ISSN: 2455-6939

Volume:02, Issue:04

# SOCIOECONOMIC CHARACTERISTICS AND STATUS OF CEREAL PRODUCER IN ARGHAKHACHI DISTRICT OF NEPAL

Mahesh Sapkota<sup>1\*</sup>, Jay Prakash Dutta<sup>1</sup>, Surya Mani Dhungana<sup>1</sup>, Mahima Bajracharya<sup>1</sup>

<sup>1</sup>Department of Agricultural Economics and Agribusiness Management, Agriculture and Forestry University, Rampur, Chitwan, Nepal

## ABSTRACT

This study investigated the socio-economic characteristics and status of cereal crop producer in two VDCs (Khanchikot and Thada) of Arghakhachi district in Nepal. A pre-tested semistructured questionnaires were used to collect the information from the 60 randomly selected respondent (30 from each VDC). Statistical Package for Social Science (SPSS) and Microsoft Excel were used for data processing. The study area was male dominated and agriculture was the major occupation. The ratio of dependent population was higher in Thada VDC, which was 0.51 in Khanchikot and 1.02 in Thada. The average area under rice (7.46 ropani) was more followed by wheat (4.58 ropani) and maize (4.35 ropani) in the study area. Amount of seed used was higher for wheat (10.73 kg) followed by rice (8.75 kg) and maize (6.5 kg). The productivity of major cereal crops per ropani was found to be 123.89 kg for rice, 90.58 kg for maize and 36.28 kg for wheat. The major problems in the study area were lack of technical assistance, lack of irrigation facilities and low quality seed. Provision of technical assistance, better irrigation facility, availability of quality seed, better plan and policies from government will lead towards increasing the yield and productivity of cereal crops.

Keywords: Cereal crops; productivity; male dominated

## INTRODUCTION

Nepal is an agrarian country where majority of the people are engaged in agriculture for their livelihood. About 66 % of total economically active populations is involved in agriculture (MoAD,2014). The share of agriculture to the national GDP is about 35 %. Majority of the

ISSN: 2455-6939

Volume:02, Issue:04

people are engaged in agriculture but the economy is still lagging behind. Therefore, commercialization in agriculture production is inevitable for economic development of nation. The major cereal crops of Nepal are Rice, Maize and Wheat. Rice (*Oryzasativa* L.) is one of the most important cereal crops for more than half of the world's population. Rice contributes to 20 % to AGDP and it contributes of about 58 % to the total cereal crop production in Nepal (Basnet, 2014).

According to ABPSD 2012/13, rice is one of the most important staple cereal crops which is extensively cultivated over 1,420,570 hectares of land with the production of 4,504,503 ton and the productivity of 3,171 Kg/ha in Nepal. According to statistical year book 2012/13, rice is cultivated over 8,672 hectares of land with the production of 25,437 ton and the productivity of 2,933 Kg/ha (, 2012/13) in Arghakhachi district. Similarly, maize (*Zea mays* L.) ranks at 2<sup>nd</sup> position in Nepal after rice and is cultivated over 849,635 hectares with the production of 1,999,010 ton and the productivity of 2,353 Kg/ha. In Arghakhachi district, it is cultivated over 16,914 hectares of land with the production of 49,441 ton and the productivity of 2,923 Kg/ha. Wheat (*Triticumaestivum* L.) ranks at 3<sup>rd</sup> position in Nepal and is cultivated over 754,243 hectares of land with the production of 1,727,346 ton and the productivity of 2,290 Kg/ha. In Arghakhachi, wheat is cultivated over 7,340 hectares of land with the production of 13,698 ton and the productivity of 1,866 Kg/ha. These crops also provides bi-products like straw for thatching and mat-making, fodder for livestock, bran for poultry and fish ponds and husk for fuel. Despite being major cereal crops, their productivity is still low in Nepal as compared to Asia and Worldwide.

Farmers have limited resources for production and farming is subsistence. Most of them have low economic status due to low level of production. Lack of national policy, low economic return, lack of organized market, shortage of input supply, lack of technical know-how, weak extension services are major causes for low production and productivity. Unavailability of quality seed and farmer's preferred varieties at affordable price are major constraint for increasing production. It is assumed that if women farmers are provided with more information, modern agricultural practices and technical know-how as a target group along with male farmers, agricultural production will increase (Shrestha, *et al*, 1984).This study may help the growers to increase their productivity, helps different donors, INGOs, NGOs and policy makers to invest and make different strategy to cope with the problems. Through the findings of this study, attempts could be made to rectify possible defects and strengthen the prospects in cereal crop production.

ISSN: 2455-6939

Volume:02, Issue:04

#### **OBJECTIVES**

The overall objective of this study is to assess the socio-economic characteristics and status of cereal crop producer in Arghakhachi district.

#### **Specific Objectives**

- ✤ To assess the socio-demographic components of cereal crop producers
- ✤ To assess the status of cereal crop production
- ✤ To identify the constraints and suggest remedial measures to increase productivity

#### METHODOLOGY

#### Study area

The study was conducted in two VDCs of the Arghakhachi district of western development region of Nepal. The two VDCs namely Khanchikot and Thada were selected purposively.

#### Sampling method and data collection procedure

The semi-structured questionnaire was prepared and it was pretested to 6 farmers of Sandhikharka VDC of Arghakhachi District. Primary data was collected through interview schedule. The information on existing production system and various problems related to production of cereal crop were collected. Information about socio-demographic status, cereal crop production, economic status were collected from the selected farmers. Focus Group Discussion and Key Informant Interview was carried out. In order to generate the appropriate decision making of any region, 60 sample size is considered as minimum requirement for larger population (Poate and Daplyn, 1993). So, total of 60 sample size was collected to represent the district. Thirty households from each VDC were selected by using simple random sampling in May, 2014. The collected data were entered in SPSS (Statistical Package of social science) software. In the statistical analysis, mean, frequency, percentage, etc. was studied using descriptive statistical tools including cross tab.

#### **Problem ranking**

The index was found mainly taking into account the qualitative data. On the basis of responded frequencies, index value were calculated for the analysis of farmer's perception on the extent of problems faced in cereal crop production. The index of problem was computed by using the formula:

ISSN: 2455-6939

Volume:02, Issue:04

$$I_{prob} = \sum \left( \frac{S_i f_i}{n} \right)$$

where,

$$\begin{split} I_{prob} &= \text{ index of problem} \\ \sum_{i} &= \text{summation} \\ S_{i} &= i^{th} \text{ scale value } (i = 1.75, 1.5, \dots, 0.25) \\ F_{i} &= \text{ frequency of } i^{th} \text{ importance of problem given by the respondents} \\ n &= \text{total number of respondents} \end{split}$$

#### **Dependency ratio (DR)**

DR= Number of dependent family member/ Number of economically active member

Where,

Dependent family member = Age group of 0-15 years + Age group of above and equal to 60 year

Economically active member = Age group of 15-59 years

#### **RESULTS AND DISCUSSIONS**

#### **Socio-economics Characteristics of Household**

The study area was found to be male dominated with 66.7 %. In both the VDCs there was male dominated (Khanchikot 63.3%, Thada 70%). The most commonly accepted categories in ethnicity was adopted. In the study area, there were 61.67% of Brahmin and Chhetri whereas remaining (38.33%) were Janajati and Dalit. About 51% of male and 49% of female population distribution was found in the study area. In the study area the overall dependency ratio was 0.78 which indicates that about 100 persons in the productive ages have to support 78 dependents in terms of the basic necessities of life. Majority of the HH member had attained primary level of education which comprises of about 23.34 %. In the study area the major occupation of the HH member was found to be Agriculture i.e. about 67.81 % followed by income from abroad (17.6%).In the study area, firewood (99.92%) was the major source of cooking fuel and the source of water supply was found to be water piped into house or into plot (56.67%).

ISSN: 2455-6939

Volume:02, Issue:04

The land holding size of Khanchikot was 15.82 ropani and that of Thada was 10.32 ropani per household. In total, the total land holding of the Household was 13.07 ropani in the study area. The total owned land was 12.53 ropani. Similarly the rented land of HH was 4.75 ropani and rented out land was about 3.67 ropani. In the study area, the majority of the land was rainfed land (44.6 %). In Khanchikot there was 61.57 % and in Thada 38.21 % of rainfed land. The irrigated land was much higher in Thada (61.79 %) and that of Khanchikot was 14.93 %. Thada VDC lies near to the Terai belt and the land structure is quite plain than that of Khanchikot.

#### Crop area and amount of seed sown

From the table it is revealed that the area under rice, maize and wheat (major cereal crops) were 7.46, 4.35 and 4.58 ropani respectively. There is very high land area under rice (9.58 ropani) in Thadathan Khanchikot (2.69) but the land area under maize is more in Khanchikot (4.6) than Thada (4.09). It could be observed that amount of seed requirement of wheat(12.33 kg) was more as compared to rice (7.63 kg) and maize (7.79 kg) in Khanchikot. But in Thada amount of seed requirement of rice (9.25 kg) was more as compared to maize (5.18 kg) and wheat (8.80 kg). In total we found that seed requirement of wheat (10.73 kg) was more followed by rice (8.75 kg) and maize (6.51 kg).

Crop		V	Total			
	Khanchikot			Thada	_	
	Area	Seed Amount	Area	Seed Amount	Area	Seed Amount
Rice	2.69	7.63	9.58	9.25	7.46	8.75
Maize	4.60	7.79	4.09	5.18	4.35	6.51
Wheat	4.71	12.33	4.43	8.80	4.58	10.73
Barley	1.33	2.50	0.00	0.00	1.33	2.50
Lentil	0.00	0.00	2.50	2.00	2.50	2.00
Tori	4.00	4.50	0.00	0.00	4.00	4.50

Table 1: Area and required seed under cereal crops in study area, 2014

Note: Area in ropani and seed amount in kg.

ISSN: 2455-6939

Volume:02, Issue:04

#### Production of cereal crop

Altogether the production of major cereal crops were 924.23, 393.04, 166.18 kg in rice, maize, wheat respectively of household. Rice and wheat production was more in Thada but maize production was more in Khanchikot. Production of other minor cereal crop production was barley (71.33 kg), lentil (185 kg) and tori (65 kg). This revealed that each household has not enough food to fulfill their basic need of food.

## Table 2: Total production of cereal crop in study area, 2014 (kg)

Crop	VDC	Total	
	Khanchikot	Thada	-
Rice	496.25	1114.44	924.23
Maize	424.83	362.14	394.04
Wheat	144.67	192.00	166.18
Barley	71.33	0	71.33
Lentil	0	185.00	185.00
Tori	65.00	0	65.00

#### **Problem ranking**

From the study it is observed that the major problem of the respondents in the production of cereal crops were lack of technical assistance followed by lack of irrigation facility, low quality seed, pesticide unavailability, low price of agricultural product and so on in both the VDCs. The similar type of findings were also obtained by Barakoti (2001) and Adhikari (2002).

#### ISSN: 2455-6939

Volume:02, Issue:04

Problems	VDC				Total	
	Khanchikot		Thada	Thada		
	Index	Ran	Index	Ran	Index	Ran
	value	k	value	k	value	k
Lack of technical assistance	0.109	Ι	0.121	Ι	0.115	Ι
Lack of irrigation facilities	0.102	II	0.109	III	0.105	II
Low quality seed	0.093	IV	0.109	III	0.101	III
Pesticide unavailability	0.081	VI	0.118	II	0.099	IV
Low price of agricultural	0.092	V	0.092	IV	0.092	V
product						
High cost of seed	0.095	III	0.082	V	0.088	VI
Lack of machinery	0.092	V	0.080	VI	0.086	VII
Unavailability of seed on time	0.080	VII	0.051	IX	0.066	VIII
Lack of storage	0.052	Х	0.073	VII	0.062	IX
Unavailability of market	0.068	VIII	0.033	XII	0.051	Х
Unavailability & cost of	0.047	XI	0.054	VIII	0.051	XI
fertilizer						
Lack of transportation	0.053	IX	0.044	Х	0.049	XII
Disease and pest	0.037	XII	0.035	XI	0.036	XIII

### Table 3: Perception of respondent regarding existing problems in cereal crop production

## Remedial measures suggested by farmer to cope with the problems

- **4** Efficient extension services
- **4** Subsidy on seed, fertilizers, irrigation equipment, vehicles
- **4** Timely provision of quality agricultural inputs from concerned authorities
- 4 Construction of rural road and improvements of existing
- ↓ Local seed processing and storage facility
- Co-operative production marketing
- **4** Government intervention to stabilize the market
- Plant clinics and IPM
- Water harvesting
- **4** Training on different technical aspects of crop production

**4** Easy access to loan and microcredit

#### CONCLUSION

The study area was found to be male dominated. The dependency ratio was higher in the study area. The level of education attained by majority of the HH member was primary level. Although the majority of the HH member had their agriculture as a major occupation but the production was low. The land holding size of the HH was found to be good (13.07 ropani) but not satisfactory use of land and low production in the study area. The major problem for the cultivation was irrigation. The area under major cereals were Rice- 7.46, Maize- 4.35 and Wheat- 4.58 ropani. Similarly the production was found to be Rice- 924.23.23 kg, Maize- 394.04 and Wheat- 166.18 kg per Household. The major problem found in cereal crop production was lack of technical assistance, lack of irrigation facilities, low quality seed and so on. The probable remedies as suggested by farmer to cope with the existing problems were efficient extension services, subsidy on seed, fertilizers, irrigation equipment, vehicles, and timely provision of quality inputs and so on.

#### ACKNOWLEDGEMENT

We are thankful to Institute of Agriculture and Animal Science (IAAS) for providing the favorable environment to conduct research. We are very much thankful to faculty members of Agriculture and Forestry University (AFU) for providing support to conduct the research. We would also like to express our gratitude to our colleagues for their direct and indirect help for the completion of research and heartwarming appreciation goes to respondents of the study site for their cooperation, time and valuable information.

#### REFERENCES

- ABPSD (2012/13). Statistical information on Nepalese agriculture 2012/13. Government of Nepal, Ministry of Agricultural development, Agri-Business Promotion and Statistical Division, Singh Durbar, Kathmandu.
- Adhikari, A. (2002). Analysis of vegetable marketing practices in palpa district. M. Sc. Ag. Thesis, IAAS, Rampur, Chitwan, Nepal.116 p.
- Barakoti, T. P. (2001). Factors affecting maize production technology adoption by the farmers of Eastern Nepal, Sustainable Maize production Systems for Nepal. In: Proceedings of a Maize Symposium. December 3-5, 2001, Kathmandu, Nepal. pp 272.

ISSN: 2455-6939

Volume:02, Issue:04

- Basnet, B.M.S. (2014). National rice day rice and food security. Gorkhapatra Daily, (*Retrieved* on August 3, 2014 and available at: grokhapatraonline.com)
- Poate, C. D. and Daplyn, P. F. (1993). Data for Agrarian Development. Cambridge University Press.
- Shrestha, P., L. Zivetz, B. Sharma and S. Anderson. (1984). Planning Extension for Farm Women. Integrated Cereals Project, Department of Agriculture, Kathmandu, Nepal.