



Comparative Socioeconomic Analysis of Rice Seed and Grain Producer in Ramgram Municipality of Nawalparasi District, Nepal

Sushila Khatri*, Deepak Ghimire, Manisha Sigdel and Prakash Pant

Institute of Agriculture and Animal Sciences, Tribhuvan University, Nepal

*Corresponding Author: Sushila Khatri, Institute of Agriculture and Animal Sciences, Tribhuvan University, Nepal.

Received: July 09, 2018; Published: July 30, 2018

Abstract

The demand of rice seed in Ramgram municipality is increasing at increasing rate every year but the supply is not sufficient to meet the demand. As well, the analysis on its economic aspect is also lacking far behind. A survey research was carried out in Ramgram Municipality of Nawalparasi District, Nepal with the aim to investigate the socio-economic aspects of rice seed and grain production. A purposive random sampling technique was used to select 60 Households (sample size) for the collection of data regarding rice seed and grain production system by means of pre-structured and pretested questionnaire. The study revealed that the respondents practicing rice seed production have higher years of schooling and trainings attended than the respondents practicing rice grain production. Further, the study showed that the gross income received from rice seed production was higher than that of grain production. The study also showed that the seed producers are in direct exposure to quality seed and fertilizer subsidy leading to low production cost. On an average the BCR of grain production was found to be 1.93 and that of seed production was found to be 2.67.

Keywords: Rice; Seed; Grain; Economics; Benefit-Cost Ratio

Abbreviations

AGDP: Agriculture Gross Domestic Product; GDP: Gross Domestic Product; BCR: Benefit Cost Ratio; DADO: District Agriculture Development Office; SQCC: Seed Quality Control Centre

Introduction

Many cereal crops are grown in Nepal dominated by Rice, maize and wheat. Among different cereals, rice is the major and stands first position in terms of area and production [1]. Among the total Agricultural Gross Domestic Product (AGDP) i.e. 29.75% of National GDP, cereals contribute 49.41% out of which rice accounts 21% [2]. Rice occupies 58% of the total cultivated land and 55% of the total food grain production [3]. The national production of rice is 1425346 ha area with the production of 4788612 metric ton and productivity of 3.35m.ton/ha [4]. The area, production and productivity of rice in Nawalparasi district is 44,500 ha, 1, 57,873 mt and 3.548 mt/ha [4]. Rice farming has been adopted by many farmers over the district and has been reflected in their livelihood strategies.

Rice cultivation is primarily focused for seed and grain purpose. Several constraints are restricting rice growing farmers to shift to seed production which are still unexplored. Exploring the existing socio-economic situation of rice grain and seed production in the site of study is an important requisite for further expansion of the seed production of rice. This study primarily is concerned to explore the comparative socio-economics of rice seed production and grain production along with calculation of the production costs, net return and calculate Benefit Cost Ration (BCR) of rice seed and grain production in Ramgram Municipality, a potential area for rice seed production in the western terai region of Nepal.

Materials and Methods

Pre-structured and pretested questionnaire were used as a tool to collect primary information. Using purposive simple random sampling 30 seed producers were selected. 30 rice grain growers at nearest distance from the seed producers were selected. As a whole sample size of 60 was taken from the whole district to represent the total rice growers. The study area, Ramgram Municipality

of Nawalparasi district, was selected purposively as it is one of the major rice producing regions in the country and is emerging as the major hub of rice production in Nepal. Key informant interviews were carried with stakeholders like District Agriculture Development Office (DADO), farmers group and cooperatives involved in rice production and seed companies to generate the general status of rice grain and seed production in the district. The secondary data used was extracted from publications and reports prepared by seed companies, DADO, Statistical information books; review of legal documents, the policy initiatives, the strategies, plans and the programs related to the rice seed and grain production and its issues; data and statistics extracted from the websites, etc.

Primary data collected through field survey and secondary data collected through desk research was compiled, processed and analysed through Microsoft Excel. Descriptive statistics (mean median, mode, percentage, range etc.) were used to summarize the variables. Production costs, net return and BCR was used to analyze the compare the economics of grain and seed production.

Results and Discussion

Socio-economic characteristics of households

Ethnicity of seed and grain producing farmer

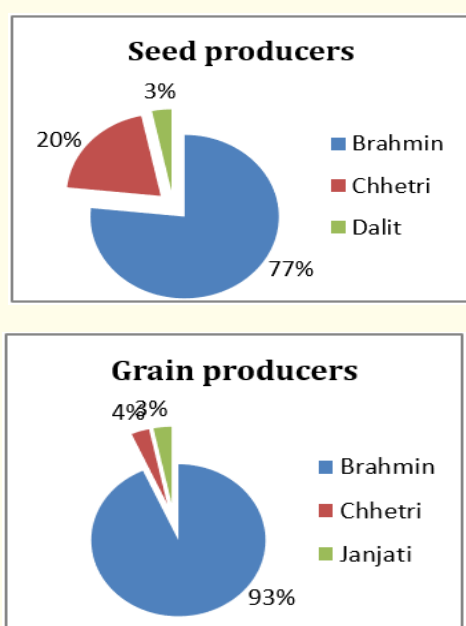


Figure 1: Ethnicity of respondents in study area.

The study showed that majority of respondent practicing seed cultivation were Brahmin (76.67%) followed by Chhetri (20.00%) and Dalit (3.33%). Similar is the case for grain cultivation where the majority is Brahmin (93.33%) followed by Chhetri (3.33%) and Janjati (3.33%). The study reveals that there is less involvement of Janajati in the seed and Dalit in grain production of rice.

Education status of seed and grain producing farmers

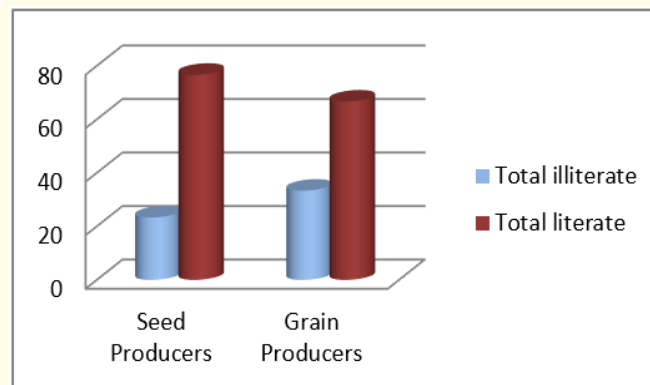


Figure 2: Education status of respondents in study area.

The study shows that the majority of farmer producing both seed and grain are literate i.e. (76.67%) of seed grower and (66.67%) of grain grower.

Average year of schooling of seed and grain producing farmers

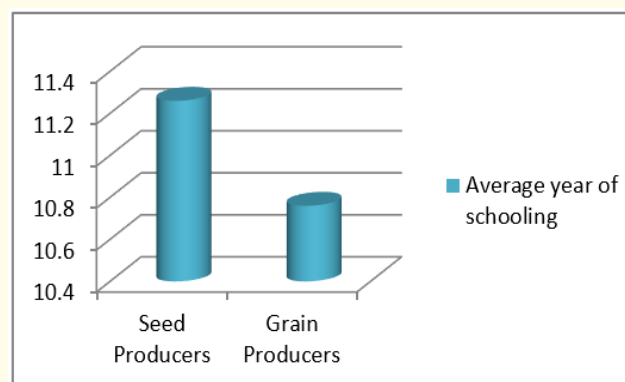


Figure 3: Average year of schooling of respondents.

The study revealed that average years of schooling of seed producer was 11.26 years while that of grain producing was 10.76 years.

Average family size of seed producers and grain producers

The majority of seed producing farmers family members belong to age group between 15 - 60 (71.72%) followed by member of age group below 15 years and members above 60 (9.83%). And the most of the farmer families producing grain also belong to age group between 15 - 60 (66.86%) followed by age group below 15 (23.42%) and members above 60 (9.71%).

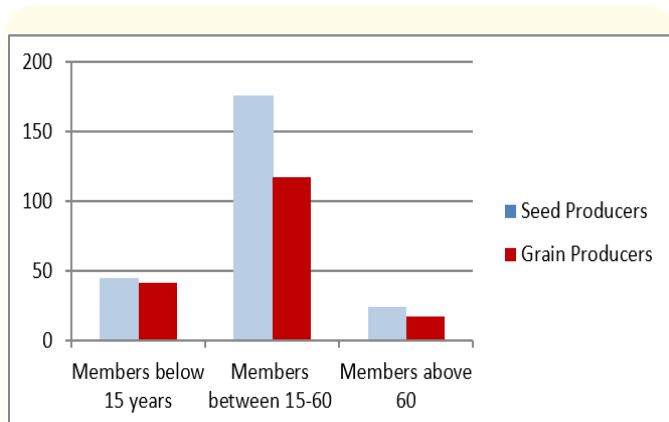


Figure 4: Average family size of seed and grain producers.

Sources of income of seed producers and grain producers

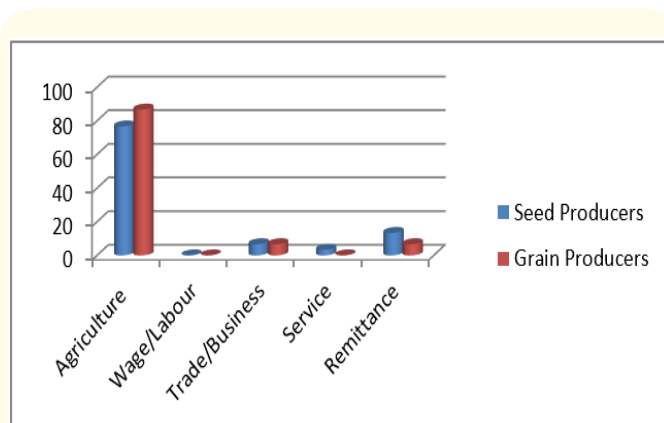


Figure 5: Sources of income of respondents.

Agriculture was found to be the major source of income for majority of seed producers (76.67%) followed by remittance (13.33%), trade/business (6.66%), service (3.33%). Similar was the case for grain producers i.e. agriculture was the major source of income for 86.67% of respondents followed by service (10%), remittance (6.66%) and trade/business (6.66%).

Land holding of seed and grain producing farmers

The average owned land holding of respondents practicing seed production was found to be higher than that of grain growers. Similarly, average leased in land by seed growers was also found to be higher than that of grain growers.

Total Owned (hectare)	1.74	0.37
Total Leased-in (hectare)	0.11	0.03
Total leased out (hectare)	0.15	0.06
Total Cultivated land (hectare)	1.71	0.33

Table 1: Land holding status of seed and grain producing farmers.

Training status of seed producing and grain producing farmers

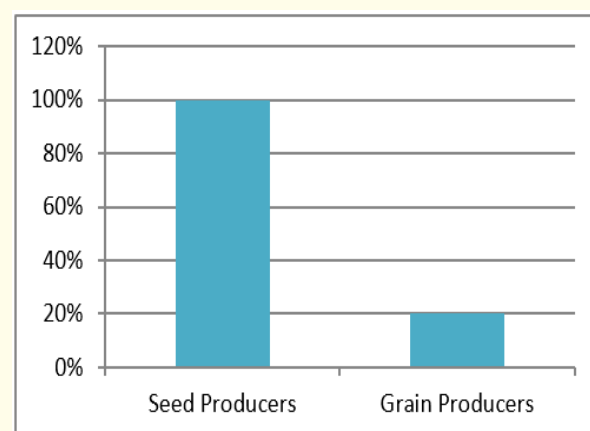


Figure 6: Training status of seed producing and grain producing farmers

All the sampled farmers of seed growers were found to have attended the training organized by either governmental organizers like DADO or non-governmental organizers like seed companies, NGOs/INGOs. While, the grain producers lacked participation in training for seed production and seed marketing; only 20% of them have attended the training.

Source of seed for seed production and grain production

The formal seed sources are government agency, co-operatives, private agencies/agro-vet while the informal seed sources are relatives, neighbors, self- produce. The study showed that 20% of the grains producing farmers acquire seed from formal seed source while 80% acquire from informal seed source. Seed Quality Control Centre (2016) explains that among different sectors, formal sector representing public, private and community organizations are becoming prominent in recent years; even though nearly 90% of the seed supply comes from traditional individual farmer led informal sector representing mainly farmer-based seed system [5].

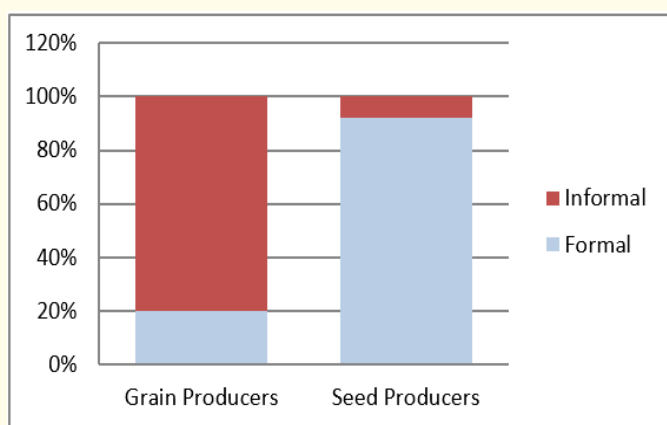


Figure 7: Source of seed for seed production and grain production.

The study showed that 93.33% of seed growing farmers choose formal seed source i.e. DADO. Seed producing farmer are more dependent to formal seed sources because of availability of high quality seed, and subsidy on input (seed).

Economic Analysis

Production cost of rice seed production and grain production

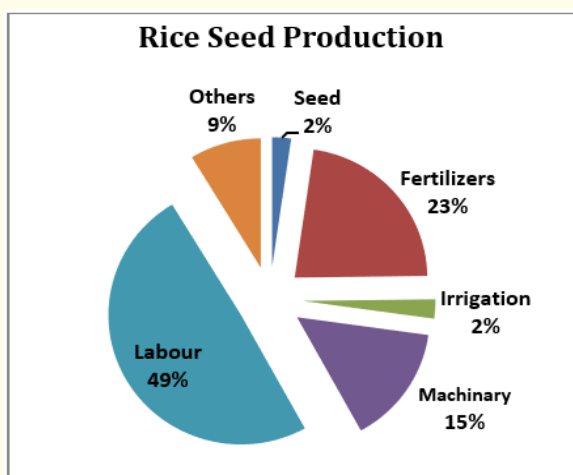


Figure 8: Distribution of cost incurred in Rice Seed Production.

Among the costs incurred in various sections for rice production, highest share of cost was incurred for labor in both seed and grain production. However, the labor cost was found to be higher for rice grain production (53%) accompanied by the lower share of cost in machinery use (10%).

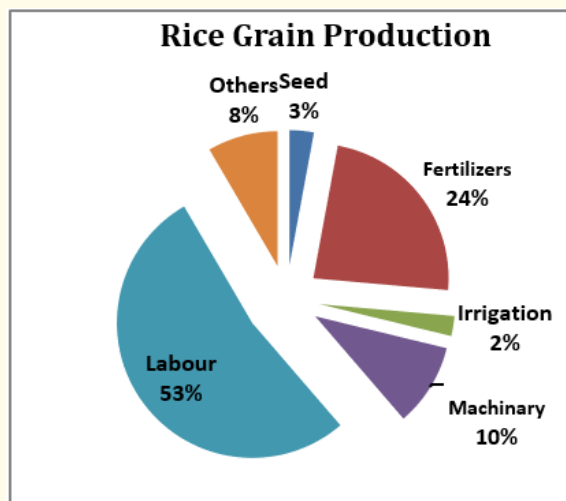


Figure 9: Distribution of cost incurred in Rice Grain Production.

The average total production cost for rice seed was Rs. 46935.22/ha while that for rice grain was Rs. 62741.8/ha. This showed that the production cost of rice seed is found to be lower by 25.19% than the rice grain production cost. Regmi and Gauchan (2012) states that fresh replacement of quality seeds of improved varieties increases not only the yields but also reduces cost of production due to lower seed rate requirement and disease free status of the good quality vigorous seeds [6].

Benefit Cost Ratio for rice seed production and grain production

Average Total cost for seed production (in NRs.)	46935.2	B/C ratio = 2.64
Average Total revenue from Seed (in NRs.)	124248.5	
Average Total cost of grain production (in NRs.)	62741.8	B/C ratio = 1.93
Average Total revenue from grain (in NRs.)	121139	

Table 2: BCR for seed and grain production per hectare in the study area.

The table 2 briefs about the cost involved and revenue received in seed production and grain production per hectare along with BCR calculation. With the average total cost for seed production Rs. 46935.2/ha and revenue received Rs. 124248.5/ha, the BCR was found to be 2.64. Similarly, for grain production, with the cost involved Rs. 62741/ha and the revenue received Rs.121139/ha, the BCR was 1.930. According to MOAD (2016/17), the study con-

ducted in Chitwan and Sarlahi district also had similar results with BCR of rice seed production 2.03 and 2.26 respectively with an average BCR of 2.14 [4]. Also, Gauchan, *et al.* (2014) found that the BCR of seed production through cooperative was 3.78 while that of Seed Company was 2.60 [7]. The BCR for seed production might be higher due to support from government/NGO/INGO/Seed Company lowering the input cost.

Net return from rice seed production and grain production

Net return per hectare (total revenue minus total cost) from seed production is Rs. 77313.3 and grain grower is Rs 58397.2. The study showed that there is 32.39% higher return from seed production than grain production system. Sapkota (2014) also found that seed producers receive additional benefit 59% higher (with the average of 47%), if the same piece of land is used for seed production instead of grain production [8].

Conclusion

The study revealed that majority of the respondents was Brahmin in both production system i.e. 76.66% of seed and 93.33% of grain. Similarly, majority of farmers producing both seed and grain are literate i.e. (76.67%) of seed grower and (66.67%) of grain grower. Further, the study showed that the major source of income was agriculture for majority of both seed producers and grain producers (76.67% and 86.67% respectively). The average land cultivated by a seed producer was 1.17 hectare and that by grain grower was found to be 0.33 hectare. The study illustrated that the respondents practicing seed production were 100% trained while only 20% of the respondents practicing grain production were trained.

Among the costs incurred in various sections for rice production, highest share of cost was incurred for labor in both seed and grain production. However, the labor cost was found to be higher for rice grain production (53%) accompanied by the lower share of cost in machinery use (10%). Further, the BCR for seed production was calculated to be 2.64 while that for grain production was 1.93. The BCR of seed grower was higher due to subsidy in seed, fertilizer, etc. received by seed producer lowering their cost of production.

Acknowledgements

We are thankful to all the helping hands (teachers, friends, juniors) during various phase of the research. Our special thanks to all the respondent farmers and agriculture officers from DADO Nawalparasi whose cooperation during the study was an important aspect of the study.

Conflict of Interest

No conflict of interest exists.

Bibliography

1. Ministry of Agriculture Development (MOAD). "Statistical Information on Nepalese Agriculture 2013/2014: Ministry of Agriculture Development, Government of Nepal" (2014).
2. Ministry of Agriculture and Cooperatives (MOAC). "Statistical Information on Nepalese Agriculture 2014/15: Times series Information". Kathmandu, Nepal (2015).
3. Ministry of Agriculture and Cooperatives (MOAC). "Statistical Information on Nepalese Agriculture 2004/05: Time Series Information". Kathmandu, Nepal (2005).
4. Ministry of Agriculture Development (MOAD). "Krishi Diary 2016/17: Agriculture Information and Communication Centre, Government of Nepal" (2017).
5. Seed Quality Control and Commission (SQCC). Seed balance sheet for Fiscal Year 2015. Ministry of Agriculture Development (MoAD), Pulchowk, Lalitpur, Nepal (2016).
6. Regmi S and Gauchan D. "Seed vision 2025: Seed Sector Development Strategy for Nepal (Draft Report)". Seed Quality Control Centre/National Seed Board, MoAD, Kathmandu, Nepal (2012).
7. Gauchan D, et al. "Patterns of adoption of improved rice varieties and farm level impact in stress prone rainfed areas of Nepal". In: Patterns of adoption of improved rice varieties and farm-level impacts in stress-prone rainfed areas in South Asia (S Pandey, D Gauchan, M Malabayabas, M Bool-Emerick and B Hardy, eds).International Rice Research Institute (IRRI), Los Baños, Philippines (2012): 318.
8. Sapkota S. "Institutional aspect of rice seed system: A scenario for Nepal". A PhD Thesis. Institute of Agricultural and Animal Science (IAAS), Tribhuwon University, Rampur, Chitwan, Nepal (2014).

Volume 2 Issue 8 August 2018

© All rights are reserved by Sushila Khatri, *et al.*