households, by Zone: 2008



Source: NIS, 2008 CSES

3.3.2 Farm Equipment

- The 2008 CSES collected the number of households with access to farm equipment such as tractor, water pump, threshing machine, rice mill and other small implements such as plough, harrow, rake, hoe, spade, axe, etc. At the national level, access to big tractors is only reported to male-headed households while access to water pumps and hand tractors, the reported proportion of female-headed agricultural households is lower than the male-headed. There
- Across zones, all female headed agricultural households in the Coastal and Plateau/Mountain Zones have no access to any kind of tractor while 12 percent of the female-headed households in the Plain and Coastal Zone have used water pumps.
- There are higher proportions of male and female headed agricultural households that use plough and small implements such as harrow/rake/hoe/spade/axe. In using plough, the proportion of male-headed agricultural households is still higher than that of the female headed agricultural households by 17 percent. Whereas slight difference in the proportion of these two households in the use of small tools/implements can be seen in Table 3.05. The table shows that almost all agricultural households across the country are using harrow/rake/hoe/spade/axe in operating their agricultural plots.

Table 3.06 Proportion of Agricultural Households with Access to Selected Tools and Machineries, by Sex of the Agricultural Household Head, by Zone: 2008

Zone/Farm Equipment/Tools	All Agricultural Households	Female-headed Agricultural Households	Male-headed Agricultural Households
Cambodia			
Tractor	0.5		0.7
Hand Tractor	6.4	1.1	7.8
Water Pump	16.5	7.9	18.7
Plough	44.6	31.4	47.9
Harrow/Rake/Hoe/Spade/Axe	97.2	95.9	97.5
Plain			
Tractor	0.5		0.7
Hand Tractor	3.6	0.8	4.4
Water Pump	25.9	12.3	30.0
Plough	41.0	30.8	44.2
Harrow/Rake/Hoe/Spade/Axe	96.1	96.0	96.2
Tonle Sap			
Tractor	0.9		1.2
Hand Tractor	10.9	2.2	13.1
Water Pump	9.3	1.5	11.2
Plough	35.9	25.5	38.4
Harrow/Rake/Hoe/Spade/Axe	97.7	95.1	98.4
Coastal			
Tractor			
Hand Tractor	2.0		2.4
Water Pump	9.8	11.5	9.5
Plough	69.2	49.5	73.3
Harrow/Rake/Hoe/Spade/Axe	97.8	93.6	98.7
Plateau/Mountain			
Tractor			
Hand Tractor	7.0		8.0
Water Pump	6.3	2.9	6.8
Plough	65.7	45.6	68.6
Harrow/Rake/Hoe/Spade/Axe	99.1	100.0	99.0

Source: NIS, 2008 CSES

- Other equipment/machineries used by the agricultural households in Cambodia are threshing machine and rice mill which are used for agro-processing purposes. Only very few households have access to such agro-processing machineries. A nil proportion (0.2 percent) of female headed agricultural households has used the threshing machine and one percent of these households have used the rice mill. On the other hand, a slight higher proportion of the male headed households have used the rice mill (3.7 percent) and the threshing machine (1.3 percent).
- Among the zones, the female-headed agricultural households in Plateau/Mountain have not used any of these agro-processing machines. Likewise, those in the Plain Zone did not use the threshing machine while those in the Coastal Zone have no access to rice mill.

Table 3.07 Proportion of Agricultural Households with Access to Agro-Processing Machines, by Sex of the Agricultural Household Head, by Zone: 2008

Zone/Agro-Processing Machines	All Agricultural Households	Female-headed Agricultural Households	Male-headed Agricultural Households
Cambodia			
Threshing Machine	1.1	0.2	1.3
Rice Mill	3.2	1.0	3.7
Plain			
Threshing Machine	1.0		1.3
Rice Mill	3.1	0.9	3.7
Tonle Sap			
Threshing Machine	1.4	0.6	1.6
Rice Mill	2.6	1.5	2.9
Coastal			
Threshing Machine	0.2	0.3	0.2
Rice Mill	2.7		3.2
Plateau/Mountain			
Threshing Machine	0.8		0.9
Rice Mill	5.2		5.9

Source: NIS, 2008 CSES

3.4 Information and Communication

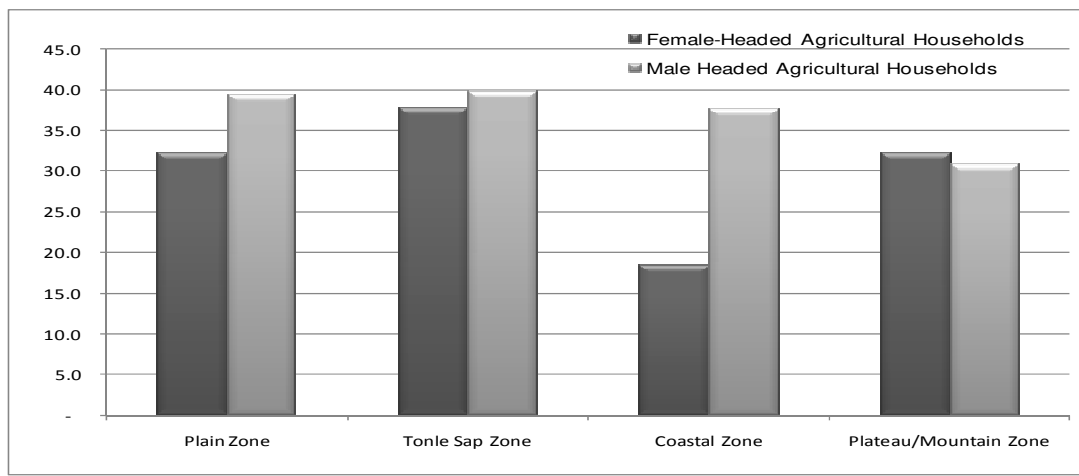
Vital information such as modern technologies, etc., to improve farming and other agricultural activities are very important matters to be communicated to the agricultural households. Hence, this section relates the kind of communication technologies that are available within the female and male headed agricultural households that can be used to access such information.

3.5 Credit

- This section pertains to credit availed by the female and male headed agricultural households during a particular reference period. Credit means borrowing money or having a loan through bank, cooperative, friend, etc, purposely to purchase goods or services either for agricultural activities or non-agricultural activities including personal needs.
- The 2008 CSES collected data on loans such as the number of months of the debts, source and primary purpose of obtaining loans. At national level, around 37 percent of all agricultural households took a loan for agricultural production or business or other purposes. The ratio of the male headed agricultural households to the female headed agricultural households with regards to accessing loans is 5:1; which means that for every five male-headed agricultural households getting loans, only one female-headed agricultural household can obtain loan.

- The proportion of female headed agricultural households with access to loans differs per zone, that is, it ranges between 18 percent in Coastal to 38 percent in Tonle Sap. Likewise, the difference between male and female headed rural households varies among the regions, with only 2 percentage points difference in Tonle Sap and Plateau/Mountain Zones while 19 percentage points in the Coastal Zone.

Chart 3.06 Percentage of Male and Female Headed Agricultural Households with Access to Loans, by Zone: 2008



- The three most common sources of loans among agricultural households are the banks, moneylenders and the non-government organizations (NGOs), especially in the Plain and Tonle Sap Regions. Nine percent of the female headed agricultural households have obtained their loans from the moneylenders; whereas 9 percent of the male headed agricultural households have taken their loans from the bank or from NGOs.

Table 3.08 Percentage of Male and Female Headed Agricultural Households Obtaining Loans, by Source and by Zone: 2008

Zone/Source of Loan	All Agricultural Households	Female-Headed Households	Male-Headed Agricultural Households
Cambodia			
Total Agricultural Households with Access to Loans	37.2	33.4	38.1
Relatives in Cambodia	7.4	6.9	7.5
Relatives who live abroad	0.2	0.4	0.1
Friends/neighbours	2.9	4.0	2.7
Moneylender	8.0	8.9	7.7
Trader	1.6	1.4	1.7
Employer	0.1		0.1
Bank	8.3	5.3	9.1
NGO	8.2	6.2	8.7
Other	0.4	0.3	0.4
Plain Zone			
Total Agricultural Households with Access to Loans	37.7	32.4	39.4
Relatives in Cambodia	8.4	7.0	8.8
Relatives who live abroad	0.3	0.4	0.3
Friends/neighbours	1.7	1.2	1.8
Moneylender	8.1	10.3	7.5
Trader	1.8	0.9	2.1
Employer	0.1		0.1
Bank	8.0	6.4	8.5
NGO	8.8	5.8	9.8
Other	0.5	0.4	0.6
Tonle Sap Zone			
Total Agricultural Households with Access to Loans	39.4	37.9	39.8
Relatives in Cambodia	6.4	8.6	5.8
Relatives who live abroad	0.1	0.5	
Friends/neighbours	4.5	8.3	3.5
Moneylender	9.9	9.3	10.1
Trader	2.1	2.8	1.9
Bank	7.8	1.9	9.3
NGO	8.2	6.4	8.6
Other	0.3	0.2	0.4
Coastal Zone			
Total Agricultural Households with Access to Loans	34.4	18.5	37.7
Relatives in Cambodia	14.7	6.3	16.4
Friends/neighbours	1.1	5.6	0.2
Moneylender	2.1		2.6
Bank	9.3	6.5	9.9
NGO	7.2	0.2	8.6
Plateau/Mountain Zone			
Total Agricultural Households with Access to Loans	31.0	32.3	30.8
Relatives in Cambodia	2.9		3.3
Friends/neighbours	4.2	3.1	4.4
Moneylender	5.6	5.3	5.7
Trader	0.8		0.9
Employer	0.3		0.4
Bank	10.2	10.8	10.1
NGO	6.6	13.1	5.7
Other	0.4		0.5

Source: NIS, CSES, 2008

- At the national level, the five topmost reasons for obtaining loans are: (1) agricultural production and operation; (2) household consumption needs; (3) non-agricultural activities; (4) illness and injury; and (5) purchase or improvement of dwelling. These are the common reasons prevailing in both female and male headed agricultural households.

Though when these reasons are ranked, the priority of obtaining loans for the female headed agricultural households deviates from that of the male headed households. The female heads would use the loans for their household consumption while the male heads would use these for agricultural purposes.

Table 3.9 Rank of Topmost Five Primary Purposes for Obtaining Loans, by Sex of the Agricultural Household Heads and Primary Purpose, by Zone: 2008

Zone/Primary Purpose	All Agricultural Households		Female Headed Agricultural Households		Male Headed Agricultural Households	
	Percentage (%)	Rank	Percentage (%)	Rank	Percentage (%)	Rank
Cambodia						
Agricultural production, operation and implementation	12.5	1	8.7	2	13.4	1
Non-agricultural activities	5.9	3	6.4	3	5.8	3
Household consumption needs	11.8	2	10.7	1	12.0	2
Illness, injury	2.8	4	2.1	5	2.9	4
Purchase/Improvement of dwelling	2.4	5	3.2	4	2.2	5
Plain Zone						
Agricultural production, operation and implementation	13.3	1	9.1	2	14.6	1
Non-agricultural activities	5.2	3	4.9	3	5.3	3
Household consumption needs	10.3	2	10.0	1	10.4	2
Illness, injury	2.8	4	1.4	5	3.2	4
Purchase/Improvement of dwelling	2.6	5	4.8	4	1.9	5
Tonle Sap Zone						
Agricultural production, operation and implementation	11.7	2	10.4	2	12.0	2
Non-agricultural activities	7.9	3	9.5	3	7.5	3
Household consumption needs	12.4	1	11.0	1	12.7	1
Illness, injury	2.8	4	2.9	4	2.8	4
Purchase/Improvement of dwelling	2.5	5	2.1	5	2.6	5
Coastal Zone						
Agricultural production, operation and implementation	4.1	4			4.9	4
Non-agricultural activities	6.7	2			8.1	2
Household consumption needs	13.2	1	18.2	1	12.1	1
Illness, injury	5.1	3	0.2	2	6.1	3
Purchase/Improvement of dwelling	4.0	5			4.8	5
Plateau/Mountain Zone						
Agricultural production and operation	8.6	2	2.9	5	9.4	2
Non-agricultural activities	2.6	3	7.9	2	1.9	3
Household consumption needs	14.3	1	8.6	1	15.1	1
Illness, injury	1.4	4	5.0	3	0.9	4.5
Purchase/Improvement of dwelling	0.8	5			0.9	4.5
Purchase of consumer durables	0.4		3.0	4		

Source: NIS, CSES, 2008

- Across zones, the ranking of reasons for obtaining loans in both female and male headed agricultural households in the Plain Zone is the same as that of the national level. But in the Tonle Sap, Coastal and Plateau Zones, both households have taken loans primarily for their household consumption needs. In the Plateau/Mountain Zone, another primary purpose of the female headed agricultural households that entered the ranking is the purchase of household durables.

IV- Agricultural Households Livelihood activities

4.1 Income Sources

Like any other countries, agricultural households in Cambodia have several sources of economic activities and income. An important economic activity is agriculture. Seven out of ten members in agricultural households in the country are engaged primarily in agriculture, forestry and fisheries. Of these members, 40 percent work as own-account/self-employed, that is, operating their own economic activities in agriculture, forestry and fisheries while around 54 percent work without pay in their farm/agricultural activities.

Other important primary economic activities of agricultural households are manufacturing, wholesale and retail trade, and construction, in which 4-13 percent of the members in female headed agricultural households are engaged compared to 2-10 percent of male headed household members. Higher proportion of members in female headed households are male members engaged mainly in manufacturing and construction while female members are more likely to work in manufacturing and wholesale/retail trade.

At the zone level, a higher percentage of members in both male and female headed households in the Plain, Tonle Sap and Plateau/Mountain Zones are working in manufacturing while those in the Coastal Zone are more into wholesale and retail trade.

Table 4.1 Number and Percentage of Members 15 years old and over in Agricultural Households Reported Employed in Selected Industry/Economic Activities (Pertaining to their Primary Occupation), by Sex of the Household Heads, by Zone: 2008

Zone/Kind of Industry (Pertaining to the Primary Occupation)	All Agricultural Households		Female Headed Agricultural Hholds		Male Headed Agricultural Hholds	
	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)
Cambodia						
Agriculture, Forestry and Fisheries	4,213,710	72.0	707,129	67.2	3,506,577	73.0
Manufacturing	608,804	10.4	140,190	13.3	468,613	9.8
Construction	158,189	2.7	40,951	3.9	117,238	2.4
Wholesale and Retail	435,710	7.4	94,595	9.0	341,114	7.1
Transportation and Communication	124,729	2.1	24,009	2.3	100,718	2.1
Public Administration and Defense	96,403	1.6	8,740	0.8	87,662	1.8
Education	68,395	1.2	5,277	0.5	63,119	1.3
Health and Social Work	12,822	0.2	4,831	0.5	7,991	0.2
Plain Zone						
Agriculture, Forestry and Fisheries	1,883,751	69.6	341,655	66.1	1,542,096	70.4
Manufacturing	356,841	13.2	85,069	16.5	271,771	12.4
Construction	70,176	2.6	18,807	3.6	51,370	2.3
Wholesale and Retail	193,934	7.2	40,827	7.9	153,107	7.0
Transportation and Communication	48,821	1.8	9,131	1.8	39,690	1.8
Public Administration and Defense	44,729	1.7	4,470	0.9	40,258	1.8
Education	31,484	1.2	4,297	0.8	27,187	1.2
Health and Social Work	7,019	0.3	-	-	7,019	0.3
Tonle Sap Zone						
Agriculture, Forestry and Fisheries	1,403,784	72.7	243,232	70.2	1,160,551	73.2
Manufacturing	164,787	8.5	30,079	8.7	134,708	8.5
Construction	71,116	3.7	21,179	6.1	49,937	3.1
Wholesale and Retail	149,903	7.8	25,573	7.4	124,329	7.8
Transportation and Communication	43,158	2.2	9,824	2.8	33,334	2.1
Public Administration and Defense	22,050	1.1	3,398	1.0	18,652	1.2
Education	21,934	1.1	980	0.3	20,955	1.3
Health and Social Work	1,868	0.1	896	0.3	972	0.1
Coastal Zone						
Agriculture, Forestry and Fisheries	295,827	79.1	47,500	79.2	248,325	79.1
Manufacturing	10,376	2.8	1,890	3.2	8,486	2.7
Construction	4,214	1.1	-	-	4,214	1.3
Wholesale and Retail	45,152	12.1	9,126	15.2	36,026	11.5
Transportation and Communication	3,162	0.8	-	-	3,162	1.0
Public Administration and Defense	3,395	0.9	-	-	3,395	1.1
Education	5,542	1.5	-	-	5,542	1.8
Plateau/Mountain Zone						
Agriculture, Forestry and Fisheries	630,348	74.8	74,742	58.1	555,605	77.8
Manufacturing	76,800	9.1	23,152	18.0	53,648	7.5
Construction	12,683	1.5	965	0.8	11,717	1.6
Wholesale and Retail	46,721	5.5	19,069	14.8	27,652	3.9
Transportation and Communication	29,588	3.5	5,054	3.9	24,532	3.4
Public Administration and Defense	26,229	3.1	872	0.7	25,357	3.6
Education	9,435	1.1	-	-	9,435	1.3
Health and Social Work	3,935	0.5	3,935	3.1	-	-

Source: NIS, CSES, 2008

Among agricultural households with agriculture, forestry and fisheries as the main source of income, 1.7 million or 40 percent of its members are working primarily as self-employed/operating their own agricultural activities. These are more or less the full-time farm holders or agricultural operators in the country. Of these, 83 percent are residing in headed households. Further, the proportion of self-employed female members in female headed agricultural households is higher than their female counterparts in male headed agricultural households.

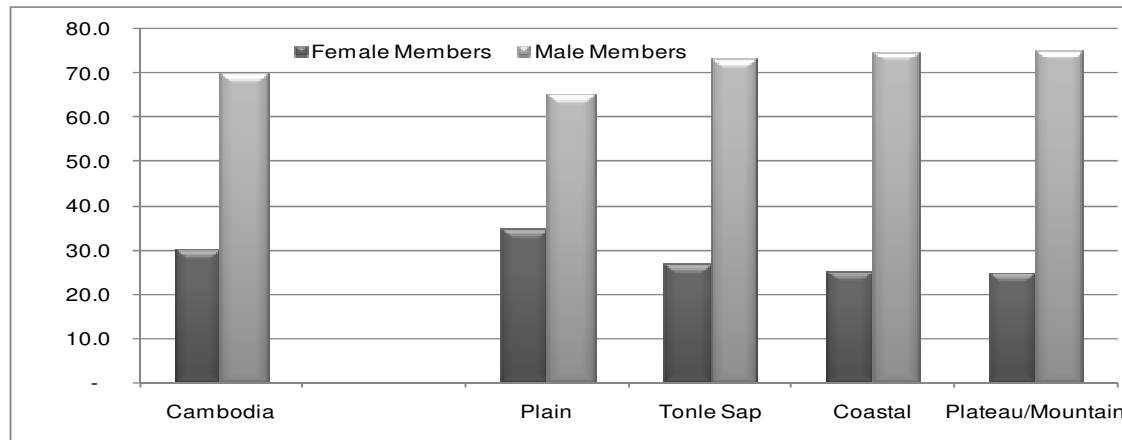
Table 4.2 Number and Percentage of Members Engaged in Agriculture, Forestry and Fisheries, by Sex of the Household Heads and Sex and Employment Status of the Members: 2008

Sex of Head/ Employment Status of Members	All Agricultural Households		FemaleHeaded Agricultural Households		Male Headed Agricultural Households	
	Number	Percent	Number	Percent	Number	Percent
Cambodia						
All Agricultural Hh Members	4,213,706	100.0	707,129	16.8	3,506,577	83.2
Paid Employee	256,565	6.1	79,299	1.9	177,266	4.2
Own account/self- employed	1,672,218	39.7	282,645	6.7	1,389,573	33.0
Unpaid family worker	2,283,803	54.2	345,185	8.2	1,938,618	46.0
Other status	1,120	0.0			1,120	0.0
Female Members	1,986,507	47.1	432,496		1,554,011	
Paid Employee	128,636	3.1	52,094	12.0	76,542	4.9
Own account/self- employed	536,924	12.7	232,958	53.9	303,966	19.6
Unpaid family worker	1,320,947	31.3	147,444	34.1	1,173,503	75.5
Male Members	2,227,199	52.9	274,633	6.5	1,952,566	46.3
Paid Employee	127,929	3.0	27,205	0.6	100,724	2.4
Own account/self- employed	1,135,294	27.0	49,687	1.2	1,085,607	25.8
Unpaid family worker	962,856	22.9	197,741	4.7	765,115	18.1
Other status	1,120	0.0			1,120	0.0

Source: NIS, CSES 2008

There are also 666 thousand own account working members (or 53 percent) with secondary occupation in agriculture, forestry and fisheries but with main occupation in non-agricultural activities. Hence, the total own-account workers or self-employed in agriculture, forestry and fisheries totaled to 2.3 million. These are the probable estimates of the agricultural holders/operators existing in the country. Of the total own account workers/self-employed in agriculture, forestry and fisheries, 30 percent are women and 70 percent are men.

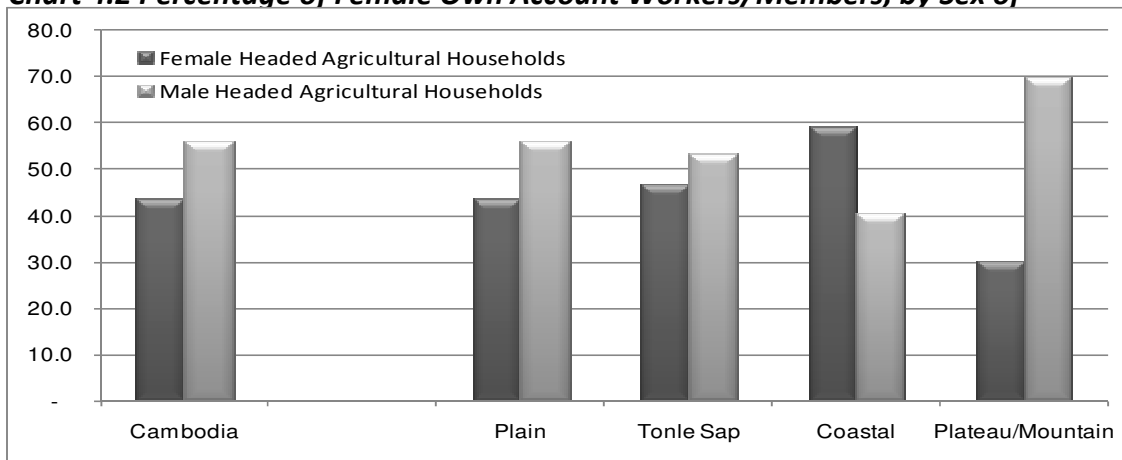
Chart 4.1 Percentage of Own Account Workers/Members, by Sex of Household Members, by Zone: 2008



Source: NIS, CSES 2008

Of the female own account farm workers/operators/holders, 44 percent belong to female headed agricultural households and 56 percent to male headed agricultural households. This is true among the zones except in the Coastal area where about 60 percent of their female own-account workers are members of female headed agricultural households.

Chart 4.2 Percentage of Female Own Account Workers/Members, by Sex of



Source: NIS, CSES 2008

The own account workers are being helped by around 2.3 million unpaid household members or 54 percent of the household members engaged primarily in agriculture, forestry and fisheries. In addition to these, about 42 percent of those with secondary occupation in agriculture, forestry and fisheries are also helping in their household's own farm/holding as unpaid working members. Thus, the total unpaid working members in agriculture, forestry and fisheries are about 2.8 million.

A higher proportion of female unpaid family workers is present in male headed agricultural households compared to their counterparts in female headed agricultural households. The

difference in the proportion of female unpaid family workers all throughout the zones between the female and male headed agricultural households is 17 percentage points.

Table 4.3 Percentage of Unpaid Family Workers, by Sex of Household Heads and Sex of Members, by Zone: 2008

Zone/Sex of Household Members	All Agricultural Households		Female Headed Agricultural Households		Male Headed Agricultural Households	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
Cambodia						
All Members	2,816,570		446,285		2,370,282	
Female Members	1,597,724	56.7	194,055	43.5	1,403,667	59.2
Male Members	1,218,846	43.3	252,230	56.5	966,615	40.8
Plain Zone						
All Members	1,238,790		195,122		1,043,667	
Female Members	671,596	54.2	80,542	41.3	591,054	56.6
Male Members	567,194	45.8	114,580	58.7	452,613	43.4
Tonle Sap Zone						
All Members	936,510		156,050		780,460	
Female Members	546,363	58.3	73,807	47.3	472,556	60.5
Male Members	390,147	41.7	82,243	52.7	307,904	39.5
Coastal Zone						
All Members	200,675		33,978		166,696	
Female Members	115,660	57.6	14,536	42.8	101,123	60.7
Male Members	85,015	42.4	19,442	57.2	65,573	39.3
Plateau/Mountain Zone						
All Members	440,595		61,135		379,459	
Female Members	264,105	59.9	25,170	41.2	238,934	63.0
Male Members	176,490	40.1	35,965	58.8	140,525	37.0

Source: NIS, CSES, 2008

In the agricultural households, the most common primary jobs reported during the CSES 2008 reference period by household members is skilled agricultural and fishery workers (59%). A higher proportion of female and male members in male headed agricultural households is engaged mainly as skilled agricultural and fishery workers; recording an average difference of 9 percentage points with their counterparts in female headed agricultural households.

Other occupations engaged in by more than 200 thousand agricultural household members are the elementary occupations such as domestic helpers, drivers, etc; craft and related workers; plant and machine operators and assemblers; and, service and shop and market service workers. The proportions of members in female headed agricultural households are higher than that of male headed ones in service and shop and market sale workers and elementary occupation (each with difference of 3 percentage points), craft and related trade workers (differ by 2 percentage points) and plant and machine operators and assemblers (differ by 1 percentage point). Further a higher proportion of female members living in female headed agricultural households is engaged in elementary occupations or working as sales workers or as plant and machine operators and assemblers. Male members of female headed agricultural households are more engaged in elementary occupations, craft and related workers, and service and shop and market sales workers.

Table 4.4 Number and Percentage of Members 15 years old and over in Agricultural Households Reported Employed in Primary Occupation, Sex of the Household Heads and Sex and Occupation of Members: 2008

Zone/Primary Occupation of the Household Members	All Agricultural Households		Female-Headed Agricultural Households		Male-Headed Agricultural Households	
	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
Cambodia						
All Members 15 years old and over	6,351,243		1,201,779		5,149,464	
Armed Forces (included soldiers, policemen & P.M.)	10,764	0.2	969	0.1	9,795	0.2
Legislators, Senior Officials and Managers	38,867	0.6	3,694	0.3	35,172	0.7
Professionals	87,127	1.4	10,905	0.9	76,222	1.5
Technical and Associate Professionals	66,165	1.0	4,231	0.4	61,933	1.2
Clerks	44,964	0.7	8,197	0.7	36,767	0.7
Service and Shop and Market Sale Workers	291,346	4.6	85,372	7.1	205,974	4.0
Skilled Agricultural and Fishery Workers	3,715,696	58.5	591,602	49.2	3,124,095	60.7
Craft and Related Trade Workers	431,479	6.8	97,243	8.1	334,235	6.5
Plant and Machine Operators and Assemblers	419,289	6.6	90,769	7.6	328,520	6.4
Elementary Occupations	648,927	10.2	149,835	12.5	499,095	9.7
Other Occupation, not classified elsewhere	1,419	0.0			1,419	0.0
Female Members	3,384,921		816,201		2,568,720	
Legislators, Senior Officials and Managers	6,262	0.2	2,851	0.3	3,411	0.1
Professionals	29,042	0.9	6,085	0.7	22,957	0.9
Technical and Associate Professionals	10,342	0.3	2,790	0.3	7,552	0.3
Clerks	16,834	0.5	5,341	0.7	11,493	0.4
Service and Shop and Market Sale Workers	225,941	6.7	72,714	8.9	153,226	6.0
Skilled Agricultural and Fishery Workers	1,755,581	51.9	363,114	44.5	1,392,469	54.2
Craft and Related Trade Workers	183,515	5.4	43,054	5.3	140,460	5.5
Plant and Machine Operators and Assemblers	226,312	6.7	67,913	8.3	158,399	6.2
Elementary Occupations	334,724	9.9	92,137	11.3	242,590	9.4
Other Occupation, not classified elsewhere	1,419	0.0			1,419	0.1
Male Members	2,966,323		385,579		2,580,744	
Armed Forces (included soldiers, policemen & P.M.)	10,764	0.4	969	0.3	9,795	0.4
Legislators, Senior Officials and Managers	32,605	1.1	843	0.2	31,761	1.2
Professionals	58,085	2.0	4,820	1.3	53,265	2.1
Technical and Associate Professionals	55,823	1.9	1,441	0.4	54,381	2.1
Clerks	28,130	0.9	2,856	0.7	25,274	1.0
Service and Shop and Market Sale Workers	65,405	2.2	12,658	3.3	52,748	2.0
Skilled Agricultural and Fishery Workers	1,960,115	66.1	228,488	59.3	1,731,626	67.1
Craft and Related Trade Workers	247,964	8.4	54,189	14.1	193,775	7.5
Plant and Machine Operators and Assemblers	192,977	6.5	22,856	5.9	170,121	6.6
Elementary Occupations	314,203	10.6	57,698	15.0	256,505	9.9

Source: NIS, CSES 2008

4.2 Crop Production

The CSES 2008 includes ten classifications of crops, in which five are broad annual crop categories, two pertain to flower and fodder crops whether temporary or permanent and the other three are for permanent crops. Temporary or annual crops are those being grown in a cycle of one or less than one year. Permanent crops are those sown with more than one year growing cycle. The two seasons mentioned in the survey are the wet or rainy season and the dry or hot season.

About 2.7 million plots are used in planting cereals during the wet season such as rice (main staple food in Cambodia), corn, etc. These plots have a total area of 1.8 million hectares, giving an average of 0.68 hectare per plot. The area cultivated to cereals is about 1.9 million hectares or 0.72 hectare per plot, which means that around 6 percent of the total plot area is planted with cereals twice a year. Around 98 percent of the total area cultivated with cereals is harvested during the reference period.

During the dry season, the number of plots used in growing cereals or grains becomes 405 thousand plots, which is only 15 percent of the plots used in the wet season. These plots measure about 254 thousand hectares or an average of 0.63 hectare per plot. However, though the average physical area per plot decrease by 0.05 hectare, the average cultivated area per plot increase from 0.72 hectare to 0.74 hectare and average harvested area per plot from 0.71 hectare to 0.73 hectare. This implies that an increase in the percentage of plot area in which the cultivation of cereals is done more than once a year.

The average area cultivated to rice or grains of female headed agricultural households is lower than the average cultivated rice or grain area of male headed agricultural households by 0.10 hectare. At the same time, the difference in the average harvested area between these two types of agricultural households is also 0.10 hectare. However, the difference in the average area cultivated and average area harvested between these agricultural households decreased in the dry season to 0.05 and 0.06 hectare due to the decrease in the number of plots used during such season.

Other temporary crops reported by agricultural households with decrease in the average cultivated area per plot from the wet season to the dry season are tubers and root crops and crops with industrial purposes.

Table 4.5 Number of Plots and Average Physical Area, Average Area Cultivated and/or Harvested to Crops, by Sex of Household Heads, by Season and Categories of Crops: 2008

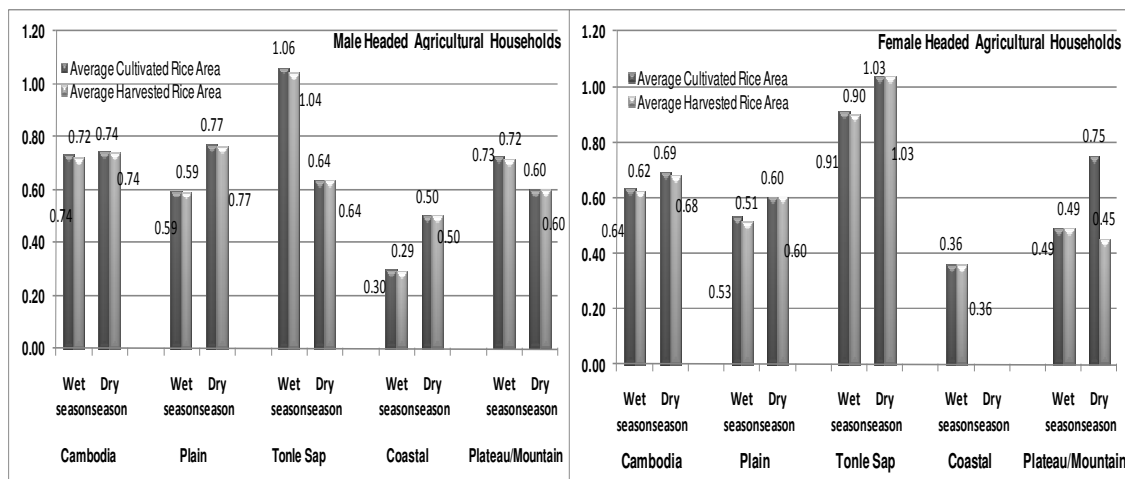
Season/ Categories of Crops	Female Headed Agricultural Households				Male Headed Agricultural Households			
	No. of Plots	Average Physical Area	Average Cultivated Area	Average Harvest ed Area	No. of Plots	Avera ge Physi cal Area	Average Cultivat ed Area	Ave rage Har vest ed Are a
Wet Season								
Cereals or grains	472,606	0.59	0.64	0.62	2,194,404	0.70	0.74	0.72
Tubers/Root crops	4,598	1.35	1.28	1.26	54,546	1.14	1.25	1.19
Leguminous plants	3,828	0.33	0.15	0.15	13,329	0.87	0.57	0.56
Industrial annual crops	4,699	1.25	0.45	0.45	22,912	0.89	0.73	0.73
Vegetables	10,195	0.33	0.14	0.14	84,008	0.50	0.14	0.14
Fruits and nut trees	36,533	0.47	0.24	0.24	122,797	0.96	0.41	0.40
Ind'l permanent crops	11,095	0.34	0.02	0.02	35,751	0.63	0.37	0.37
Dry Season								
Cereals or grains	48,681	0.61	0.69	0.68	355,844	0.63	0.74	0.74
Tubers/Root crops	1,662	0.32	1.06	1.06	9,538	0.92	1.01	1.01
Leguminous plants	851	0.08	0.15	0.15	18,231	0.83	2.18	2.18
Industrial annual crops	6,118	0.86	0.46	0.44	39,563	0.38	0.36	0.34
Vegetables	9,152	0.41	0.16	0.16	58,801	0.78	0.14	0.14
Fruits and nut trees	27,637	0.74	0.38	0.38	113,501	1.11	0.35	0.35
Ind'l permanent crops	3,777	0.84	0.55	0.55	16,309	0.40	0.23	0.23

Source: NIS, CSES 2008

Across zones during the wet season, the greatest difference in the average area cultivated and average area harvested to rice between female and male headed agricultural households can be observed in the Plateau/Mountain Zone while the lowest difference is in the Plain and

Coastal Zones. Whereas, during dry season, those agricultural households headed by women in the Plateau/Mountain Zone have reported higher average cultivated rice area per plot but lower average harvested rice area per plot than male headed agricultural households. On the other hand, whatever area has been planted to rice in the Plain and Tonle Sap Zones by female and male headed agricultural households has been completely harvested. Female headed agricultural households in the Coastal Zone did not report any plot cultivated to rice during the dry season.

Chart 4.3 Average Cultivated and Harvested Area to Rice, by Sex of Household Heads, by Zone: 2008



Source: NIS, CSES 2008

4.2.1 Crop Loss

The CSES 2008 included data items on crop loss during the post harvest period. Crop loss after the harvest in the wet and dry seasons is common in the cereals harvested for grains such as rice, corn, etc., leguminous plants mainly for grain excluding soybeans and groundnuts, annual crops for industrial purposes, vegetables, fruit and nut trees and permanent crops mainly for industrial purposes. Crop loss may be due to robbery, eaten by mice and other pests, floods, drought or other calamities, etc.

Female headed agricultural households suffered loss of 19 million kg (or 3 percent of the produce) of cereal crops, 790 thousand kg (or 7 percent) of vegetables, 251 thousand kg (or 1 percent) of tubers, roots and bulk crops and 152 thousand kg (or 1 percent) of fruits and nuts during the post harvest in the wet season. Though these households produce only 101 thousand kg of leguminous plants, about 10 percent of this crop is also lost due to pests, robbery, etc.

Female headed agricultural households also experienced loss of million or thousand kilograms of crops after the harvest during the dry season. Crop loss is mostly on the following: fruits and nuts (4.5 million kg or 6 percent of the total produce), cereal crops (1.7 million kg or 2 percent), crops mainly for industrial purposes (266 thousand kg or 11 percent)

and vegetables (122 thousand kg or 3 percent).

Male headed agricultural households are not exempted in having crop loss during the post harvest. Among the crops produced during the wet season, these households lost 113 million kg (or 3 percent of the crops produced) of cereals, 1.5 million kg (0.4 percent) of tubers, roots and bulk crops, 231 thousand kg (3 percent) of legumes, 675 thousand kg (or 2.4 percent) of crops mainly for industrial purposes, 884 thousand kg (1 percent) of vegetables, 766 thousand kg (1 percent) of fruits and nuts and 173 thousand kg (or 1 percent) of industrial permanent crops. These households also experience loss of almost the same kind of crops including horticultural crops after the harvest of these crops during the dry season.

Across zones, more million kilograms of crops are lost during the wet season than in the dry season. In the Plain Zone, male headed agricultural households incurred loss of cereal crops and tuber/root crops in the wet season 6-7 times the loss of the same crops of the female headed agricultural households as well as 18 times the cereal crop loss of the female headed agricultural households during the dry season. On another hand, the female headed ones lost fruits and nuts in the dry season almost 44 times than the loss incurred by the male headed agricultural households.

The loss of cereal crops of the male headed agricultural households in other zones during the wet season is from 5 to 9 times of the loss of the same crops incurred by the female headed agricultural households.

Table 4.6 Crops Produced and Loss, by Sex of the Household Heads and Main Group of Crops: 2008

Zone/Main Group of Crops	Female Headed Agricultural Households			Male Headed Agricultural Households		
	Quantity (in kg.) of Harvest or Produce	Quantity Loss (in kg) in Post Harvest	Percentage (%)	Quantity (in kg.) of Harvest or Produce	Quantity Loss (in kg) in Post Harvest	Percentage (%)
Cambodia						
Wet season						
Cereals	588,861,908	19,327,062	3.3	3,677,031,885	113,115,087	3.1
Tubers, Root and Bulk Crops	41,397,082	250,599	0.6	376,883,576	1,510,669	0.4
Leguminous plants	101,371	9,784	9.7	7,451,713	230,564	3.1
Crops mainly for industrial purposes	12,548,762	21,727	0.2	28,678,627	674,668	2.4
Vegetables mainly for human consumption	12,121,728	789,616	6.5	159,044,636	884,217	0.6
Fruit and Nut Trees	23,546,891	151,502	0.6	56,845,342	765,528	1.3
Permanent crops mainly for industrial purposes	1,891,062	54,067	2.9	14,746,219	172,671	1.2
Dry season						
Cereals	91,175,359	1,664,447	1.8	992,135,708	25,210,861	2.5
Tubers, Root and Bulk Crops	17,681,972	96,670	0.5	162,033,258	672,267	0.4
Leguminous plants	85,103			8,935,956	391,594	4.4
Crops mainly for industrial purposes	2,492,348	265,969	10.7	67,801,843	214,012	0.3
Vegetables mainly for human consumption	4,904,570	122,105	2.5	52,864,620	949,233	1.8
Fruit and Nut Trees	81,904,379	4,490,290	5.5	46,038,670	519,263	1.1
Permanent crops mainly for industrial purposes	718,319	5,009	0.7	8,525,912	572,171	6.7

Source: NIS, CSES 2008

4.2.2 Value and cost of crop production

The estimated total value of crops harvested/produced in all seasons is 2.2 billion dollars, 45 percent and 46 percent of which are estimated value of cereals and fruits and nuts, respectively. This estimated value of crop production is mostly contributed by male headed agricultural households (92 percent). The produced crops of female headed agricultural households are valued at 8 percent of the estimated total value of crop production.

The estimated value of all crops produced from female headed agricultural households is higher during the wet season than in the dry season. But male headed agricultural households have higher estimated value of crop production during the dry season than in the wet season. This national situation is also reflected in Tonle Sap Zone. However, in the other zones, higher estimated value of produced crops in wet season is reached by both types of households compared to those produced in the dry season.

Table 4.7 Estimated Value of Crop Production, by Sex of the Household Heads, by Zone: 2008

Zone/Season	All Agricultural Households	Female Headed Agricultural Households	Male Headed Agricultural Households
Cambodia			
All seasons	2,216,470,643	172,014,640	2,044,456,002
Wet season	883,782,809	124,389,172	759,393,637
Dry season	1,332,687,834	47,625,468	1,285,062,365
Plain Zone			
All seasons	707,969,140	101,145,524	606,823,615
Wet season	389,523,758	58,596,169	330,927,590
Dry season	318,445,381	42,549,356	275,896,026
Tonle Sap Zone			
All seasons	1,324,529,005	54,060,127	1,270,468,878
Wet season	320,670,463	50,309,557	270,360,906
Dry season	1,003,858,542	3,750,570	1,000,107,972
Coastal Zone			
All seasons	60,357,443	7,490,836	52,866,608
Wet season	57,875,799	6,770,988	51,104,811
Dry season	2,481,644	719,848	1,761,797
Plateau/Mountain Zone			
All seasons	123,615,055	9,318,154	114,296,901
Wet season	115,712,789	8,712,459	107,000,330
Dry season	7,902,266	605,695	7,296,571

Source: NIS, CSES, 2008

The total cost of crop cultivation incurred for all seasons has amounted to 1.6 billion dollars; in which 70 percent are incurred during the wet season and 30 percent in the dry season. The top five items of expenditures in cultivating crops are the following: chemical fertilizers (28 percent of the total cost), payment to hired draft power (23 percent), planting materials such as seeds, etc. (17 percent), other hired labor charges (8 percent) and animal and plant manure (5 percent).

The cost of cultivating crops incurred for both seasons by male headed agricultural households is seven times the cost spent by female headed agricultural households. The latter has incurred expenses in the wet season four times the expenses in the dry season. On the

other hand, the cost incurred by the male headed agricultural households in cultivating the crops during the wet season is twice the cost in the dry season. Like female headed agricultural households, male headed ones have spent more on chemical fertilizers, planting materials, hired draft power, irrigation charges and oil, gas or diesel.

Table 4.8 Estimated Cost (in \$) of Cultivating Crop, by Sex of the Household Heads and Type of Cost, by Zone: 2008

Zone/Type Cost	Female Headed Agricultural Households			Male Headed Agricultural Households		
	All Seasons	Wet season	Dry season	All Seasons	Wet season	Dry season
Cambodia						
Total	194,959,315	155,354,539	39,604,776	1,373,092,743	939,653,913	433,438,830
Planting materials	35,130,618	27,479,397	7,651,222	236,166,676	148,889,543	87,277,134
Chemical fertilizers	57,699,269	46,961,502	10,737,767	387,981,562	259,775,489	128,206,073
Animal and plant manure	12,196,435	11,246,921	949,514	70,115,434	55,989,644	14,125,790
Electricity for the farming	31,869	21,921	9,948	203,676	203,676	
Oil, gas or diesel oil for the farming	6,611,021	3,556,225	3,054,795	59,706,367	27,464,302	32,242,065
Storage items	5,027,967	4,041,955	986,012	38,547,344	27,027,239	11,520,106
Payment to hired draft power	44,262,891	37,707,420	6,555,471	311,365,627	254,592,456	56,773,171
Other hired labour charges	15,155,768	11,907,332	3,248,436	112,008,843	84,267,324	27,741,518
Irrigation charges	7,254,036	2,101,405	5,152,631	60,037,944	8,806,573	51,231,371
Services/ technical support	47,257	47,257		287,306	101,922	185,383
Transportation of input materials and products	6,280,690	5,161,927	1,118,762	47,116,083	34,208,960	12,907,123
Repair and maintenance of farm house	1,326,486	1,231,374	95,112	14,194,249	12,865,577	1,328,672
Rental paid to owner for farm land, farm house	3,935,009	3,889,903	45,106	35,361,632	25,461,208	9,900,423

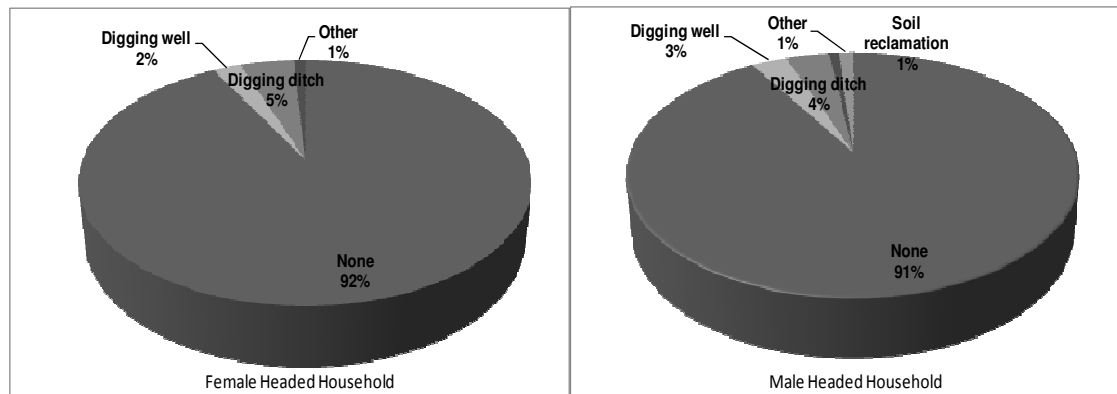
Source: NIS, CSES 2008

4.3 Agricultural Practices

The CSES 2008 included questions on the type of investment made on each agricultural plot cultivated during the reference period. This question pertains more or less to the agricultural practices being done by the agricultural households during the reference period. The types of investment enumerated in the survey are: digging well; digging ditch; terracing; drainage construction; soil reclamation; establishing fruit and nut trees and other types not included in the mentioned categories.

In nine out of ten cultivated plots of female headed agricultural households, no investments have made to improve these plots. These plots occupied about 417 thousand hectares or an average 0.6 hectare per plot. Likewise, male headed agricultural households have not done any improvement or investment on most of their plots. These plots measure around 2.4 million hectares or 0.7 hectare per plot.

Chart 4.4 Percentages of Plots with Investments Made, by Sex of Household Heads, by Zone: 2008



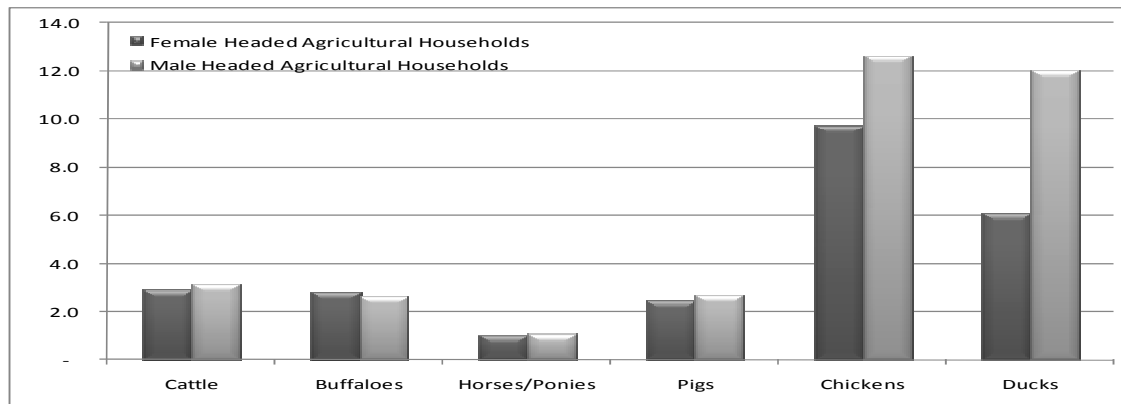
Source: NIS, CSES 2008

Few female headed agricultural households have dug ditches or made dikes in some (about 5%) of its plots where water can flow for the crops and have dug wells in other plots as source of water for irrigation. Also few male headed households have made investments; about 4 percent of their total plots have ditches and another 3 percent have wells. Digging ditches and wells is commonly presence in the plots of some female and male headed agricultural households in the Plain and Tonle Sap Zones.

4.4 Livestock

All agricultural households have engaged in raising livestock during the survey reference period. More or less 5 in every ten female headed agricultural households and 6 out of ten male headed agricultural households have raised a total of 3.7 million cattle, recording an average of 3 cattle per household. Further, 23 percent of all female headed agricultural households and 30 percent of all male headed agricultural households have tended 1.5 million pigs, giving an average of 2 pigs per female headed household and 3 pigs per male headed household. In terms of poultry, the majority of female (70 percent) and male (74 percent) heads have their households engaged in chicken farming. The total headcount of chicken raised by both households is about 18 million. Male headed agricultural households have a higher average number of chickens than their female counterparts.

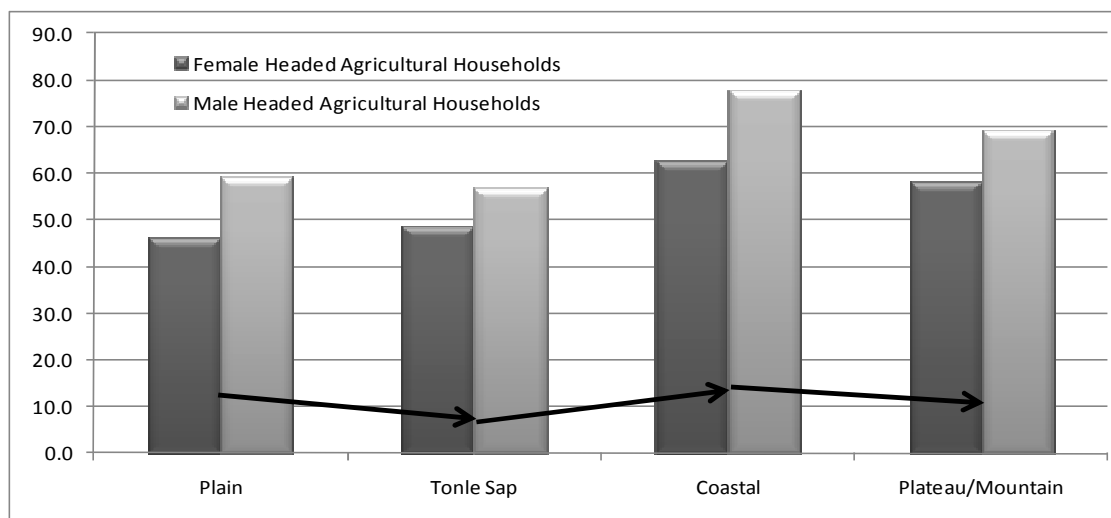
Chart 4.5 Average Number of Livestock and Poultry Raised, by Sex of Household Heads: 2008



Source: NIS, CSES 2008

Raising cattle and chicken are reported by female and male headed agricultural households in all zones. The percentage difference between female and male headed agricultural households raising cattle is higher in the Coastal Zone and lower in Tonle Sap Zone.

Chart 4.6 Percentage Differences of Households Reporting Cattle by Sex of Household Heads: 2008



Source: NIS, CSES 2008

Total sale value of all livestock and poultry raised by female headed agricultural households amounted to 175 billion riels or 43 million dollars, averaging to 424 thousand riels per household. At the same time, male headed agricultural households sold livestock and poultry in the total amount of 1.3 trillion riels or 313 million dollars, recording an average of 794 thousand riels per household.

The average value sold of any livestock and poultry per male headed agricultural household at the national level is always higher than the average value sold per female headed agricultural household. This situation is also true in the Plain and Mountain Zones. But in Tonle Sap Zone, the average value of sold buffaloes and chicken per female headed agricultural households is higher than that of the male headed ones; likewise, in the Coastal Zone, the sold cattle and pigs per female headed household have higher average value.

The average value of sold livestock or poultry products per female headed agricultural household is about 9 thousand riels, which is 2 thousand riels lower than that of male headed agricultural households. Highest recorded average value sold of livestock/poultry products from the female headed agricultural households is in Tonle Sap Zone while from the male headed ones is in the Coastal Zone.

Table 4.9 Number of Household Reporting and Average Value Sold, by Sex of Household Head and Kind of Livestock and Poultry, by Zone: 2008

Zone/Kind of Livestock	All Agricultural Households		Female Headed		Male Headed	
	Number Reporting	Average Value Sold	Number Reporting	Average Value Sold	Number Reporting	Average Value Sold
Cambodia						
Cattle	1,191,251	558,920	202,067	403,526	989,184	590,663
Buffaloes	193,571	707,719	24,096	695,814	169,475	709,411
Horses/Ponies	20,422	147,817	2,126		18,296	164,994
Pigs	579,587	898,464	93,359	622,920	486,228	951,370
Goats	3,396	28,776			3,396	28,776
Chickens	1,486,887	70,282	287,719	60,380	1,199,168	72,657
Ducks	457,422	62,656	68,335	18,303	389,087	70,445
Plain Zone						
Cattle	519,638	576,491	100,713	497,856	418,925	595,395
Buffaloes	95,640	1,000,725	16,485	848,643	79,155	1,032,397
Horses/Ponies	7,380	409,041	788		6,592	457,937
Pigs	275,853	748,752	48,311	276,285	227,542	849,065
Chickens	661,697	64,132	148,481	42,875	513,216	70,282
Ducks	224,186	73,528	42,581	11,355	181,605	88,106
Tonle Sap Zone						
Cattle	379,394	549,774	66,062	243,014	313,332	614,450
Buffaloes	56,617	308,276	7,611	364,794	49,006	299,498
Horses/Ponies	5,576		1,338		4,238	
Pigs	149,732	1,329,523	22,828	827,281	126,904	1,419,868
Goats	1,517				1,517	
Chickens	501,086	85,156	94,009	99,025	407,077	81,953
Ducks	128,293	44,820	17,177	44,664	111,116	44,845
Coastal Zone						
Cattle	106,414	665,166	15,181	760,338	91,233	649,329
Buffaloes	2,335	528,947			2,335	528,947
Horses/Ponies	7,466				7,466	
Pigs	67,072	905,014	11,159	2,238,476	55,913	638,885
Goats	1,879	52,008			1,879	52,008
Chickens	114,851	86,212	18,449	51,073	96,402	92,937
Ducks	44,002	118,492	7,196		36,806	141,659
Plateau/Mountain Zone						
Cattle	185,805	467,606	20,111	189,054	165,694	501,415
Buffaloes	38,979	579,690			38,979	579,690
Pigs	86,930	626,014	11,061	85,284	75,869	704,847
Chickens	209,253	45,366	26,780	28,193	182,473	47,886
Ducks	60,941	19,888	1,381		59,560	20,350

Source: NIS, CSES, 2008

4.5 Fishing

One of the sub-sections of the economic activities section in the CSES 2008 is about the fishing activity of the households. There are two kinds of fishing activity included in the survey, one is on raising fish/shrimp/crabs/oysters and the other one is on catching fish and other aquatic species. Raising fish/shrimp/crabs/other aquatic species deals more in aquaculture which is undertaken in a controlled environment while catching fish and other aquatic species is an activity done in fresh or marine waters or deep seas.

Of the total agricultural households in Cambodia, 3 percent have engaged in raising fish and 64 percent in catching fish, shrimp, crabs or oysters. Among female headed agricultural

households, 5,796 households (1 percent) raised fish/shrimps/crabs/ oysters. However, not all these households owned or operated a pond for fish; more or less 85 percent of these fish raisers have established their own fish/shrimp culture ponds. Around half (51 percent) of all female headed agricultural households have also ventured into catching fish, shrimp, crabs and other aquatic species.

With regards to male headed agricultural households, 4 percent are engaged in raising fish, of which around 44 thousand or 71 percent have their own operated fishponds. About 67 percent or 1.1 million male headed agricultural households are catching fish and other aquatic species in the Cambodian waters.

Only female headed households in the Plain Zone have engaged in both types of fishing activities. In the other three zones, female headed households are only involved in catching fish and other aquatic species. Their male headed counterparts (in all zones) have engaged in raising and operating fishponds as well as in catching fish and other aquatic species. The highest proportion of male headed households operating fishponds is in the Plain Zone while the highest proportion of male headed households catching fish is in the Plateau/Mountain Zone.

Table 4.10: Number and Percentage of Agricultural Households Engaged in Fishing, by Sex of the Household Heads and Type of Cost, by Zone: 2008

Zone/Fisheries Indicators	All Agricultural Households		Female Headed Agricultural Hhlds		Male Headed Agricultural Hhlds	
	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)
Cambodia						
Raising fish and operating own fishpond	48,833	2.4	4,947	1.2	43,885	71.12
Catching fish, shrimp, crabs, oysters	1,303,748	64.2	217,580	52.7	1,086,167	2.7
Plain Zone						
Raising fish and operating own fishpond	35,353	3.8	4,947	2.3	30,405	60.7
Catching fish, shrimp, crabs, oysters	534,581	57.7	104,050	47.8	430,531	
Tonle Sap Zone						
Raising fish and operating own fishpond	6,521	0.9			6,521	1.2
Catching fish, shrimp, crabs, oysters	453,958	66.0	76,794	56.4	377,163	68.3
Coastal Zone						
Raising fish and operating own fishpond	1,836	1.3			1,836	1.6
Catching fish, shrimp, crabs, oysters	91,928	64.8	9,357	38.6	82,571	70.2
Plateau/Mountain Zone						
Raising fish and operating own fishpond	5,123	1.9			5,123	2.1
Catching fish, shrimp, crabs, oysters	223,281	81.4	27,379	79.2	195,902	81.7

Source: NIS, CSES, 2008

The five thousands female headed agricultural households that engaged in fish/shrimp culture have spent 2.4 billion riels or 584 thousand dollars in operating such activity. On the average, each spent 484 thousand riels. The bulk of this amount was spent on breeding stock and feeds. Their male counterparts spent 10.7 billion riels (2.6 million dollars) or an average of 243 thousand riels per household.

Since female headed agricultural households are not engaged in fish/shrimp culture in Tonle Sap, Coastal and Plateau Zones, only those in the Plain Zone have reported the amount spent

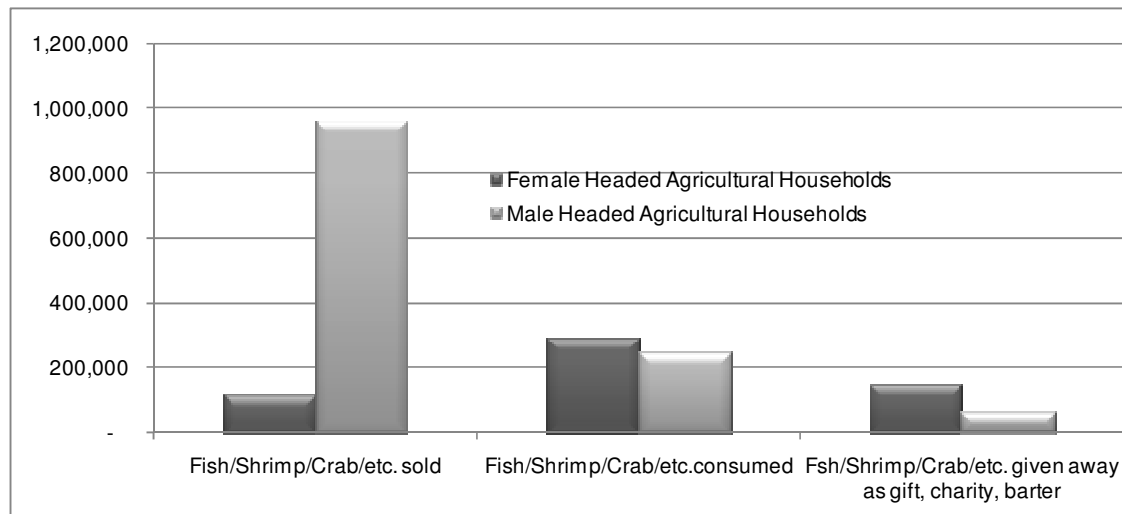
in operating fish/shrimp culture. Male headed agricultural households in the Plain Zone have the highest average amount spent in culturing fish/shrimp/other aquatic species while the lowest average is reported in the Coastal Zone where there are only two types of expenses reported: feeds for fish and repair and maintenance of nets/traps.

The total value received from the fish/shrimp/other aquatic species cultured during the reference period by female headed agricultural households, specifically in the Plain Zone, has amounted to 1.4 billion riels (345 thousand dollars) or an average of 286 thousand riels per household. This amount is computed from the following: proceeds from the sale of cultured fish, shrimps, crabs, etc., value consumed by the households, value given away as gifts, charity, barter, etc., value of those used for drying, making fish sauce, animal feeds and other disposals made.

Male headed agricultural households involved in fish/shrimp culture received a total of 36.9 billion riels (9 million dollars) or an average of 840 thousand riels per household. Those in the Plain Zone received the highest average amount from the disposed cultured fish/shrimp/crabs/other aquatic species.

The average amount received per female headed agricultural household from fish/shrimp culture is only one-third of the average amount received per male headed agricultural household. Specifically male headed households received more proceeds from the sale of fish, shrimp, crabs and other aquatic species. On the other hand, female headed households consumed 81 percent of the cultured fish/shrimps/crabs/other aquatic species.

Chart 4.7 Average Amount Received from Fish/Shrimp Culture, by Sex of Household Heads, by Zone: 2008



Source: NIS, CSES 2008

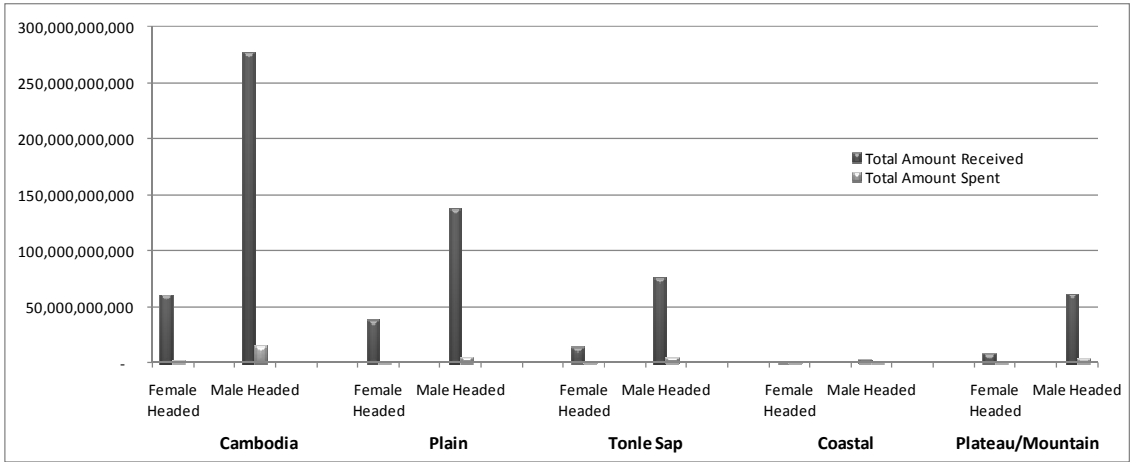
4.6 Forestry

In every 5 agricultural household, two households (whether female headed or male headed) are engaged in forestry activities such as gathering firewood, logging, collecting palm juice or root crops, etc.

The total amount received by female headed agricultural households from forestry activities is 60.4 billion riels (14.7 million dollars) or an average of 340 thousand riels per household. Male headed agricultural households have received the amount of 277.6 billion riels (67.7 million dollars) or an average of 403 thousand riels per household. This average amount received by male headed households is 0.18 percentage points higher than female headed households.

Female headed agricultural households engaged in forestry activities have spent 2 billion riels (494 thousand dollars) or an average of 11,432 riels per household. Male headed households spent a total amount of 15.3 billion riels (3.7 million dollars) or an average of 22,239 riels per household. More than 80 percent of the total expenses of both households are used for tools and equipment including maintenance, hired labor charges and fuel.

Chart 4.8 Total Amount Received and Spent in the Forestry Activities, by Sex of Household Heads, by Zone: 2008



Source: NIS, CSES 2008

V- Status of the Agricultural Households Livelihood outcomes

This chapter concentrates on the outcomes of livelihood strategies agricultural households in rural areas pursue (Chapter 4) on the basis of their assets (Chapters 2 and 3). People often pursue a range of livelihood outcomes such as improved food and nutrition security, income security, good health, high status, reduced vulnerability, and so forth. This chapter presents sex-disaggregated data on a number of livelihood outcomes included in CSES 2008. These are: housing conditions, access to safe drinking water and sanitation, access to electricity and sources of fuel for cooking.

5.1 Housing Conditions

Wall Materials

There are eight construction materials specified in the 2008 CSES that are used for the wall of the dwelling units of the agricultural households. Four of these materials are hard or permanent and the other four are temporary or unstable materials for the walls of dwelling units.

About 62 percent of the agricultural households choose to use the strong wall materials, of which the most commonly use are the woods or logs (53 percent). About 6 percent have availed of the concrete, brick or stone walls. On the other hand, significant proportion of agricultural households uses bamboos/thatches/ leaves/grasses (36 percent) though these are unsafe construction materials especially during calamities.

Two in every five female headed agricultural households consider the strong materials for the walls of their dwelling while half of these households prefer walls made of bamboos/thatches/leaves/grass.

The choices of the male headed agricultural households are opposite to their women counterpart. Half of these households use the woods and logs as their wall materials while another 40 percent use the less stable ones; may be, because of cheaper price and coolness of these materials during hot weather though these are not good during rainy/stormy season.

In the case of other strong construction wall materials, higher proportion of male headed agricultural households makes use of the concrete/brick/stone while slightly higher percentage of female heads have used galvanized iron/aluminum/ other metal sheets for their dwelling unit walls.

Table 5.01 Percentage of Agricultural Households, by Sex of the Household Head and Primary Construction Material of the Wall of the Housing/Dwelling Unit, by Zone: 2008

Zone/Construction Materials of the Outer Wall	All Households	Female Headed	Male Headed
Cambodia			
Wood or logs	50.5	41.2	52.8
Concrete, brick, stone	4.9	2.3	5.5
Galvanized iron or aluminium or other metal sheets	3.6	4.0	3.5
Bamboo, Thatch/leaves, Grass	39.1	50.7	36.2
Plywood	0.7	0.4	0.8
Makeshift, mixed materials	0.8	0.9	0.7
Clay/dung with straw	0.4	0.3	0.4
Plain Zone			
Wood or logs	41.6	35.1	43.6
Concrete, brick, stone	5.9	2.3	7.0
Galvanized iron or aluminium or other metal sheets	5.4	5.8	5.2
Bamboo, Thatch/leaves, Grass	45.0	55.1	41.9
Plywood	1.2	0.7	1.3
Makeshift, mixed materials	0.4	0.4	0.3
Clay/dung with straw	0.5	0.6	0.5
Tonle Sap Zone			
Wood or logs	53.5	45.5	55.5
Concrete, brick, stone	4.2	2.1	4.8
Galvanized iron or aluminium or other metal sheets	2.1	2.9	1.9
Bamboo, Thatch/leaves, Grass	37.6	47.0	35.3
Plywood	0.4		0.5
Makeshift, mixed materials	1.8	2.1	1.7
Clay/dung with straw	0.3		0.4
Coastal Zone			
Wood or logs	57.2	63.7	55.9
Concrete, brick, stone	5.8	6.2	5.7
Galvanized iron or aluminium or other metal sheets	5.2	0.3	6.2
Bamboo, Thatch/leaves, Grass	31.7	29.6	32.1
Clay/dung with straw	0.1	0.2	0.0
Plateau/Mountain Zone			
Wood or logs	69.2	47.4	72.4
Concrete, brick, stone	2.4		2.7
Galvanized iron or aluminium or other metal sheets	1.0		1.1
Bamboo, Thatch/leaves, Grass	26.9	52.0	23.3
Plywood	0.4		0.4
Makeshift, mixed materials	0.1	0.6	

Source: NIS, CSES, 2008

Across zones, same preferences of the female and male headed agricultural households at the national level concerning wall materials are reported in the Plain, Tonle Sap and Plateau/Mountain Zones. While in Coastal Zone, both households prefer the woods or logs and other strong wall materials to temporary or unstable construction materials; may be because these households in Coastal Zone are more prone to storms and other calamities.

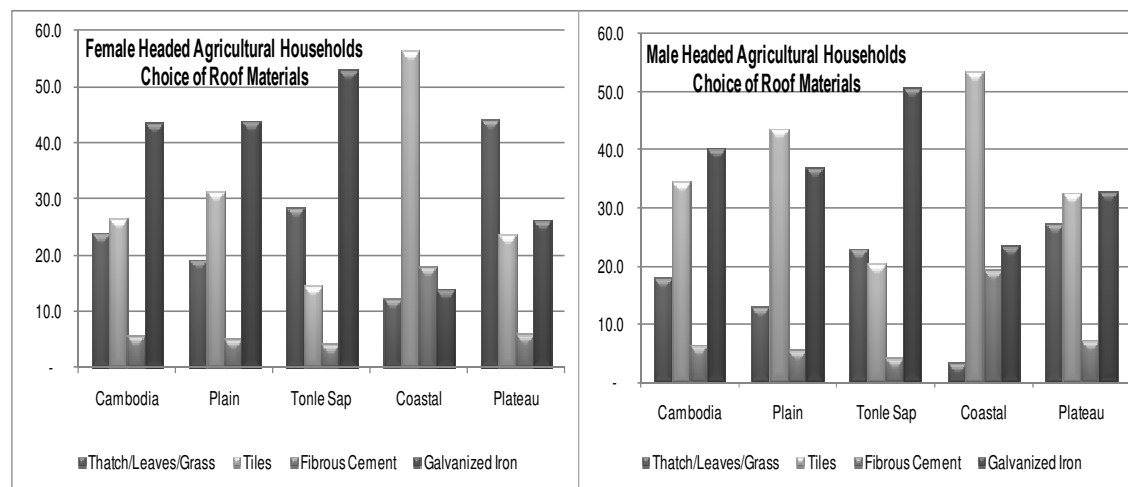
Roof Materials

At the national level, there are four preferred types of construction materials for the roof of the dwelling units as indicated by higher proportion of female and male headed agricultural households. These materials are galvanized iron or aluminum (between 40 to 44 percent), tiles (between 27 to 25 percent), thatch/leaves/grass (between 18 to 24 percent) and fibrous cement (6 percent).

The order of preferences of these four roof materials at the national level in the female headed agricultural households is the same as in the Plain Zone. Majority of the female headed agricultural households in the other three zones have different roofing materials: galvanized iron for Tonle Sap, tiles for Coastal and thatch/leaves/grass for Plateau/Mountain.

The ranking of roofing materials at the national level (based on the proportion of male headed agricultural households) is similar in the Plateau/Mountain Zone. Among the other three zones, the households living in the Plain and Coastal Zones have chosen tiles for their dwelling roof while more than half of those in Tonle Sap use galvanized iron or aluminum.

Chart 5.01 Percentage of Female and Male Headed Agricultural Households in Choosing Roof Materials, by Zone: 2008



Source: NIS, 2008 CSES

5.2 Access to Safe Drinking Water

The 2008 CSES included two questions on the main source of drinking water; one for the wet season and another for the dry season. During the wet season, 36 percent of the female

headed agricultural households depend on rainwater and another one-third on tubed/piped well or borehole as their main sources of drinking water. Likewise, almost same percentages of the male headed agricultural households drink rainwater and/or water through tubed/piped well or borehole. The latter is part of the four improved water sources in the country. The other three sources are piped, public tap and protected dug well. Hence, the rainwater is unsafe to drink and risky for the members of the female and male headed agricultural households.

Rainwater is reported to be the main source of drinking water of notable number/proportion of both types of agricultural households in the Coastal (between 60 to 70 percent) and Plateau/Mountain Zones (between 35-39 percent) during the wet season. For the other zones, as the water through the tubed/piped well or borehole is being drank by half of the female headed households and one third of the male headed households in the Plain Zone, their counterparts in Tonle Sap get their drinking water from the tanker truck/vendor or otherwise bought.

Table 5.02 : Percentage of Female and Male Headed Agricultural Households Reporting Main Source of Drinking Water in Wet and Dry Season, by Zone: 2008

Zone/Main Source of Drinking Water	Female Headed Agricultural Households		Male Headed Agricultural Households	
	Wet Season	Dry Season	Wet Season	Dry Season
Cambodia				
Total	100.0	100.0	100.0	100.0
Piped in dwelling or on premises	1.6	2.0	3.9	4.1
Public tap	0.3		0.1	0.1
Tubed/piped well or borehole	33.4	39.3	23.2	29.0
Protected dug well	11.7	17.9	15.2	19.6
Unprotected dug well	5.1	8.4	4.7	6.7
Pond, river or stream	10.1	23.6	15.9	29.5
Rainwater	35.6	2.6	33.2	2.2
Tanker truck, vendor or otherwise bought, home	2.1	5.0	3.5	7.8
Tanker truck, vendor or otherwise bought, Any	0.2	1.2	0.1	0.7
Other			0.1	0.4

Source: NIS, 2008 CSES

In the dry season, higher proportion of female headed agricultural households than their male headed ones derives their drinking water through tubed/piped well or borehole. However, about one-fourth of the households headed by females use the pond, river or stream to draw water for drinking. This is another unsafe drinking source that is also availed of by the male headed agricultural households. Higher percentage of both types of households that sources out the pond, river or lake for their drinking water is residing in Tonle Sap, Coastal and Plateau/Mountain Zones.

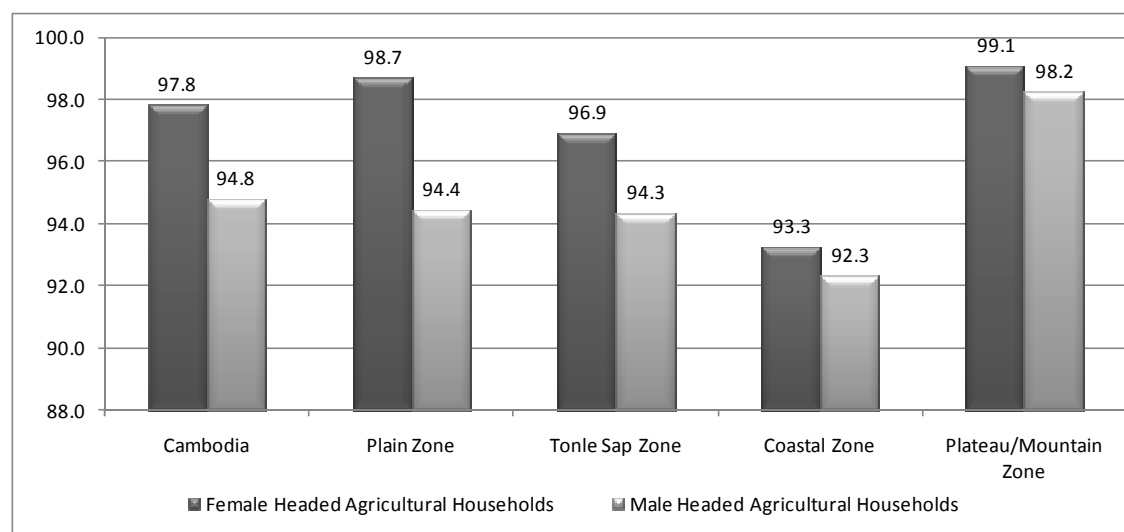
5.3 Sources of Energy

Used for Cooking

One of the Millennium Development Goals (MDG) adopted by the Royal Government of Cambodia is to integrate the principles of sustainable development into the country policies and programs and reverse the loss of environmental resources. One of its sub-targets concerns the energy used for cooking.

Almost all female headed agricultural households utilize firewood for cooking food while only few use charcoal and liquefied petroleum gas. Similarly in their male counterparts, about 95 percent have reported the use of firewood in cooking. However, very nil percentage of these households is using publicly-provided electricity/city power. The use of firewood has also been reported by approximately more than 90 percent of the agricultural households (whether female or male headed) in all zones.

Chart 5.02 Percentage of Female and Male Headed Agricultural Households Using Firewood, by Zone: 2008



Source: NIS, 2008 CSES

Used for Lighting

One in every ten agricultural households in Cambodia uses publicly-provided electricity/city power. More male headed households are using this compared to their female counterparts, recording a difference of 5 percentage points.

Of the available energy sources for the illumination of the dwelling units in the country, 53 percent of the female headed agricultural households use kerosene lamp to light up their houses. Another 40 percent of these households access lights through the use of battery. In the case of the male headed agricultural households, half of them prefer to use battery for

lights while around 37 percent depend on kerosene lamp.

Across Zones, more female headed households are kerosene lamp users while more male headed ones are battery users.

Table 5.03: Number and Percentage of Female and Male Headed Agricultural Households Reporting Energy Source for Lighting, by Zone: 2008

Zone/Main Source of lighting	Female Headed		Male Headed	
	Number	Percent	Number	Percent
Cambodia				
Publicly-provided electricity/City power	23,671	5.7	175,125	10.8
Generator	4,921	1.2	10,498	0.6
Battery	162,586	39.4	805,912	49.8
Kerosene lamp	220,313	53.4	593,001	36.6
Plain Zone				
Publicly-provided electricity/City power	14,153	6.5	72,687	10.3
Generator	-	0.0	3,900	0.6
Battery	108,137	49.7	451,385	63.7
Kerosene lamp	95,282	43.8	173,675	24.5
Tonle Sap Zone				
Publicly-provided electricity/City power	5,430	4.0	69,008	12.5
Generator	4,921	3.6	5,398	1.0
Battery	32,764	24.1	202,362	36.6
Kerosene lamp	92,004	67.6	263,293	47.7
Coastal Zone				
Publicly-provided electricity/City power	1,742	7.2	14,240	12.1
Generator			45	0.0
Battery	11,967	49.4	65,737	55.9
Kerosene lamp	10,515	43.4	35,831	30.5
Plateau/Mountain Zone				
Publicly-provided electricity/City power	2,346	6.8	19,190	8.0
Generator			1,155	0.5
Battery	9,718	28.1	86,428	36.0
Kerosene lamp	22,512	65.1	120,202	50.1

Source: NIS, CSES, 2008

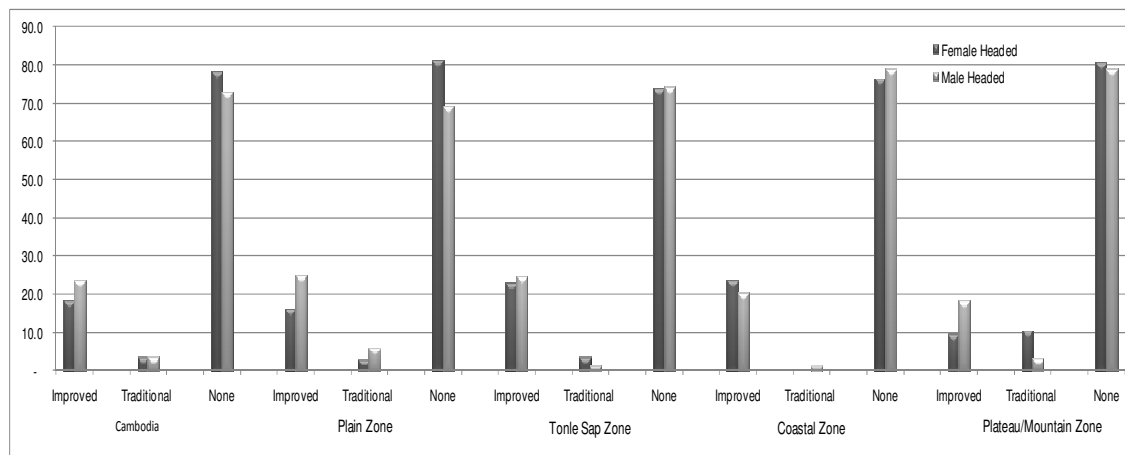
5.4 Sanitation

The type of toilet facilities used is a measure of the sanitary condition of the agricultural households. “Improved sanitation facility” includes three types of toilets: “pour flush/flush toilet connected to sewerage”, “pour flush/flush toilet connected to septic tank”, and “pit latrine with slab”.

About 26 percent of the agricultural households in Cambodia have access to toilet facilities; however, 22 percent use improved ones and about 4 percent are still using the traditional type of toilets. The percentage of the female headed agricultural households with improved sanitation is lower by 6 percentage points from the male headed agricultural households. Of the types of improved toilets, the most commonly owned and used by both households is pour flush (or flush) to septic tank or pit.

However, a very high proportion of these agricultural households have no toilet facility in their dwelling units. Most of these households use the open lands. This may be due to lack of public toilets available in all zones. Higher proportion of households headed by women is open to such situation. Some female headed agricultural households have better situation than the male headed ones in the Coastal Zone in terms of access to clean toilets while their female counterparts in the Plateau/Mountain Zone is vulnerable to some kind of diseases due to lack of toilet facility.

Chart 5.03 Percentage of Female and Male Headed Agricultural Households Re-Sanitation, by Zone: 2008



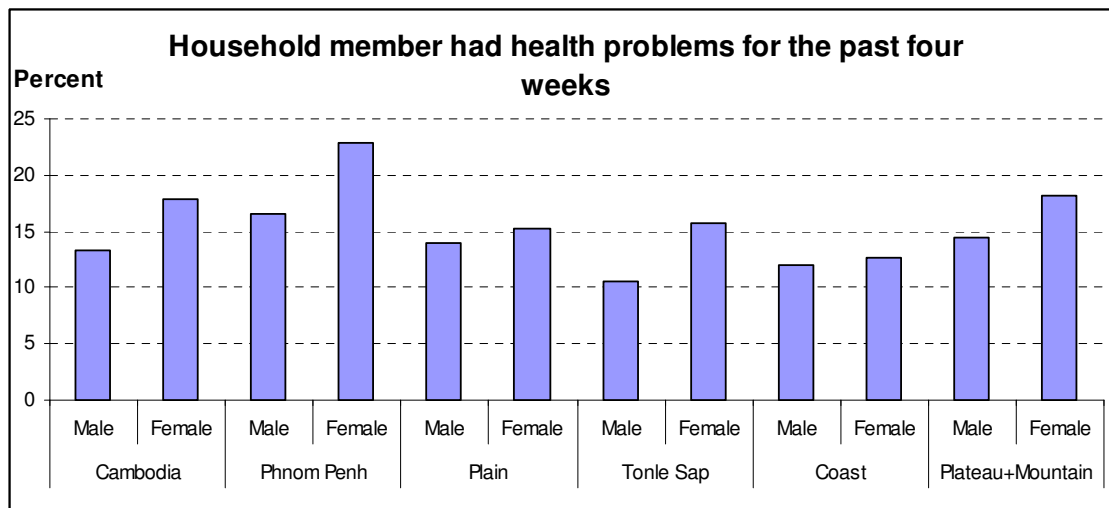
Source: NIS, 2008 CSES

5.5. Utilization of health care facilities

If any household member had health problems, questions on whether the ill or injured household members sought care, where they sought care and how much they spent on treatment was asked.

Four out of five persons with reported health problems had sought health care, where the shares for women and men are about the same. The share that sought some kind of health care was higher in Phnom Penh and other urban areas compared to other rural areas. The shares of women and men with reported health problems who sought health care are presented in Figure 5.05

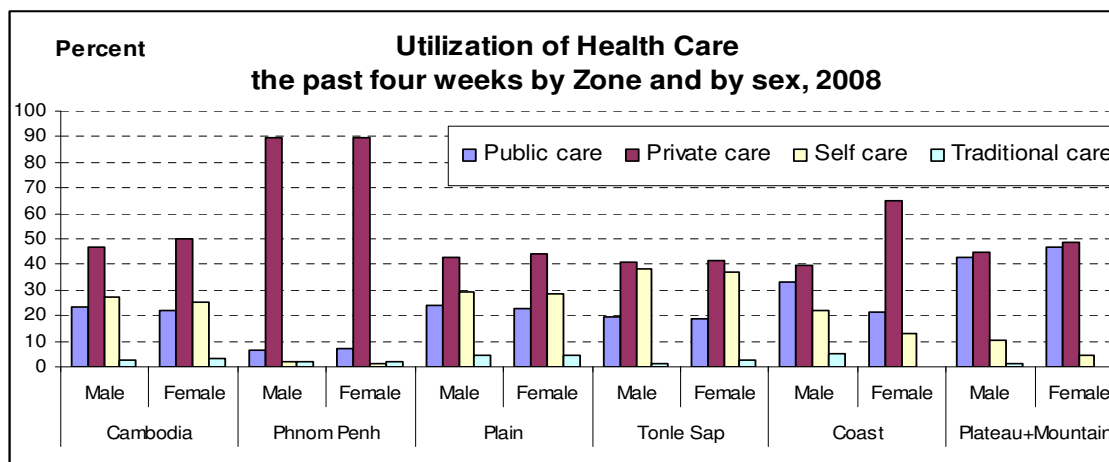
Figure 5.04: Had sought health care of persons with health problems, by geographical zone and sex, 2008.



Source: NIS, 2008 CSES

Figure 5.05 shows the number of women and men who sought care for health problems and the shares of what kind of health care those who sought care utilized. The share of persons who sought private medical care was highest in Phnom Penh. Persons with health problems in other urban and other rural areas had a higher share seeking traditional care.

Figure 5.05: Type of care of those who sought care. 2



Source: NIS, 2008 CSES

² Public care includes health Center, referral hospital, provincial hospital and national hospital. Private care includes private hospital, private clinic, doctor's or nurse's home. Self care includes dedicated drug store, other shop selling drugs, patients home. Traditional care includes healer/herbalist, traditional midwife, monk and other.

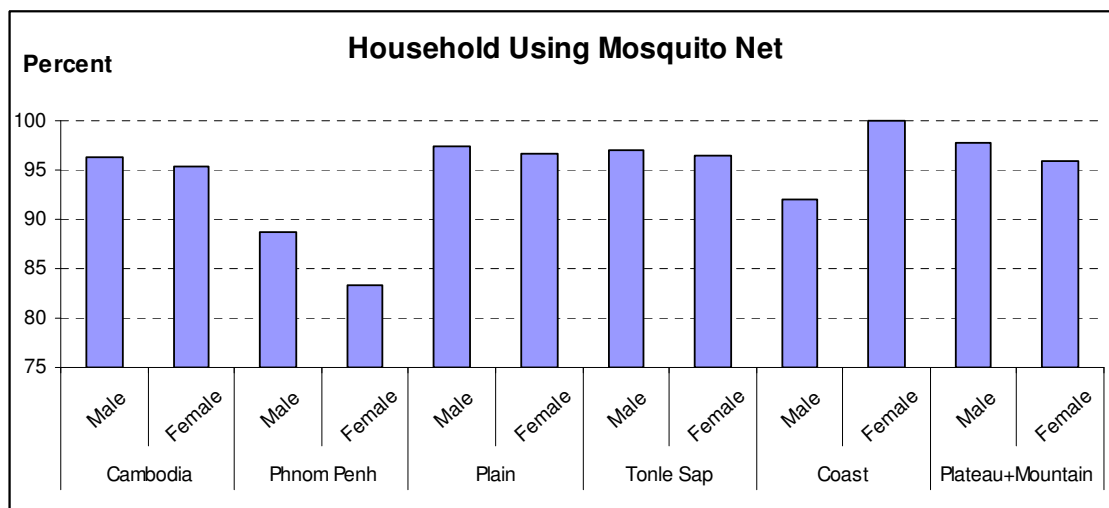
The proportion of private medical care was highest in other urban areas. The ill in rural areas had highest proportions in public care and in traditional care.

Men and women are using health care in almost equal amount. Private health care is more popular (or more available) than public care in all three strata.

5.6. Using mosquito nets

Almost all persons in Cambodia, about 96 percent of the population, are using mosquito nets for malaria protection, see Table 19..

Figure 5.06: Household had using Mosquito net

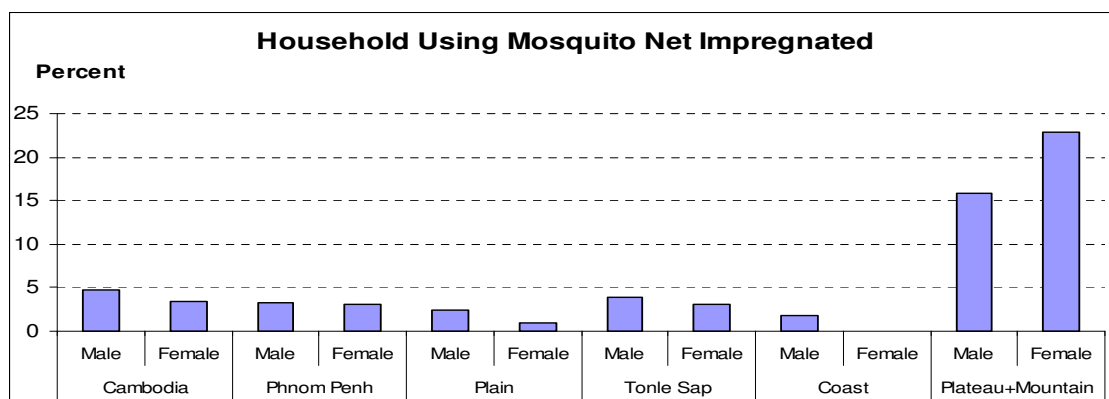


Source: NIS, 2008 CSES

Using mosquito nets Impregnated

For nationally were only about 4 percent of them are impregnated, but people were using high about 20 percent located in plateau/mountain zone i.e. treated with insecticide

Figure 5.07: Household had using Mosquito net Impregnated



Source: NIS, 2008 CSES

VI Conclusions

The research project tries to determine which of The Agricultural Households Livelihood Activities presented a range of data and results point out that Sex of Household's headed, Education of Household's headed, Agricultural Land, Land tenure, Credit, Income Sources, Housing Conditions, Access to Safe Drinking Water, Sources of Energy, Sanitation, Health care; have substantial effect in the Agricultural Households Livelihood.

- Differences between male and female headed households in all zones but female headed are widowed.

- Inequalities in land ownership, land size, and cultivated land (1.5 ha for male headed and 1.1 ha for female headed).

- Agricultural Land do not planting in dry season or not irrigated as about 91 percent

- For rice cultivation, the area cultivated by female headed households is almost five times smaller compared to male headed households during the wet season and becomes even smaller during dry season (8 times).

- For sanitation more than 80 percent were not have toilet facilities

- For health provider just only 23 percent for male or 22 percent for female were used public care.

- For malaria protection for Plateau/Mountain area just only 16 percent of male household headed and 23 percent for female household headed were using mosquito net impregnated.

VII Recommendations

- The perceived quality of the education system affects the willingness of families to keep their children in school.
- Provide technical and management training to agricultural households like, service providers in agricultural extension workers, skills trainers, land registration agents, tax agents, etc.
- Increase and improve the irrigation system access to irrigation in both dry and wet seasons.
- Provide credit services to farmers with low interest rate.
- Expand health education efforts related to good hygiene and sanitation practices.
- Increase access to improved water sources and sanitation facilities, particularly for the poor households.
- Conduct Census of Agriculture to ensure that about Land Tenure, land Used for agriculture and none agriculture.