



Research Article

Exploring the Constraints and Potential Benefits Associated with Family Farming for Livelihood Improvement in Highlands of Pakistan

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Abstract | Family farming is basically a system to establish a set up for forestry, agricultural, fisheries, countryside and aquaculture production. Through family farming employment generation takes place and unemployment issue prevailing in the society minimizes. The output of the family farm is high productivity and enhancement in farm income. Directly or indirectly, family farming leads to the food security situation and uplifts people's living quality. All the rural farm families residing in district Mansehra served as the population for the study. In order to have a representation of the entire population, female respondents from the study area were drawn randomly. A total sample size of the study was 110 respondents (rural female engaged in different farming activities). Data were collected through pre-tested interview schedule and analyzed using SPSS. Results showed that an overwhelming majority of respondents (89.1%) were perceived that family farming played a significant role in improving their livelihoods on a sustainable basis. A large majority (84.6%) of respondents reported the positive role of family farming in rural livelihood development. Among different potential benefits of family farming "minimize household food insecurity" was perceived as the highest with the utmost mean (4.71/5.00). Rural female in the research area faced a number of constraints inefficient adoption of family farming practices. Out of these constraints "non-availability of female rural development practitioners/workers" was on the top with maximum mean value (4.66/5.00). The study recommended that there is a need to educate female farmers involved in family farming through extension activities to perform their activities effectively and efficiently. The major purpose of present study was to explore the constraints and potential benefits associated with family farming for livelihood improvement in the highlands of Pakistan.

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Introduction

Family farming is exposed to terrible political, social, economic and ecological changes. To make sure the progress at the intra-family level and long

term survival of their farms; farm families need to adopt innovative, sustainable and market driven strategies (Suess-Reyes and Fuetsch, 2016). Agriculture in the developing world has a low productivity rate relative to the rest of the economic domains (Gollin,

2010). So far, till now average land size in Pakistan is 2.5 acres (Rehman *et al.*, 2016). Political reformation has caused a reduction in support for this sector. Changes are also occurring on the demand side; food safety measure and quality standards are being more tightened. Technological shifts, ever-changing social values, environmental disasters and climate change as a whole has the serious consequences for the family farming (Lankester and Brimblecombe, 2012). The leaching down effect of these changes also creates the challenges for family farming at small scale (Garner and de la O Campos, 2014). This situation could be undoubtedly forcing hurdles to the livelihood improvement in the highland areas as well.

Farm income is an essential parameter to estimate the capacity of the family farm. For reaching the goal of national food security, farm incomes could be a valuable addition by the family farms. Gender effects, land rights and economic value at a family farm are three big role-playing phenomenon for food security at a local level (Schleifer and Sun, 2020). In the regional scope of the family farms, high-quality crops, and high nutritional value products are very important. This will enable the family farms to alleviate poverty at an individual farm level by increasing the farm income (Nikolova, 2020). For this reason, provision of skills to the owners of the family farms could be an asset to the impoverished situation for them. Skills regarding record keeping, decision-making, and choosing more sustainable and environment-friendly options should be prioritized (Kagotho *et al.*, 2019). Farm resource management (FRM) is an approach that could be an addition to adopting skilled-based operations at the farm. For those problems that FRM face like; poor knowledge on resource management at farm level, lack of storage facility, lack of farm machinery, and labour crisis are the prominent ones that need special attention by the public sector of extension (Halder *et al.*, 2019). Diversified production of vegetable crops and staple food at regional family farms, can be a worthy initiative to stabilize the economic situation of the individual family farm and food security situation at a wider range (Wittman *et al.*, 2017). This approach of taking the initiative from ground to national level is well explained by Swanson and Rajalahti (2010) as illustrated in Figure 1.

Another more evidently associated factor of women in Khyber Pakhtunkhwa, they participate very little, especially outside from their houses due to socio-cul-

tural norms and its purdah rigid society. However, women take part almost in all on-farm operations except ploughing in arid zones, hilly areas and tribal belts (Khan *et al.*, 2012). In Pakistan, the women's contribution to the farm sector can be measured from the time spent percentage during agricultural activities. For example, in cotton and rice-growing areas in Sindh, women spent 50.42% and 39.34% of man-day per annum, respectively (Qadri and Akbar, 1982).

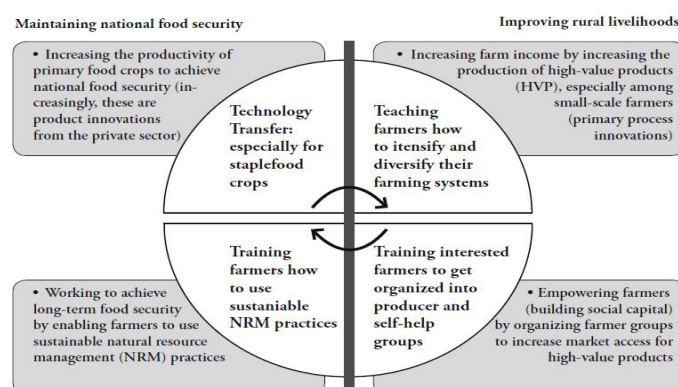


Figure 1: Key functions of extension in achieving specific national agricultural goals.

Family farming is basically a system to establish a set up for forestry, agricultural, fisheries, countryside and aquaculture production. This setup is supervised, manage and run by a family. Household labour, including men and women, mainly run the farming circle. The farm and family has the link which combines, co-evolve environmentally, socially and economically (FAO, 2015).

Peter (2008) researched the benefits and multiple functions of small landholding agriculture. To provide good quality food of adequate quantity to the people is the foremost benefit of family farming. He said that farming managed natural resources and minimized environmental pollution. It opens the gates for the employment for peasants and other rural workers who could not engage themselves in non-agricultural activities. It minimized conflicts and created a peaceful environment. This triggered the authors to highlight the constraints associated with family-farming so that a better farming environment could be ensured for female farmworkers. Besides that, finding out the potential areas contributing to family farming was on this study's agenda. The major purpose of present study was to explore the constraints and potential benefits associated with family farming for livelihood improvement in the highlands of Pakistan.

Materials and Methods

The present study was conducted in a high land region of Pakistan. The region is commonly known as North-West region and presently as Khyber Pakhtunkhwa province of Pakistan. The region is very much famous for the variety of fruits and vegetable production. All the rural farm families residing in district Mansehra served as a population for the study. In order to have a representation of the entire population, female respondents from the study area were selected randomly. Through a simple random sampling technique, two tehsils were selected. Two union councils were selected randomly from each tehsil. From each selected union council, 2 villages were also selected randomly. From each village, 13 women respondents involved in farming activities were selected at random, thereby making a sample of 104 respondents. For more generalization of the sample, this size was increased to 110 female respondents.

Keeping in view the study's specific objectives, an interview schedule was designed to collect the required information. Five Point Likert type scale (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree) was used to record opinions of respondents. The interview schedule was originally prepared in English, which was later on translated into local language Urdu. Due to the research area's cultural and social values, it was difficult for the researchers to collect data from the field during a survey by themselves. For this purpose, a data collection team was constituted of post graduate students of the Department of Agricultural Extension, University of Agriculture, and Peshawar.

For the analysis of the data, Statistical Package for Social Sciences (SPSS) was used. Uni-variate analysis such as percentage, central tendency measures (mean, standard deviation) and frequency was used to describe the data. So, descriptive/univariate statistics were used to calculate, interpret and discuss, draw conclusions, and formulate the recommendations.

Results and Discussion

Demographic characteristics

Age: It is generally believed that the individual becomes mentally mature and become independent with the increase in age. Therefore, age can be one of the important factors affecting the decision-making

power of the respondents. The respondents were asked about their age and based on their responses, the table classified age as minimum and maximum. The data regarding this aspect are given in [Table 1](#).

Table 1: *Distribution of respondents according to their age.*

Minimum age	Maximum age	Mean age
25 Years	75 Years	39 Years

Out of 110 women respondents, the minimum age of females was 25 years, the maximum age was 75 years, and most of the female respondents had a mean age of 39 years. So, it is obvious from the above results that middle-aged (above 35-50) women are mostly involved in family farming activities for ensuring household food security as compared to young (up to 35) or old (above 50) women.

Education: Education means a number of years of schooling, and it is the total of all the processes for bringing about desirable change in human behavior ([Memon, 1993](#)). Education develops knowledge and other desirable qualities of mind and general competence, especially by means of formal schooling. It is a fact that an educated person is expected to be analytical and logical towards things. Keeping these facts in view, the present research, therefore, attempted a probe into the respondents' educational level. The information in this respect is given in [Table 2](#).

Table 2: *Distribution of respondents according to their education.*

Educational level	Number of respondents	Percentage
Illiterate	47	42.7
Primary	29	26.4
Middle	18	16.4
Secondary	16	14.5
Total	110	100

It is evident from the data embodied in [Table 2](#) that the majority of the female (42.7%) in the research areas were illiterate. Only few (14.5%) of respondents had secondary (up to 10 years of schooling). This is unfortunate and disappointing that still in most rural areas of highlands of Pakistan, widespread illiteracy is present. A number of factors are responsible for this high level of illiteracy in rural female in the area. Social security for female and non-availability of schools and colleges at the village level are the major ones.

Perceived role of family farming in uplifting rural livelihoods

The respondents were asked to give their opinion or perception about family farming's role in uplifting rural livelihoods on a sustainable basis. The respondents response was assessed in the form of dichotomous data (yes) and (no). The data in this regard is tabulated in [Table 3](#).

Table 3: Percentage distribution of respondents regarding the role of family farming in uplifting rural livelihoods as perceived by respondents.

Perceived role of family farming in uplifting rural livelihoods	Number of Respondents	Percentage
Yes	98	89.1
No	12	10.9
Total	110	100.0

During data collection, a large majority of the respondents said that as the agricultural land is going to be decreasing day by day due to land fragmentation and already, we have small landholdings. We used to do subsistence farming. In this situation of small agricultural landholdings, a large number of respondents said that family farming is the best solution to combat poverty and household food insecurity situation, particularly in the research areas. As the data presented in [Table 1](#) clearly indicated that family farming plays a role in uplifting rural livelihoods, the respondents were further asked to give response regarding potential benefits of family farming through which family farming plays a role in upgrading rural poor's livelihoods.

The respondents were further asked to assess the role of family farming in uplifting rural livelihoods and food security situation at the household level as positive or negative, and the data in this regard is given in [Table 4](#).

The data given in [Table 4](#) shows that a very high majority of the respondents (84.6%) responded and reported the positive role of family farming in uplifting rural livelihoods and improving food security situation at the household level. However, few (15.4%) of the respondents reported a negative role of family farming in uplifting rural livelihoods and also in improving food security situation at the household level. This shows the potential of family farming in improving the livelihood status of rural households.

Table 4: Distribution of respondents according to their perception about the role of family farming in uplifting rural livelihoods.

Role of family farming in uplifting rural livelihoods	Number of Respondents	Percentage
Positive	83	84.6
Negative	15	15.4
Total	98	100.0

Potential benefits of family farming as perceived by respondents

Family farming is basically a system to establish a set up for forestry, agricultural, fisheries, countryside and aquaculture production. This setup is supervised, manage and run by a family. Household labour, including men and women, mainly run the farming circle. The farm and family is the link between environmental, society and economics ([FAO, 2015](#)).

There are many potential benefits of family farming as perceived by respondents. Cost-saving, labour saving, increase in profit, increase management, increase management, increase production and minimize household food insecurity were considered as potential benefits and enlisted for the present study. The respondents were asked about these benefits, and the data regarding this aspect are presented in [Table 5](#).

Table 5: Distribution of activities based potential benefits of family farming as perceived by women.

Activity-based potential benefits	Mean	SD
Cost-saving	4.60	0.492
Labour saving	4.53	0.520
Increase in profit	4.55	0.552
Increase management	4.62	0.635
Increase production	4.45	0.568
Minimize household food insecurity	4.71	0.454

The data tabulated in [Table 5](#) reveals that minimize household food insecurity was considered as potential benefit fell in the range of agree and strongly agree categories with mean value 4.71. Increase management cost saving and increase in profit recorded between strongly agree and agree categories with the mean values 4.62/5.00, 4.60/5.00 and 4.55/5.00, respectively. Labour-saving and increase production were the benefits fell in between agree and strongly agree with having mean value 4.53/5.00 and 4.45/5.00, respectively. The results showed that family farming was very much beneficial for raising rural livelihoods and

helping in minimizing household food insecurity.

Constraints faced by females regarding work at the farm

Rural females participated in family farming activities for securing livelihoods. But due to cultural boundaries, women faced constraints regarding work at the farm. Keeping in view this aspect, the respondents were asked about their problems they had faced during work at the farm. Activities based on constraints were listed in Table 6 and scaled selected ranging from 1 to 5 categorized as agree, strongly agree, undecided, disagree and strongly disagree.

The data tabulated in Table 6 depicted that all the constraints fell between agree and strongly agree categories with different mean values. Burden of household work was one of the major constraints faced by females having a mean value of 4.92/5.00. The constraints faced by rural females included non-availability of female rural development practitioners/workers, dominant male society and social structure, lack of social security and lack of access to agriculture extension services having mean values 4.66, 4.64, 4.60 and 4.59, respectively. Agricultural extension staff must have easy access to farmers for timely technology transfer (Safdar *et al.*, 2016). Lack of transport facilities, lack of access to agriculture information sources and lack of access to agriculture education and training facilities were having the same mean value (4.57/5.00).

The constraints like low farm wages, lack of property rights and low literacy level of females having the same mean value (4.53/5.00). Lack of access to computer-related information delivery and exchange system, child care and gender violence constraints faced by rural females having the same mean value (4.52/5.00). Limited public and private sector outreach activities, lack of support and encourage of women in group fieldwork, lack of incentives for rural women to participate in farm practices, financial assistance, lack of provision of agricultural credit facilities and lack of authority in decision making regarding farm practices and daily house life were constraints with having mean values 4.51/5.00, 4.50/5.00, 4.49/5.00, 4.48/5.00, 4.47/5.00 and 4.46/5.00, respectively. Reorganization and appreciation of women work, traditional belief system, mobility issues, and technical assistance were limitations faced by rural women with having mean value 4.45/5.00, 4.45/5.00, 4.45/5.00 and 4.38/5.00, respectively.

Table 6: *Distribution of activities based on constraints faced by females regarding work at the farm.*

Constraints	Mean	SD
Non-availability of female rural development practitioners/workers	4.66	0.475
Male dominant society and social structure	4.64	0.483
Lack of social security	4.60	0.492
Traditional belief system	4.45	0.499
Burden of house-hold work	4.92	3.793
Child care	4.52	0.502
Lack of transport facilities	4.57	0.497
Lack of access to agriculture extension services	4.59	0.512
Lack of access to agriculture information sources	4.57	0.497
Lack of access to agriculture education and training facilities	4.57	0.497
Lack of access to computer-related information delivery and exchange system	4.52	0.520
Low farm wages	4.53	0.520
Lack of authority in decision making regarding farm practices and daily house life	4.46	0.501
Lack of support and encourage women in group fieldwork	4.50	0.502
Lack of land property rights	4.53	0.502
Reorganization and appreciation of women work	4.45	0.500
Gender violence	4.52	0.502
Lack of provision of agricultural credit facilities	4.47	0.520
Lack of incentives for rural women to participate in farm practices	4.49	0.502
Limited public and private sector outreach activities	4.51	0.520
Low literacy level of female	4.53	0.520
Technical assistance	4.38	0.663
Financial assistance	4.48	0.537
Mobility issues	4.45	0.536

Potential role of family farming in poverty reduction: A qualitative analysis

During discussion with the members of families in the study area, the data collection team came up with various responses about family farming as a potential source of income. Here, we would like to mention 03 views among the many, which have a realistic approach. Firstly, when a family asked about the potential benefits of the family farming they said;

We are our own supervisors, and we can set our own working hours keeping in view the farm situation and the tasks which require daily base attention. Multiple

tasks can be carried out at the same time by dividing the associated activities. It also generates a sense of responsibility in a family as a whole and brings the satisfaction of producing our own food.

From their views, it is clear that they enjoy being their own boss and setting their working hour accordingly. Division of work among the different family members is another blessing they enjoy. Conclusively they experienced that their farm makes them a responsible individual. [Di-Domenico and Miller \(2012\)](#) found that family farming has an exceptional contribution in making a farmer independent what he does. Having food grown by them also brings satisfaction to mind and great health benefits. These all benefits only get enjoyed the owners of family farms. In addition to this second response from a family owing a family farm was quiet animal-oriented;

At our farm animals are considered as part of the family, and this phenomenon requires lots of patience. They get well care and could avoid the routine of the antibiotics injections compared to the farms handled at commercial levels and open farms. In our opinion, happy and healthier animals mean a happy and healthy family or consumers.

This family owing family farm stated that they use to take their farm animals as part of their family. Most interesting thing stated by them is that they get to develop a factor of patience due to this. Keeping in view the health of animals and humans as well they treat their animals with traditional care instead of the conventional or commercial one. Moreover, there is evidence of long-term health effects on the ruminants and consumers as well, if the livestock is treated with antibiotics regularly ([Oliver et al., 2011](#)). They associated the health of society with the health of animals that society own. Thirdly the views of a family about owing a family farm were more oriented to learning.

Learning at the farm has multiple benefits, including setting the practical knowledge base. Our generation will learn the maximum by working at our farms. Learning through agricultural techniques at our farm explicate us about the many other things like; genetics, environment and management.

They highlighted the learning phenomenon by doing farm work at their family farm. In this way, they also prioritized the learning by practical effort. They

claimed that they get to know about the genetic qualities of different varieties in the same crop. They get well understand the environment and management of time and task is also an extra benefit they learn at the family farm. Gender values, farm practices and decision-making qualities interference at family farm enable the practitioner with maximum and quality learning without any cost ([Carnegie et al., 2020](#)). There is no doubt that countless applications about which an individual from the family-owned family farm can learn. This clarifies that family farm is blessing either on a wider level or at a short level.

Conclusions and Recommendations

It was concluded that the average age of respondents in the study area was 39 years. Educational status of respondents was very low as the majority of the respondents were found illiterate. It was concluded that out of different potential benefits of family farming, “minimize household food insecurity” was at the top with maximum mean 4.71/5.00. The results concluded that family farming was very much beneficial for raising rural livelihoods and helping in minimizing household food insecurity. All the constraints faced by rural females fell between agree and strongly agree categories with different mean values. Lack of transport facilities, lack of access to agriculture information sources and lack of access to agriculture education and training facilities were having the same mean value, i.e. 4.57/5.00. The constraints like low farm wages, lack of property rights and low literacy level of females having the same mean value, i.e. 4.53/5.00. Lack of access to computer-related information delivery and exchange system, child care and gender violence constraints faced by rural females having the same mean value of 4.52.

The study recommended that there is a need to educate female farmers and skill development involved in family farming. This could be achieved by involving local extension departments, so their activities could be made effective and efficient. For this purpose, training should be arranged for women at the community level through female trainers. Rural females are participating in family farming activities for securing their livelihoods. But due to cultural boundaries, women are facing so many constraints regarding work at the farm. Government sector, NGOs, and policy makers should focus on the constraints faced by rural women and should take positive actions.

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Novelty Statement

Constraints to the family farming where females are main role player have been ignored by the researcher community. This is an effort of finding the constraints alongside the potential benefits entangled with family farming in an area where values and norms are of critical importance.

Author's Contribution

Raheel Saqib: Conceived the idea of research as principal author and finalized the manuscript.

Muhammad Luqman: Prepared initial draft of manuscript.

Saleem Ashraf: Reviewed the literature.

Tahir Munir Butt: Prepared research instrument.

Abdur Rehman: Data analysis.

Muhammad Umer Mehmood and Imtiaz Hussain: Field data collection.

Conflict of interest

The authors have declared no conflict if interest.

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