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Research Article**ASSESSMENT OF GENDER INVOLVEMENT AND DECISIONS IN AGRICULTURE ACTIVITIES OF RURAL NEPAL****D. Devkota*¹, I. P. Kadariya¹, A. Khatri-Chhetri², and N. R. Devkota¹**¹Agriculture and Forestry University, Rampur, Chitwan, Nepal²Borlaug Institute for South Asia, CIMMYT**ABSTRACT**

Agriculture, in the typical Nepalese rural household- is the major pillar for livelihood whereas strong relationship exists between gender and agricultural activities as in the case of most of the other developing countries. Under this context, a study was done to understand about gender role scenario in relation to the involvement and decisions, especially to agricultural practices in the rural agrarian system of Nepal. Accordingly a total of 500 households were used to collect household related information. All the 500 respondents household were randomly selected across the five districts of Nepal, namely, 105 from Chitwan, 103 from Kaski, 105 from Kathmandu, 87 from Morang, and 100 from Rupendehi. Findings showed that agricultural activities have been changing as revealed by empirical evidences gathered in this study. It was clearly revealed about joint involvement of male and female in most of the agricultural activities, indicating a clear shift of gender paradigm from either male or female alone dominating to the joint involvement. Changed scenario in involvement thus suggest a need to consider this situation if agriculture productivity has to be linked with its allied aspects, such as input management; labour, cultivation practices as well as extension services. On the other hand, it was also equally learnt that gendered decisions in most of the activities on crops and livestock have been changing from single domination of either male or female towards joint participation of both. This firmly indicated the need to view gender roles as of changing process in order to adjust with appropriate planning and execution of the related development activities so that gender related issues would be rightly considered in the development endeavor.

Key words: Agriculture, gender, decisions, roles, rural household**INTRODUCTION**

In the typical Nepalese rural household, agriculture is the major pillar for livelihood. More than 60% of the population depends on agriculture (MoAD, 2013) contributing 37% of the nation's economic production (Pradhanang et al., 2015). The concept of gender role refers to how men and women should act, think, and feel according to norms and traditions in a society (Groverman and Gurung, 2001). Roles are reflected in the tasks and responsibilities expected of men and women and identities associated with being male or female in a certain society. There is a strong relationship between gender and agricultural activities in the Nepalese rural households as like in most of the other developing countries (Bajracharya, 1994; Devkota and Pyakuryal, 2006). Gender roles and relations are not fixed. They are dynamic and changing as per the societal change (Devkota, 2010). This paper attempts to examine gender involvement in agriculture at the Nepalese rural household. This study employed both qualitative and quantitative approaches to data collection in the five districts of Nepal namely Chitwan, Kaski, Kathmandu, Morang and Rupendehi using household survey, focus group discussion and observation.

METHODOLOGY

This project was executed in collaboration with Agriculture and Forestry University (AFU), Chitwan, Nepal. AFU provided technical support to collect required data, analysis and development of climate smart intervention program/scheme focusing youth and women. Information was largely collected as primary source of data by using common tools such as Focus Group Discussion and Key Informant's Interview whereas face to face household survey was done with household head. A total of 500 households were used to collect household related information that focus was given to meet the objectives of the research. 500 respondents were randomly selected across the five districts of Nepal namely, 105 from Chitwan, 103 from Kaski, 105 from Kathmandu, 87 from Morang and 100 from Rupendehi. This paper has specifically covered information related to gender dimension in relation to agricultural activities. Available data were statistically analyzed using SPSS software and findings presented by using simple descriptive statistical tools.

* Corresponding author: ddevkota@afu.edu.np

RESULTS

Basic information

Findings revealed that majority of the respondents were male whereas only about one-fifth of the respondents were female. This truly reflects the scenario that responding any queries at the household level is heavily dominated by the male member (80%) across the study districts. It was also learned that average age of the respondent was 51.39 ± 14.494 with the range of 15-97 years.

Ethnic composition

Table (1) presents the status of caste/ethnicity of the respondents. Accordingly, nearly three- fourth of the respondents were found as Brahmin/Chhetri that was followed by Janajati (one-fifth) whereas presence of Dalit respondents was the least during the survey (Table 1).

Table 1. Caste/ethnicity of the respondent across the study districts

Ethnicity	Frequency (%)
Brahmin/Chhetri	356 (71.2)
Janajati	100 (20)
Dalit	44 (8.8)
Total	500 (100)

Source: Field Survey, 2017

Family size

Status of mean family size of the respondents has been recorded. Accordingly, the mean total family size was 5.43 ± 1.85 where as the mean number of male and female member per household was almost similar (Table 2). The range of family size was 1 to 15 members.

Table 2. Family size and sex wise members per household across the study districts

Family size and numbers	N	Ranges	Mean	Std. Deviation
Total family size per household	500	1-15	5.43	1.859
Number of male per household	497	1-8	2.85	1.177
Number of female per household	496	1-10	2.62	1.228

Source: Field Survey, 2017

Education

Educational status of the respondents has been presented in the Table (3). About one-third of the respondents had up to secondary level of education whereas about one-fifth of them had attained only up to primary level education. Less than five percent respondents had earned graduate and post graduate degree, but about one-sixth of the respondents were illiterate across the surveyed household (Table 3).

Table 3. Educational status of the respondents' across the study districts

Level of education	Frequency (%)
Illiterate (no education)	64 (12.8)
No formal education, but semi-literate	91 (18.2)
Primary (grade 1-5)	68 (13.6)
Middle (grade 6-7)	29 (5.8)
Secondary (8-10)	158 (31.6)
Higher secondary (Grade 11-12)	53 (10.6)
Graduate	26 (5.2)
Postgraduate	7 (1.4)
Vocational education	1 (0.2)
Does not go to school (children up to 15 years)	3 (0.6)
Total	500 (100)

Source: Field Survey, 2017

Occupation

Table (4) showed occupational status of the respondents which was heavily dominated by agriculture followed by the government job, but that accounted for less than five percent of the respondents only. A very few respondents also had off-farm and remittance as their primary occupation. Nevertheless the mean landholding size of the respondents was 17.36 ± 18.403 ropani with the range of 1-150 ropani per household. Likewise it was also revealed that majority of the respondents (85.6%) have their own land.

Table 4. Occupational status of respondents across the study districts

Occupation	Frequency (%)
Agriculture	340 (88.3)
Government job	20 (5.2)
Off-farm	15 (3.9)
Remittance	10 (2.6)
Total	385 (100)

Source: Field Survey, 2017

Farming experience

More than one-third of the respondents were having farming experience of 11-15 years followed by 16-20 years of farming experience as response of nearly one-fifth of the respondents. About Nearly one-fourth of the respondents are quite aged people who had more than 25 years of farming experience (Table 5).

Table 5. Respondents' years of farming experiences across the study districts

Farming experiences (years)	Frequency (%)
<10	18 (3.6)
11-15	202 (40.4)
16-20	104 (20.8)
21-25	59 (11.8)
26-30	46 (9.2)
31-35	17 (3.4)
36-40	27 (5.4)
41-45	8 (1.6)
46-50	13 (2.6)
> 50	6 (1.2)
Total	500 (100)

Source: Field Survey, 2017

Note: Figures in parentheses indicate percentage respondents' responses

Status of living

The information about status of household members living together at the household along with the families has shown the presence of members throughout the year. Accordingly, it was clearly revealed that more number of respondents' households was found staying at the household for the last 12 months as response from more than 97% of the respondents. This indicates the scenario of non-migrant members thus possibility of living together with the family members. It was further learnt that majority of the respondents (93%) have meaningful contribution in the farming activities as mentioned by the respondent farmers across the study districts.

Gender involvement in crop production

Status of gender involvement in crop production related activities in the study area has been presented in Table (6). In crop production related activities, majority of the respondents reported the joint involvement of both male and female members rather than single involvement of either male alone or female alone.

Table 6. Gender involvement in crop production-related activities across the study districts

Activities	Gender Involvement		
	Male	Female	Both
Buying of seeds	114 (27.9)	70 (17.2)	224 (54.9)
Land preparation	117 (26.4)	64 (14.4)	263 (59.2)
Planting	97 (22.3)	86 (19.7)	253 (58)
Sowing	86 (19.7)	82 (18.8)	269 (61.5)
Tilling	116 (27.2)	64 (15)	247 (57.8)
Weeding	94 (21.8)	117 (27)	221 (51.2)
Harvesting	60 (14.1)	104 (24.4)	263 (61.5)
Post harvesting	69 (17)	55 (13.6)	281 (69.4)
Selling of produce	97 (23.3)	50 (12)	269 (64.7)
Selling of land	127 (30.8)	38 (9.2)	248 (60)
Adoption of technology	128 (31.4)	43 (10.6)	236 (58)
Leasing/ leasing out of land	131 (34.7)	42 (11.1)	205 (54.2)

Source: Field Survey, 2017

Note: Range of response frequency for survey activities- 378-444 respondents; Figures in parentheses indicate percentage respondents' responses

Accordingly, about three-fifth of the respondents responded that most of the activities were carried out jointly by both male and female members of the household including planting, sowing, selling the products, selling land, tilling, land preparation and so on. On the other hand about one-fourth of the respondents reported that harvesting of the crops would be largely done by female alone whereas similar proportion of respondents also responded that buying of seeds and land preparation would largely done by male alone Table (6).

Gendered decisions on agriculture Crop production

The scenario of gendered decisions in crop production-related activities has been shown in Table (7). Here again more than half of the respondents reported that most of the crop production related decisions would be done by both male and female members of the household. Those decisions included land preparation, planting, sowing, weeding and harvesting. Likewise about three-fourth of the respondents further reported that decisions on post harvest activities of crop would be largely done by both male and female members Table (7). On the other hand about one-third of the respondents reported that weeding related decisions would be done by female alone whereas one-third of the respondents also reported that land preparation and decisions on buying of seeds would be done by male member alone Table (7).

Table 7. Gendered decisions on crop production-related activities across the study districts

Activities	Gender Involvement		
	Male	Female	Both
Buying of seeds	151 (34.3)	72 (16.4)	217 (49.3)
Land preparation	135 (30.8)	74 (16.9)	230 (52.3)
Planting	56 (12.8)	127 (28.9)	256 (58.3)
Sowing	64 (14.6)	137 (31.4)	236 (54)
Tilling	150 (34.7)	77 (17.8)	205 (47.5)
Weeding	36 (8.4)	167 (38.7)	228 (52.9)
Harvesting	50 (11.7)	114 (26.6)	264 (61.7)
Post harvesting	41 (9.7)	83 (19.5)	300 (70.8)
Selling of produce	108 (25.8)	80 (19.2)	230 (55)
Selling of land	152 (36.6)	46 (11.1)	217 (52.3)
Adoption of technology	148 (36)	51 (12.4)	212 (51.6)
Leasing/ leasing out of land	114 (31.2)	42 (11.5)	209 (57.3)

Source: Field Survey, 2017

Note: Range of response frequency for survey activities- 365-444 respondents; Figures in parentheses indicate percentage respondents' responses

Livestock husbandry

The status of gendered decisions on livestock husbandry has been presented in Table (8).

Table 8. Gendered decisions on livestock production and management across the study districts

Activities	Gendered decisions		
	Male	Female	Both
Feed preparation to the animals	22 (11.4)	28 (14.5)	143 (74.1)
Fodder collection	102 (23.3)	230 (52.7)	105 (24)
Watering to the animals	108 (23.5)	214 (46.5)	138 (30)
Overall care and management of livestock	91 (21)	236 (54.4)	107 (24.6)
Milking animals	111 (23.9)	199 (42.9)	154 (33.2)
Grazing animals	75 (26.4)	160 (56.3)	49 (17.3)
Decision to sell animals	43 (16.9)	44 (17.2)	168 (65.9)
Decisions for determining amount of money to sell animals	62 (13.7)	193 (42.6)	198 (43.7)

Source: Field Survey, 2017

Note: Range of response frequency for survey activities- 143-464 respondents; Figures in parentheses indicate percentage respondents' responses

Accordingly, it was well revealed that livestock related decisions to be done by male alone members of the household were comparatively few and weak than those of female alone taking decisions Table (8). About one-fifth of the respondents reported that male alone would decide on the activities such as fodder collection, grazing and watering to the livestock whereas all these activities were heavily decided by female alone members as reported by about half of the respondents. In deed most of the livestock rearing related decisions were found to be decided by either female alone or in some cases by the joint decisions of both male and female members Table (8). For example, about three-fourth of the respondents reported that feed preparation related decision would be done jointly. Likewise, about three fifth of the respondents also reported that decision on selling animal would be also done jointly by male and female members Table (8).

Gender decision on household activities

Table (9) presents the scenario of gendered decisions at the household level for major task/activities to be performed. Accordingly, it was well reflected that majority of the activities at the household were found to be jointly decided. For example, nearly three-fourth of the respondents reported that activity such as personal articles purchase, communication related facilities purchase, managing household durables, education-related actions and health care related activities were found to be jointly decided by both male and female members of the household Table (9).

Table 9. Gendered decisions on household activities across the study districts

Decisions on:	Male	Female	Both
Food items	44 (11.2)	173 (44.4)	173 (44.4)
Fuel and lighting	77 (15.8)	182 (37.4)	228 (46.8)
Purchasing household items	66 (13.8)	189 (39.5)	224 (46.7)
House rent related activities	78 (27.1)	50 (17.4)	60 (55.5)
New home construction/ repairs and maintenance	119 (32.1)	59 (15.9)	193 (52.0)
Transport management for household members	104 (25.3)	50 (12.2)	257 (62.5)
Telephone/ mobile purchase and use	87 (19.1)	55 (12.1)	313 (68.8)
Personal articles purchase	38 (9.0)	86 (20.5)	296 (70.5)
Management of household durables	39 (9.9)	74 (18.8)	280 (71.2)
Education related actions to the household members	59 (14.4)	58 (14.1)	293 (71.5)
Health care related actions to the household members	41 (9.9)	49 (11.8)	326 (78.3)
Agriculture related decisions	103 (24.0)	58 (13.6)	267 (62.4)
Major social events	50 (12.2)	51 (12.4)	309 (75.4)

Source: Field Survey, 2017

Note: Range of response frequency for survey activities- 288-487 respondents; Figures in parentheses indicate percentage respondents' responses

On the other hand, very few specific activities were found to be either male alone or female alone decided. About one-third of the respondents reported that new home construction/repair related decisions were dominated by male compared to food items, fuel and purchase of other household items that were dominated by female alone in taking decisions as reported about one-third of the respondents (Table 9).

Gender awareness on climate change

Table (10) shows the status of sources of information about climate change as perceived by the respondents. It was clearly revealed that majority of the respondents in the study area learned about climate change either through radio, and, or television as reported by about one-third of the respondents whereas about two-fifth of the respondents also reported that they had learned climate-related information through a combine sources of radio, television, newspaper and also through neighbors in the community (Table 10). It was also revealed that very few of them have access to information from weather forecasting department to learn about climate change as a source of information.

Table 10. Sources of information about climate change used by the farmers of study districts

Sources of information	Frequency (n=400)
Radio and television	123 (30.8)
Radio, television, newspaper and learn from other community members	168 (42)
Television, community members, local institution and NGOs	31 (7.8)
Learn from other community members, local institution and NGOs	48 (12)
Weather forecasting department	4 (1)
All of the above sources	26 (4.5)

Source: Field Survey, 2017

Note: Figures in parentheses indicate percentage respondents' responses

DISCUSSION

Gender roles for crop production in the past were distinct to either male or female or joint involvement, whereas it was in most cases reported as labour intensive works thus the role of women was comparatively highlighted for such activities (Devkota, 2010). The present study provided evidence towards joint involvement of male and female for most of those activities defined with some exception, such as weeding and harvesting of the crops that would be largely done by female alone whereas buying of seeds, leasing out land, selling of the farm produce, and adoption of the new technology would largely done by male alone. These findings supported the visible change in gender roles at the present context that are more specific in nature and are associated with the livelihood support system of the people (Devkota and Pyakuryal, 2009; Devkota, 2010; Devkota and Pyakuryal, 2017). Shifting gender role from either male or female dominating to joint involvement indicates that a kind of change in gender situation is prevailing in the rural agricultural practices. There could be several driving forces behind such changes which could have negative as well as positive consequences that need further study to pinpoint the fact (Devkota, 2010) which is beyond the scope of this study.

Decision-making is not a matter of debate at the rural households of Nepal (Devkota et al., 2015). Generally, decisions are made on the basis of consensus between husband and wife in the family. In spite of the overwhelmingly joint decisions of male and female household members in all aspects of agricultural activities as reflected in this study, there is distinct variation in the level of gender participation in some crop production decisions such as buying of seeds, selling land and produce, and adoption of new technology that are usually controlled by male members. On the other hand activities such as planting, sowing, and weeding, harvesting and post harvest-related decisions are under the domination of female alone (Table 7). Similar situation was also observed in livestock rearing decisions, for example, fodder collection, watering to the animals, milking, grazing decisions along with determining amount of money to sell animal were done by female with the little support of male counterpart (Table 8). It was learnt that most of the livestock decisions were carried out by women whereas men were actively involved in crop production-related decisions. A similar finding was drawn from the study of Devkota (2010) in her dissertation work related to changing gender roles in Nepalese rural agriculture. The author reported that gender role has been changing in relation to the involvement and

decisions, especially to the household related activities as well as agricultural practices in the rural agrarian system of Nepal; from either male or female alone dominating in the past towards overwhelmingly jointly done work at the present context (Devkota, 2010).

One of the major driving forces of change in gender roles in the present context of rural agrarian society is youth migration (Bhadra, 2007). At the present day, regardless of caste/ethnicity, gender, social, and economic status; youths are leaving farming and moving towards off-farm opportunities either within the country or fleeing overseas even as unskilled labor (Devkota, 2010). The level of youth's interest in education rather to engage in working subsistence agriculture continues to drive high rates of youth migration. Moreover, social pressure and political instability are also the driving force of youth migration as skilled or unskilled labor to the international market (Personal Communication with Manju Chapagain, Khairahani, Chitwan, 2017). Indeed, youth and women constitute two key demographic domains of unemployment, poverty and food insecurity in Nepal. Young people (aged 16-40) make up about 40 percent of the population, half of them being young women and girls (CBS, 2014). In the last few years, this population has been rapidly out-migrating from Nepal to the international labor (Devkota, 2010). Official data shows that in the last 6 years about 3 lakh youth per year were out-migrated for employment (Ministry of Labor and Employment, 2014). Temporary and/or permanent out-migration of young technical professionals to the developed countries is also creating a huge chaos in economic growth and development of Nepal. In spite of those scenarios, there is also lack of local level employment opportunities that provide rapid returns to youth and the capacity to rapidly acquire modern consumer items and a way of life not dependent on high risk of low return from agriculture (Adhikari et al., 2011; Kollmair, 2011). Social change and social mobility are pressurizing youth migration (Adhikari et al., 2011). There are considerable changes in local power dynamics, and this continues to be a strong driver to continue migration amongst the youngsters regardless of caste/ethnicity and economic status. Social role theory moreover, treats gender roles as a dynamic aspect of culture that changes in response to alterations of the typical work and family roles of the sexes (Eagly, 1987). Gender roles are rooted in the division of labor and gender hierarchy implies that these roles should change if these features of social structure changes (Bhadra, 2007).

Socialization of the new generation has been also provoking a source of change for example, in gender roles. It is because for any society change is necessary and is inevitable to adjust in the given situation and that several roles could be well transferred to the new generation, with new dimension (Giddens, 1984). These arguments support the concept of flexibility in roles that any member of the family (male or female) performs would indeed remained change to adjust with the changing values, perception and societal modernity. Thus, as we found in this study, in most of the agricultural works gender role has changing from single domination of either male alone or female alone, but at the present context there is no fixed role of any gender thus involve to work as per the wish and time permits (Key Informant Interview, Ram Chaudhari, Majui, Chitwan, 2017). We feel that shift in gender roles over the time period in the agricultural activities as envisaged from the study of Devkota (Devkota, 2010) is a continued process waived into the social structure of possession and action. Such changes, as Giddens explained related to the social patterns of social relations that exist with changes over time (Giddens, 1984). Moreover, societal rules and resources could work as determinants of such changes depending on the nature of society as Giddens has postulated that action as social practices ordered across space and time (Giddens, 1984). Based on the findings of this study, it can be suggested that change in gender roles for agricultural activities are part and parcel of the continued action of the society to adjust with what is in general available in the society which is difficult to control by an individual, but could be adjusted to suit with the rules and practices that are structured in the society. Thus it is important to consider such changes in gender role and should take it accordingly while considering gender sensitive planning and development action in agricultural activities.

CONCLUSION

Gender role in relation to the involvement and decisions, especially to agricultural practices in the rural agrarian system of Nepal found changing as revealed by empirical evidences gathered in this study. The findings of this study clearly revealed joint involvement of male and female in most of the agricultural activities indicating a clear shift of gender paradigm from either male or female alone dominating to the joint involvement. Study findings also showed some of the activities with the domination of either male member such as buying of seeds, selling the produce and land, or female members such as weeding and harvesting of

crops. Nevertheless important aspects of agricultural activities have been found visible changes towards joint involvement. Changed scenario in involvement thus suggest a need to consider this situation if agriculture productivity has to be linked with its allied aspects, such as input management; labour, cultivation practices as well as extension services.

From the findings of this study we have learnt that gendered decisions in most of the activities on crops and livestock have been changing from single domination of either male or female towards joint participation of both. This firmly indicated that as in the case of other aspects, gender roles should also be viewed as of changing process necessitating to consider such changes to adjust with appropriate planning and execution of the related development activities so that gender related issues would be rightly addressed in terms of decisions, participation and implementation. Under this context strengths of joint decision has to be addressed by maintaining youth and women in agriculture, otherwise fate of agriculture would be questioned due to lack of critical mass of youngster in agriculture even when gender role has been changing towards jointly done for most of the agricultural activities.

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