

## AN ANALYSIS OF THE PROBLEMS FACED BY FARMERS IN THE MOUNTAINS OF NORTHWEST PAKISTAN: CHALLENGES FOR AGRI. EXTENSION

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Farming in the mountain areas has always been a challenge for agri. extension workers and researchers. The mountainous areas of most of the countries are usually among least developed regions and the mountain communities largely depend on farming for their subsistence. At the same time harsh weather, remoteness, scattered population, underdeveloped infrastructure etc. are some of the key factors hampering the better agricultural productivity in such areas. In this perspective the main objective of this paper is to underline some of the factors hindering the agricultural productivity and effective agri. extension services in the mountainous areas of Khyber Pakhtunkhwa province of Pakistan. Both qualitative and quantitative methods were used for the purpose of data collection. Key informants as well as focus group interviews and participant observations were included to acquire qualitative data. Quantitative data were collected through a well structured questionnaire. The results revealed that small land holding, lack of access to bank loans, lack of female extension workers and subsistence farming are found to be some of the key challenges for effective agri. extension service in the area.

**Keywords:** mountain farming, agricultural extension, Northwest Pakistan, subsistence farming, agricultural loans

### INTRODUCTION

The Khyber Pakhtunkhwa province of Pakistan (Formerly known as the North West Frontier Province, NWFP) has diverse landscape as it stretches from the Himalayas in the north and deserts in the south. Mountains, which occupy major portion of the province's area, are bestowed with rich natural resources like forests, water etc. These areas encompass Swat, Dir, Chitral, Buner, Kohistan, Abbotabad, Mansehra, and Battagram districts. The geographical area of the Province is 10.17 million hectares i.e. 12.8% of the total area of Pakistan (Govt. of Pakistan, 2001). The borders of Khyber-Pakhtunkhwa (KP) province touch or are close to those of Tajikistan and China in the north and Afghanistan to the west. In the south it is only 250 meters above sea level; while in the north, height rises quickly, reaching the high mountains of the Hindu Kush and Karakoram within a few hundred kilometres. On an average, these mountains are 3,000 meters high; Trich Mir in Chitral District is the highest, at 7,708 meters (Govt. of NWFP, 2005).

Agriculture is the mainstay of the province economy. The major crops are wheat, maize, vegetables, sugarcane and a variety of fruits. Farming in the mountains is always difficult. The agriculture in the KP

province in general and in the mountains in particular, is mainly a small farm activity and the small farms are 41% of the total farming area, which is 87% of the total number of farms. Medium farms are 17% and large farms are 42% of the total farm area, which is 5% of the total number of farms. The small farmers mostly conduct subsistence farming, using family labour (Govt. of NWFP, 2005).

Arable land is one of the most important natural assets for the people living in the mountain areas. Although agriculture and livestock are the subsistence oriented livelihood strategies for the people living in the mountain areas of the province (Wattoo *et al.*, 2010), yet mountain farmers have to practice intensive cultivation to feed their households. Rain-fed agriculture is found on 54% of the cultivated area, but yields of different crops on this land are 25-80% lower than for irrigated land, depending on the amount of precipitation (IUCN, 1996). Lack of land use planning is one of many factors causing unsustainable development of the mountain communities. The mountain areas which are cultivated suffer soil and water erosion as well as limited infrastructure and market facilities.

Despite a full-fledged provincial Department of Agricultural Extension, well trained man-power in the province and physical infrastructure, the overall

agricultural productivity in the province particularly in the mountains is very low as compared other provinces of country. In this backdrop, the main objective of this paper is to underline some of the factors hindering the agricultural productivity in the mountainous areas of KP and thereby suggesting policy implication for an effective agricultural extension system in the area.

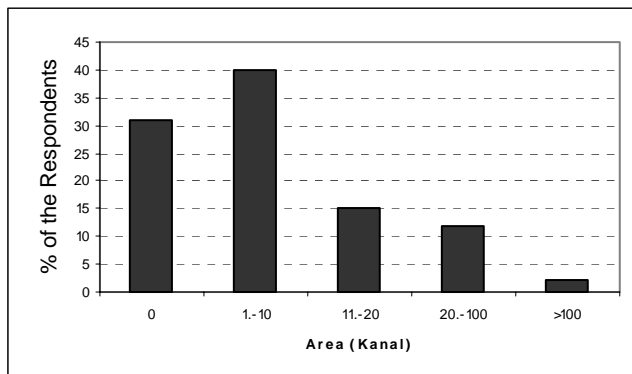
## METHODOLOGY

Combination of qualitative and quantitative methods was used for the purpose of data collection. Key informants as well as focus group interviews and participant observations were included to acquire qualitative data. Quantitative data were collected through structured questionnaire. Two highland districts (Swat and Mansehra) of KP were selected. Four villages from these two districts were selected randomly. From each village, 50 respondents (farmers) were selected at random. Thus in total 400 farmers from 8 villages were selected for the collection of quantitative data. The data were analysed by using Statistical Package for Social Sciences (SPSS).

## RESULTS AND DISCUSSION

This section provides the findings from the empirical research work. This section is sub-divided into various sub-sections. Each sub-section highlights one of the problems hindering the effective agriculture extension work in the area.

**Small land holding:** The respondents were asked to tell the size (area) of their arable land. The data in this regard is presented in the Fig.1.



**Figure1. Area of the arable land**

About 30 percent of the respondents told that they didn't have any cultivable land, while 40% of the respondents informed that they had the arable land with an area ranging from 1-10 kanal (local unit of

area, 8 kanals = one acre). Fifteen percent of the respondents had 20-100 kanals land, while very few households had more than 100 kanals of the land (Fig.1). The perceptions of the respondents regarding the quality of the arable land was measured on 5-point Likert scale (1=very low, 2=low, 3=average, 4=high and 5=very high). According to the respondents the quality of their arable land was average (mean value 3.22). The average distance of the arable land from the houses of the respondents was 0.82 kilometres. The above data clearly demonstrate that the land holding in the region is extremely small and very few farmers possess large pieces of productive land.

**Low production and subsistence farming:** There are two main cropping seasons viz "Rabi" and "Kharif". Wheat is the major "Rabi" crop while maize and rice are the major "Kharif" crops (Table 1). Maize was the main crop in the study villages as 67% of the respondents were cultivating the maize as "Kharif" crop. However wheat was being grown 46.5% of the respondents in the study villages. The average yield per "kanal" was very low for most of the crops and it was very low when compared with the national and provincial average.

The qualitative interviews revealed that the maize, wheat and rice were mainly grown for subsistence purpose rather than for the commercial purpose as major share of these crops were being consumed within the house. Potato was being grown by 18% of the respondents and it was mainly grown for the commercial purpose.

The qualitative data revealed that the agricultural extension services in the mountain areas were extremely poor. Some excerpts from the qualitative interviews are given as under;

An old farmer of a village reported "I am 64 years of age and I have never seen a single person from Agriculture Department in our village". Another farmer of a village in Swat told angrily "they [Agric. Officers etc.] only take care for the big farmers of plain areas, and as our village is remote and inaccessible so they never come to us". A potato grower told "The yield of our potato crop had reduced to half with in the last 2 years due to some unknown disease, we went to the office of the agricultural office after traveling 4 hours but no one was there to guide us. Next week we went again, but the officer was not competent enough to give solution of our problem". In a focus group interview the members of the village development committee demanded that an effective agricultural extension service must be provided in their village so that the growers of persimmon and peach could obtain the higher yield of their crop and earn more profit. The

**Table 1. Crops statistics: seasonality and yield of major crops grown by the respondents**

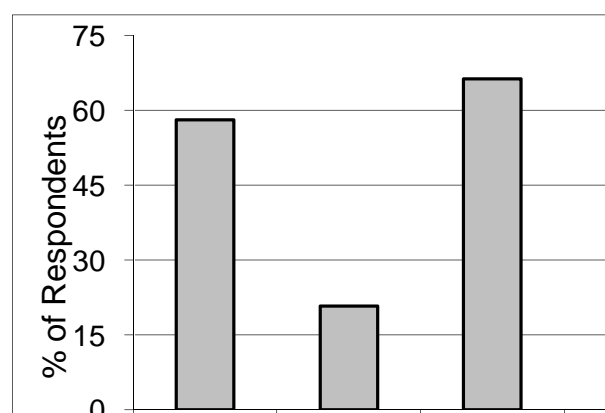
Crops	Percent of Respondents who grow the crops	Months of Cultivation	Months of harvesting	Yield (Kgs/ kanal)
Wheat	46.5	Oct-Nov	April-May	60
Maize	67	April-May	Sept-Oct	62
Potato	18	April-June	July-Sept	630
Barley	4.5	May-June	Sept-Nov	75
Rice	8.5	May-June	Sept-Oct	87

secretary of a village development committee in Swat district told “our land is the most fertile land of the Province, and the fruit our farmers produce are sweetest and delicious and famous all over the country. Our corn makes very soft and delicious breads. But our farmers are poor because they don’t know the latest technologies and cultivation methods. They are illiterate and the commission agent [middle man] earns much more money than the farmers. Government should pay attention to the improvement of the agricultural extension system in the mountain areas”. A social organizer of the forest department told “In the remote mountainous areas, no governmental official except us [the forestry staff] bothers to come”. The above remarks indicate that there is a huge potential of agriculture in the area but inefficient extension services and lack of marketing infrastructure hinders agricultural productivity. The qualitative data also revealed that the crops produced by most of the farmers couldn’t even fulfil the subsistence needs of their household. The local people (of the study villages) were demanding efficient agricultural extension service. Due to the absence of effective agricultural extension system, the local farmers were using their own (traditional) technology of crop and fruit production and were obtaining very low yield. An effective agricultural extension and marketing service can improve the livelihoods of these people because the land of these areas is very suitable to grow fruits (apple, peach, persimmon, walnuts etc.) which can be supplied not only to the lowland areas of country but also to the foreign countries.

**Limited access to bank loans:** There were large number of respondents who received loans for their household and agricultural needs. Those respondents, who received loan, were asked the source of the loan. The data pertaining to their responses are shown in the Fig.2.

Shopkeepers and relatives were the most important sources of loan (cash) as evident in the Fig.2, as about 65% of the respondents of study villages took loan from their local shopkeepers. The qualitative interviews revealed that the respondents used to purchase the

daily food items and grocery etc. from the shopkeepers on credit and made the payment at the beginning of each month. The main uses of the loans from relatives and friends were marriage of children, medical treatment of family members and repair of houses. There were very few (less than 10%) respondents who took loan from banks (Fig.2). The reason for the limited access to loan was explore

**Figure 2. Sources of loan**

During qualitative interviews the respondents told that it is very difficult to get loans for agricultural purposes from the banks. Some of the excerpts from the qualitative data are given as under;

“I have just a small piece of four kanals of arable land, and the Agricultural Bank is not ready to give me the loan” a farmer told. Some key informant interviews with the farmers of a village were taken and most of the farmers demanded that they should be provided with small agricultural loans so that they could purchase fertilizers for the improvement of the yield of their crops and fruits like peach, persimmon, and apples. “I have 4 acres of land where I grow persimmons and peaches but the quality of my land is decreasing day by day and I get lower yield as compared to my fellow farmers. I want to add fertilizers in my land but I cannot afford it because the profit from my crops is not sufficient

enough to meet my household expenditures. If agricultural bank can provide me loan on easy conditions for the purchase of fertilizers and pesticides then I can get better yield from my crop. But I cannot read or write and I am a poor man. Here government facilities such as bank loans are available for powerful and rich but the powerless and poor are ignored".

These excerpts indicate the difficulty faced by the respondents regarding access to bank loans. Small land holdings, poverty and illiteracy were indicated as major causes of the poor access to loans.

**Lack of female extensionists:** Like other rural areas of Pakistan, the women of mountain communities have a lead role in farm activities. Majority of the mountain men are migrating to big cities in search of jobs (Ali *et al.*, 2007), leaving women, children and the elderly in the home and women's burdens have increased substantially. The qualitative data revealed that the women share maximum load of agricultural and livestock tasks, additionally they also collect water, fuel-wood and fodder as well as cook food and care for children. Due to conservative nature of society the females are usually not allowed to meet men other than their family members, but there is hardly any female field staff in the Department of Agriculture (Extension). In some areas, however, the forest department had acquired the services of female social organizers or female forestry extensionists, but these members rarely visited the remote mountainous villages (Shahbaz, 2009). The female literacy in the rural KP is only 21.7% as compared to 59.2% for the males (Govt. of Pakistan, 2005).

## CONCLUSIONS

The mountainous areas of the Khyber-Pakhtunkhwa province need extraordinary attention and special crops production technology is needed that may enable the local farmers to make their livelihood under harsh situation. The results of the study revealed that majority of the respondents of the study villages were farming on small land holdings (less than 10 *kanals*). Wheat was the major "*Rabi*" crop whereas maize and rice were the major "*Kharif*" crops. These crops were mainly grown for subsistence purpose rather than for the commercial ones. Due to the absence of effective agricultural extension system, the local farmers (of the study villages) were using time old traditional technology of crop and fruit production, and were obtaining very low yield. Due to small land holding and

illiteracy, most of the farmers couldn't access agricultural loans offered by the banks. Women play very important role in the subsistence oriented farming but there has not been any effort so far regarding female empowerment and gender mainstreaming in the province. Most of the farmers were not satisfied with the services of provincial Department of Agriculture. Procedure for obtaining bank loans for agriculture purpose may be made simpler and user friendly for illiterate farmers who have very small land holding. Women share equal work with men in the crop and livestock farming. Keeping in view the conservative nature of the area, female extension workers from the local areas may be appointed who can communicate with the rural women.

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