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Research Article

Comparative Study of Income and Expenditure Behavior for Sustainability among Seed-producing and Non-Producing Farmers in Salyan, Nepal

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Abstract

A survey was conducted on comparative study between income and expenditure of seed producer of Dandagaun, Salyan of Nepal in 2014 A.D. The sampling frame consisted of seed producers and non-seed-producers of Dandagaun VDC. For the study, 120 households, out of which 52 producers of seeds and 68 non–seed-producers were selected by using simple random sampling technique. Higher number of male headed household depended on agriculture as major occupation compared to female headed households. The average total annual saving by gender was NPR 80872 for male headed households and NPR 85,710 for female headed households. Both male and female decisions were vital in all household decisions among seed producing male and female households. Area for seed production was higher among male headed households (5.2ropani) as compared to female headed households (4.6 ropani). Agro-vets were major source of input supply. In an average, the field was weeded 1.17 times for the production of seeds. Field inspection was mostly done by farmers themselves (61.5%). Roughing, grading, sun-drying, labelling and packing were done by seed producer themselves. Average amount of seed sold was 53.4 kg per seed-producer, which was small quantity as compared to production area. Lack of technical assistance was major problem to commercial seed production followed by lack of irrigation facilities. Timely availability of agricultural inputs can improve the seed production potential. Study found higher living standard and high consumption expenditure among seed producing farmers than non-seed producing farmers.

Keywords: Income; expenditure; seed producer; consumption; gender decision

Introduction

Nepal is an underdeveloped country with almost 66% of active population dependent on agriculture (MoAD, 2012). Share of commodities to agriculture GDP from cereal and other crops accounts for 49.41% and separately constituted from vegetables and nursery 9.71 %, fruits and spices 7.04 %, domestic animal and poultry 23.25%, other animal farming 2.43%; and forestry 8.07% (ABPSD, 2007). Agriculture received the top priority since third five year plan (1966-1970) with the objective of increasing food production by 15% and cash crops by 73% (NPC, 1966). Statistics of past year shows that, share of agriculture to GDP is in declining trend (CBS, 2011). There is need of increasing production and productivity of agriculture to food for growing population. It is possible by making access to input. Seed is one of the important and cheapest sources to increase production. The urgent need of increasing food demand can only be met through proper management and use of high quality seeds including other plant genetic resources (PGRs) required for the development of better-adapted and higher-yielding cultivars. Seed is the most important determinant of agricultural production potential, on which the efficacy of other agriculture inputs is dependent. Seeds of appropriate characters are required to meet the demand of diverse agro-climatic conditions and intensive cropping systems (MoAD, 2013).

Constant increase in agricultural production and productivity is largely dependent on the development of new and improved varieties of crops supported by an efficient system for timely supply of quality seeds to farmers (MoAD, 2013). In most developing countries the formal sector is in smaller scale than the informal seed sector (Monyo *et al.*, 2004). Among Nepalese farmers almost 90 % seed is supplied from traditional system of cultivation (CDD, 1998). According to Langyintuo (2005), all the farmers do not have access to the quality seed. Individual farmers' attempt to meet their seed needs by first selecting from the previous harvest.

To improve the livelihood of poor farmer who form the major part of the population, obviously underlines the utmost need for launching of an effective income generating activities through seed production. As seed is one of the most important input for increasing production and productivity, it should be encouraged to produce the good quality of seed by the farmer. There is no or haphazard documentation of income of farmers. Proper documentation and study of Income and Expenditure

behavior of seed producer can lead in the commercialization of the seed. Farmers' livelihood could be improved through seed commercialization in Nepal. Knowing their income and expenditure pattern, saving and mobilizing of the rural money can be done. Documenting of income and expenditure will help government to know the areas of interest of these people and can bring about different plans and policies in the Dandagaun, Salyan.

Good Seed production by farmers not only helps to increase the production and productivity but furthermore, it enables them extra income which helps to uplift their life style and helps in raising the living standard of the farmers. Along with dissemination of technological advancements will be effective when the farmers have access to good quality seed.

Methodology

The Dandagaun VDC, Salyan of Mid-Western Development Region was selected purposively. In total of 120 households were selected randomly and the survey was conducted (Fig. 1).

Semi structure questionnaires were used to collect the required information/data. The information on existing seed production system and various problems of seed production were collected. Information about socio-demographic status, economic status and income-expenditure behavior were also collected from the selected farmers. Focus group discussion (FGD) was also done to triangulate our data given by respondents. The secondary information were collected by reviewing different publication from district level government and non-government organizations and co-operatives, report from national level organizations namely, Ministry of Agriculture Development (MoAD), District Agricultural Development Office (DADO), Central Bureau of Statistics (CBS) etc. A set of questionnaire was prepared for the collection of primary data. The pre-testing of the constructed questionnaire was carried out to 20 farmers at Sanikhal using simple random sampling.

Data collected through household survey VDC of Salyan. Then correction of interview schedules was done accordingly. 120 households from the VDC was selected by was cleaned, coded and compiled and entered in SPSS (Statistical Package of social science) software. The data was processed using SPSS software. Frequency counts, cross tabs, comparison of means and standard deviation were done to generate meaningful information**.** In the statistical analysis mean, frequency, percentage, etc. was studied using descriptive statistical tools including cross tab. Indexing was done for problem ranking based on value given by respondents. Farmers' perception on problem faced during cereal seed production was analyzed by using scores of 0 and 1 respectively If farmers faced problem, value '1' was given otherwise value '0' was given to the problem.

Fig. 1: Map of Salyan showing Dandagaun VDC

Result and Discussions

Socio-economic characteristics of the respondents

Gender of house hold head

It is observed from Table 1 that 86.67% HH head were male headed and 13.33% were female HH head. 56.7% respondents did not produced seeds, while 43.3% produced seeds. Among male headed households less than half (42.3%) and half (50%) female headed households were cereal seed producers.

Table 1: Gender of household by seed production in study area (2014)

Gender of HH Head	Seed production		Total
	No	Yes	
Male	60 (57.7)	44 (42.3)	104 (100)
Female	8 (50)	8 (50)	16 (100)
Total	68 (56.7)	52 (43.3)	120 (100)

Figures in parenthesis indicate percent

Ethnicity of Respondents

The study reveals that Janajati (45.5 %) were major seed producer among male headed households while Dalit (50%) female headed households produced seeds. Least seed was produced by Brahmin (4.5%) and Dalits (4.5%) among male headed households, whereas; none of the Janajatis with female headed households produced any seeds (Table 2).

Religion of Respondents

Table 3 reveals that all male and female respondents were Hindu among seed producers and non-seed producers. District has 97.7% Hindu population (*NPHC, 2011)*.

Dependency Ratio

Dependency ratio was higher (0.7589) in non-seed producer than seed producer (0.7009), whereas, total dependency ratio in the surveyed VDC was 0.7343 (Table 4).

Table 2: Ethnicity of respondent in study area (2014)

Gender of HH head	Ethnicity	Produced the seed		Total
		No	Yes	
Male	Brahmin	6 (10)	2 (4.5)	8 (7.7)
	Chhetri	36 (60)	8 (18.2)	44 (42.3)
	Janajati	2 (3.3)	20 (45.5)	22 (21.2)
	Dalit	8 (13.3)	2 (4.5)	10 (9.6)
	Other	8 (13.3)	12 (27.3)	20 (19.2)
	Total	60(100)	44(100)	104(100)
Female	Brahmin	2 (25)	0 (0)	2 (12.5)
	Janajati	0 (0)	2 (25)	2 (12.5)
	Dalit	2 (25)	4 (50)	6 (37.5)
	Other	4 (50)	2 (25)	6 (37.5)
	Total	8 (100)	8 (100)	16 (100)

Figures in parenthesis indicate percent

Table 3: Religion of respondent in study area (2014)

Gender of HH Head	Religion	Produced the seed		Total
		No	Yes	
Male	Hindu	60 (100)	44 (100)	104 (100)
	Total	60 (100)	44 (100)	104 (100)
Female	Hindu	8 (100)	8 (100)	16 (100)
	Total	8 (100)	8 (100)	16 (100)

Figures in parenthesis indicate percent

Table 4: Dependency ratio of respondents in study area (2014)

Gender of HH Head	Seed Production		Total
	No	Yes	
Male	0.7545	0.6881	0.7272
Female	0.7917	0.7679	0.7798
Total	0.7589	0.7009	0.7343

Irrigation Status and Type of Land

Irrigated land area of seed producers (6 ropani) was found to be higher than land of non-seed producers (5.50 ropani) (Table 5).

Saving (NPR) among Seed Producer by Gender

Table 6 reveals that mean saving (about NRs. 80,872) was higher in male headed seed producing households compared to female headed household (NRs. 85710). Similar result was found in non-seed producing households. However, Value of Standard Deviation (S.D.) was higher in female headed non-seed producing households than male headed households.

Compare of Gender Role for Household Decision

Gender Role for Household Decisions

Table 7 reveals that both male and female decisions were vital in all household decisions of both male and female headed cereal seed producing households.

Table 5: Land type of the respondents in study area (2014)

Gender of HH Head	Land type (in ropani)	Seed Production		Total
		No	Yes	
Male	Area of irrigated land	5.67	6.00	5.80
	Area of partially irrigated land	8.00		8.00
	Area of rainfed land	6.73	7.66	7.19
	Area of khet land	5.40	5.67	5.50
	Area of Bari land	5.09	5.61	5.35
	Area of Khoriya	11.33	13.33	12.33
Female	Area of irrigated land	5.00		5.00
	Area of partially irrigated land	10.00		10.00
	Area of rainfed land	8.75	5.63	7.19
	Area of khet land	4.50		4.50
	Area of Bari land	8.88	4.25	6.56
	Area of Khoriya	15.00	11.00	13.00
Total	Area of irrigated land	5.50	6.00	5.67
	Area of partially irrigated land	9.33		9.33
	Area of rainfed land	7.27	7.12	7.19
	Area of khet land	5.14	5.67	5.30
	Area of Bari land	6.10	5.25	5.68
	Area of Khoriya	12.25	12.75	12.50

Table 6: Saving (NRs.) by gender in study area among seed producers (2014)

Gender of HH Head	Seed Production				Total	
	No		Yes			
	Mean	S. D	Mean	S. D.	Mean	S. D.
Male	105236.7	124370.3	80872.73	114277.4	94928.85	119668.7
Female	100270	131694.5	85710	140404.3	92990	126261.8
Total	104652.4	123176.2	81616.92	115492.8	94670.33	119460

Table 7: Gender role for household decision (2014)

Gender of HH Head	Decision role	Produced seed		Total
		No	Yes	
Male	Male	30 (50)	20 (45.45)	50 (48.08)
	Female	2 (3.33)	0 (0)	2 (1.92)
	Both	28 (46.67)	24 (54.55)	52 (50)
Female	Male	4 (50)	2 (25)	6 (37.50)
	Female	0 (0)	0 (0)	0 (0)
	Both	4 (50)	6 (75)	10 (62.5)

Figures in parenthesis indicate percent

Seed Production Technique in Study Area

Source of Seed and Area of Seed Production (in Ropani)

As presented in Table 8, the study shows that major source of seed was NARC among both Male headed and female headed seed producers. Area of seed production was higher in male headed households as compared to female headed households (Table 8).

Source of input and amount of input used

The Table 9 revealed that major source of other input was Agro-vet for both male and female headed households; Female headed households used more amounts of urea and manure.

Weeding, Field Inspection, Roughing, Grading, Drying and Selling of Seeds

Grading and labelling and packing were mostly practiced and removal of tips and bottom was main method of grading among both male and female headed households. Almost all seed producers practice seed drying and sun drying was practiced by all. The study also showed that average seed sold was 53.4 kg and Government organizations purchased the seed.

Table 8: Source of seed and area of seed production in ropani (2014)

Source of Seed	Gender of HH Head		Total
	Male	Female	
	Number	Number	Number
NARC	28 (63.63)	6 (75)	34 (65.39)
DADO and other Govt Farms	10 (22.72)	2 (25)	12 (23.07)
Agro vets	4 (9.09)	0 (0)	4 (9.09)
Others	2 (4.56)	0 (0)	2 (4.56)
Area of seed production (in rop.)	5.2	4.6	4.9

Figures in parenthesis indicate percent

Table 9: Source of input and amount of input used (2014)

Description		Gender of HH Head		Total
		Male	Female	
Source of input	Agro-vet	24(54.55)	4(50)	28(52.26)
	Local market	20(45.45)	4(50)	24(47.74)
Amount of input	Manure (Doko)	265	300	275.29
	Urea (Kg)	14.91	15	14.94
	DAP (Kg)	4.5		4.5
	MOP (Kg)	5		5

Table 10: Weeding, field inspection, roughing, grading, drying and selling of seeds (2014)

Description		Gender of HH Head		Total
		Male	Female	
Weeding times		1.23	1	1.17
Who inspect field	Yourselves	28 (63.63)	4 (50)	32 (61.5)
	DADO technician	16 (36.37)	4 (50)	20 (38.5)
Roughing	Yes	16 36.37)	2 (25)	18 (34.61)
	No	28 (63.63)	6 (75)	34 (65.39)
No of roughing		1.9	1.5	1.8
Practice grading	Yes	16 (72.73)	3 (75)	19 (73.08)
	No	6 (27.27)	1 (25)	7 (26.92)
Method of grading	Removal of tip and bottom	15 (68.18)	3 (75)	18 (69.23)
	Gravity separator	7 (31.82)	1 (25)	8 (30.77)
Seed drying	Yes	44 (100)	8 (100)	52 (100)
Labelling and packing	Yes	28 (63.63)	4 (50)	32 (61.5)
	No	16 (36.37)	4 (50)	20 (38.5)
Seed sold (Kg)		56.4	50.2	53.4
Who purchase the seed	GO	24 (54.52)	4 (50)	28 (52.26)
	Farmers	16 (36.37)	2 (25)	18 (34.61)
	Others	4 (9.1)	4 (25)	6 (13.13)

Figures in parenthesis indicate percent

Table 11: Problem of commercial seed production (N=120) in study area (2014)

Problem of Seed production	F	%	Index value	Rank
Lack of technical assistance	74	86.1	0.109	I
Lack of irrigation facilities	69	80.2	0.102	II
High cost of seed	64	74.4	0.095	III
Low quality seed	63	73.3	0.093	IV
Low price of agricultural product	62	72.1	0.092	V
Lack of machinery	62	72.1	0.092	V
Pesticide unavailability	55	64.0	0.081	VI
Unavailability of seed on time	54	62.8	0.080	VII
Unavailability of market	46	53.5	0.068	VIII
Lack of transportation facilities	36	41.9	0.053	IX
Lack of storage for agricultural product	35	40.7	0.052	X
Unavailability and high cost of fertilizer	32	37.2	0.047	IX
Disease and pest	25	29.1	0.037	X

Problem of commercial seed production (N=120)

Table 11 reveals that problem index of lack of technical assistance was highest i.e. 0.109 out of total 5 score. Thus, cereal seed producers are mostly facing the problem of lack of technical assistance. Disease and pest has lowest rank (0.037) which means respondents are indifferent towards disease and pest or have no idea.

Conclusion

Cereal seed production is one of the prioritized agriculture production activities by National seed vision 2013-2025 and different Government plans and policies for hill farming systems. Though seed production area and number of producers have increased significantly in the present years but the production and productivity is still below the target. Similarly, gender issue has also increased among seed producers.

The dependency ratio among cereal seed producer was 0.7009, which is lower than that of non-seed producer. In total, Non-seed producers (9.805 ropani) have more farm size than seed producer (6.91 ropani). Similarly, both male and female headed seed producer households have rainfed irrigation status (7.66 and 5.63 ropani) and khoriya land type (13.33 and 11 ropani) respectively.Decision making regarding different activities in study area were done either by male or female or jointly by both gender. In business operation, selection of crop, household decision, input purchasing, selling of household production, social and religious functions, financial activities and involvement in organization, jointly both male and female decisions were vital. Seed producing farmers generated more income than non- producing farmers.

It was observed that lack of technical assistance and lack of irrigation facilities ranked first and second with index values 0.109 and 0.102 respectively. Most of the respondents had considered disease and pests least constraints for cereal seed production.

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