

# **DISKUSSIONSPAPIERE**

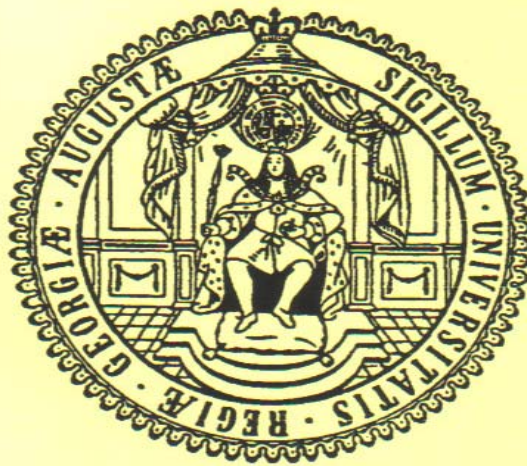
## **DISCUSSION PAPERS**

### **Patterns of Rural Non-Farm Activities and Household Access to Informal Economy in Northwest Pakistan**

**Mohammad Asif Khan**

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## Abstract

### **Patterns of Rural Non-Farm Activities and Household Access to Informal Economy in Northwest Pakistan**

**Mohammad Asif Khan**

This paper draws on empirical research carried out in two rural communities in North-West Pakistan to establish a baseline picture of the patterns of non-farm activities and identify the extent of change in non-agricultural employment as well as the determinants of participation in informal employment sector, which can be translated into policy recommendations. A **quasi-longitudinal** analysis of the socio-economic situation prevailing in 2003-04 was made with empirical research conducted by IRE, Georg-August University Goettingen, Germany in the same region in 1967/68 and 1986/87 in order to reveal the structural adjustment processes in this setting. The results indicate a clear trend on the part of the household in Northwest Pakistan to switch towards non-agricultural activities and this development is caused by the large increase in population (44%) as well as the shrinking of employment opportunities in the farming sector. There was a high degree of gender biasness as revealed by extremely poor female economic participation mainly due to the traditional nature of *Pathan* society.

The study revealed that Non-Agricultural Employment is an important source of cash income for many rural residents, even though the amount of cash involved is very small. Most of these heterogeneous activities were informal and aimed to ensure the survival of household members, not the accumulation of capital. Some of these economic activities were entirely independent while a few directly linked to agriculture. In order to investigate the **factors** responsible for respondents engagement in informal economic sector **probit analysis** was applied. The **vocational training** and **social capital** turn out to be non-significant as majority of the jobs were survival oriented. However, **age** and **experience** of employment were significant and positive while **education** reduces the probability to engage in inform sector by almost 12%. At the household level, majority of the variables like the **household size**, **economically active members** and **income** turn out to be significant indicating high dependency ratio (58.8 in research area) and lack of employment opportunities in the area. Similarly, the negative coefficients on household ownership of **house**, **transport** and **telephone** which turn out to be non-significant suggested, *ceteris paribus*, the respondents' likelihood to engage in formal sectors. The **respondents in Dalazak** have 4.5% more probability to engage in informal employment sector indicating that Kukar was equipped with public infrastructure. With increasing demographic pressure and shrinking land resources, the future of rural employment looks bright in non-agricultural sector.

## **Acknowledgement**

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## ACRONYMS AND ABBREVIATIONS

<b>CBO</b>	Community Building Organization
<b>GDP</b>	Gross Domestic Product
<b>Ha</b>	Hectare
<b>HHH</b>	Head of Household
<b>HH</b>	Household
<b>IDS</b>	Institute of Development Studies, NWFP Agricultural University Peshawar, Pakistan
<b>IFAD</b>	International Fund for Agricultural Development
<b>IFPRI</b>	International Food Policy Research Institute
<b>ILO</b>	International Labour Organization
<b>IMF</b>	International Monetary Fund
<b>IRE</b>	Institute of Rural Development, Georg-August University Goettingen, Germany
<b>NAE</b>	Non-Agricultural Employment
<b>NARE</b>	Non-agricultural Rural Economy
<b>NFE</b>	Non-farm Employment
<b>NGO</b>	Non-Governmental Organization
<b>NWFP</b>	North West Frontier Province
<b>RNAE</b>	Rural Non Agricultural Employment
<b>RNFE</b>	Rural non-farm economy
<b>Rs.</b>	Rupees
<b>SME</b>	Small & Medium Size Enterprises
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TE</b>	Township Enterprises
<b>UN</b>	United Nations

## GLOSSARY

<i>Jerab</i>	0.5 acres
<i>Gur</i>	Lumps of brown sugar
<i>Haj</i>	Pilgrimage to Mecca
<i>High School</i>	9 <sup>th</sup> and 10 <sup>th</sup> School Years
<i>Hujra</i>	Common place for villagers get together in Northwest Pakistan
<i>Katcha house</i>	Mud House
<i>Kharif</i>	Summer cropping (mid April to mid October)
<i>Kor</i>	Pusto word for 'House'
<i>Matric</i>	10 years School Completion
<i>Middle School</i>	6 <sup>th</sup> and 8 <sup>th</sup> School years
<i>Pakka house</i>	Brick house
<i>Primary School</i>	1 <sup>st</sup> to 5 <sup>th</sup> years
<i>Pushto</i>	Dominant language in the Northwest Frontier Province of Pakistan
<i>Rupee</i>	Pakistani currency (1 Euro = 70 rupees at time of investigation)
<i>Purdah</i>	Seclusion and veiling of women
<i>Rabi</i>	Winter cropping (mid October to mid April)
<i>Tanga</i>	Two-wheeled single axis, horse-drawn carriage
<i>Zamindar</i>	Farmer (zamin = land)



# 1. INTRODUCTION

## 1.1. Background

Rural households in the developing world are not just limited to traditional rural activities of farming as they participate in a wide range of non-agricultural activities. Non-farm activities may include manufacturing (i.e., agro-processing) and be accumulative (e.g., setting up a small business) or adaptive (switching from cash crop cultivation to commodity trading in response to drought, coping through non-agricultural wage labour or sale of household assets as an immediate response to a shock, or comprise a survival strategy as a response to a livelihood shock). Such nonfarm incomes can contribute significantly to their total incomes. The non-agricultural rural economy comprise all those activities associated with wage work or self-employment in income generating activities that are not agricultural but located in rural areas (LANJOUW et al., 1999:4).

An essential feature of Non-Agricultural Rural Economy (NARE) is that these are complex and **heterogeneous**<sup>1</sup>, incorporating self-employment, micro and small/medium-sized enterprises (SMEs), traders, and migration. The NARE sector incorporates jobs that require significant access to assets, whether education or credit, and self-employed activities, such as roadside hawking of commodities, which may have low entry barriers (or none at all) and low asset requirements.

The rural areas in developing countries, where these diverse income generating activities are carried out typically present a very dismal picture. Health, educational and other social services are not adequate. Rural infrastructure, including roads, telecommunications, water, and waste management, is in need of upgrading. Ironically, there is inadequate support for businesses in the form of information and mutual organization.

Along side with these dismal conditions, labor force is growing rapidly, but employment opportunities are not keeping pace. As land available for expansion of agriculture becomes increasingly scarce, non-farm employment must expand if deepening rural poverty is to be avoided. A growing number of studies (LANJOUW et al., 1999 and ISLAM, 1997:22) indicate that the non-farm sector has the potential to increase rural employment and improve income distribution.

Expanding opportunities in rural areas outside of agriculture also may help stem the migration of rural dwellers to the cities and slow the spread of urban congestion and pollution. As urban industries are unlikely to absorb the rapidly increasing labor force, hence it is up to the more labor-intensive rural non-farm sector to absorb excess labor and diversify income sources.

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<sup>1</sup> LANJOUW (1999:1) points out that the “One safe generalization which can be made about the non-farm sector is that it is heterogeneous”.

## 1.2. Statement of the Problem

The large majority of the population in Pakistan lives in the rural regions. Their livelihood is mostly found in agriculture. However, employment in the agricultural sector is losing importance in comparison to non-agricultural employment in these areas with consequences for the institutionalized interactions among the people<sup>2</sup>. Majority of these rural non-farm activities are survival based indicating their fragile asset based situation.

The rural labour market is the largest segment of the labour market in Pakistan as it account for 73 percent of total labour force and 70 percent of total employment. Within the rural labour market, the agricultural sector employs more than two thirds of the rural labour force and slightly more than half of the total labour force (CHAUDHRY et al., 1992:351-363).

**Table 1.** *Share of Employment and Output across Sectors in Pakistan*

SECTOR	% SHARE	1982-83	1987-88	1990-91	1993-94	1996-97
Agriculture	Output	29.30	25.70	25.70	24.30	26.36
	Emp.	52.87	51.22	47.49	49.59	44.15
	Output	70.7	74.3	74.3	75.7	73.64
Non agriculture	Emp.	47.13	48.78	52.51	50.41	55.85

Source: Various issues of Labor Force Surveys, Govt. of Pakistan

It is no doubt that agriculture still provides for many households the means of survival; however, there is a **constant exodus to other occupations outside the agricultural sector**<sup>3</sup> (Table 1). Increasingly rural households now seek alternative means of employment and income to maintain their livelihoods. These alternative means include migration of various types (temporary long-term, temporary short-term, seasonal; within the country and in foreign lands), wage and public sector employment and more common petty trade linking rural and urban areas. However these diverse livelihood income generating activities can be broadly divided into **high** and **low labour productivity activities**, the latter serve only as a "last-resort" source of income (LANJOUW et al., 1999). The **SMEs** have a significant role in Pakistan economy as it includes over 90 per cent of business and were responsible for generating more than 80 per cent of total non-farm based employment (DAWN INTERNET EDITION, 2004). However, these enterprises suffer from productivity problems (LANJOUW and SHARIFF, 2002). For instance, a sizeable share of manufacturing sector in developing countries is unregistered; take for instance the ILO (2003) document on Pakistan that states:

<sup>2</sup> For details see MANIG, 1992.

<sup>3</sup> The decrease in the share of agriculture (roughly 9%) in total employment is taken by nonfarm employment.

*"The unregistered sector has a capital labour ratio and productivity, which is lower than that of the registered sector by a factor 7. Consequently, its wage rates are also much lower, and in addition being unregistered is not protected by any social legislation on the workers' right to welfare, security or organization ".*

Poverty characteristics in Pakistan include high levels of income and asset poverty, economic and social vulnerability, gender disparity, and low levels of human capital development. The high population growth and the decreasing capacity of agricultural sector to absorb additional labour results to a rapidly increasing demand for nonfarm employment. Farm owners are now managing their own holdings with increased use of mechanization displacing former tenants. The demand for certain structural changes in infrastructure, education, land tenure and marketing system compel the rural people for adoption of non-farm professions.

Certain governmental policies like withdraw of farm subsidies resulting in hike of the input prices yield in switching of people from farm to other professions. Due to the **prevailing religious conditions** in the rural areas of northwest Pakistan very few women participate in economic activities.

Hence the dwellers rural Pakistan, in order to achieve their desirable livelihood outcomes is not only facing the institutional constraints but also lack the required assets to overcome them. However, little is known about how rural dwellers become engaged in various income generating activities? What strategies they are applying for living, and why? What are their priorities and in which direction are they developing? In addition, we need to know the factors that dictate an individual decision to engage in a particular economic activity. Economic rural structures undergo changes continually and understanding these changes in a given area would enhance the chances for a better-formulated and implemented development policy intervention. These choices for a living merit proper investigation which this paper is trying to achieve based on empirical research conducted in two villages in northwest Pakistan. The analysis of non-farm employment is the main focus of this quasi-longitudinal study we conducted in two villages of Peshawar region, Pakistan. The basis of the study is two research projects conducted in 1967/68 and 1986/87 by Institute of Rural Development, Georg-August University Goettingen Germany in collaboration with **Institute of Development Studies (IDS)**, Agricultural University Peshawar Pakistan.

### 1.3. Objectives of the Study

The **main objective** of this empirical study is to analyze **non-farm employment in Northwest Pakistan**. More precisely the study is based on the following objectives:

- To find out the nature and extent of change in non-agricultural employment in the study area.

- To investigate the factors responsible for participation in informal employment sector in this setting.
- To make a comparative analyses of the structural changes in employment situation in the research villages in northwest Pakistan.
- To draw conclusions and make suitable recommendations based on the findings of the study.

According to the objectives outlined above the study addresses the following **research questions**:

- What are the trends and patterns in rural non-agricultural employment across households?
- What are the factors behind an individual decision to participation in informal economic activities?
- What changes have occurred in the rural informal employment sector in the research area?

The paper is organized as follows. **Chapter 2** provides a brief overview of the key concepts regarding the issues of interest for the research, followed by a conceptual frame work and explanation of various variables for the Probit model. **Chapter 3** deals with overview of frame conditions and methodological aspects of the research. The socio-economic conditions of the research area are presented in **chapter 4**. **Chapter 5** deals with results and discussion; starting with the trends in non-agricultural activities in the study area followed by estimation results of the Probit model to depict the role of individual, household and community level characteristics in influencing respondents decisions to engage in informal employment sector. In addition, the changes in structural adjustment processes in Northwest Pakistan are analysed through a quasi-longitudinal procedure. **Chapter 6** concludes the paper with policy recommendations.

## 2. THEORETICAL AND CONCEPTUAL FRAMEWORK

### 2.1. Rural Employment Structure

The rural economy in developing countries is not just confined to the agricultural sector, but embraces all the people, economic activities, infrastructure and natural resources in rural areas (CSAKI et al., 2000:47). In this sense, rural livelihoods are not limited just to income derived solely from economic activities but it is a way of looking on the economic activities of the rural inhabitants undertake in their totalities. SCOONES (1998:9) considered **agricultural intensification/extensification**<sup>4</sup>, **livelihood diversification** and **migration** as the three core livelihood strategies to distinguish different livelihood outcomes. Livelihood becomes diversified when rural households construct an increasingly diverse portfolio of activities and assets in order to survive and improve their living standards (ELLIS, 2000:15). This diversification is in most cases in developing countries survival oriented than accumulation. In addition, multiple employment<sup>5</sup> or pluri-activity is also a potential livelihood strategy on part of the rural people when the farm does not provide an adequate amount of income to the peasant families or when there are opportunities in non-farm sector (DHARMAWAN, 1994; UPTON, 1996:81-84).

Although a growing number of people in the developing world are engaged in non-farm sector (MANIG, 1992; LANJOUW et al., 1999), however, these are essentially complex and diverse, ranging from those requiring significant access to assets, to self-employed activities such as the roadside “hawking” of commodities which has low, or no barriers to entry and low asset requirements (DAVIS and PEARCE, 2001). Rural households in developing countries may have limited control of and access to resources; however, time is an important resource over which they still maintain control and use it in their strategies for survival and improvement of their socio-economic situation (MEINDERTSMA, 1997:239). CHAYANOV (1966:317) through his model of the peasant economy centered upon **time allocation approach** and later BECKER, (1976:314) using **New Household Economics** model highlighted household utility maximization in terms of the amount of time the family was willing to allocate to different economic activities to meet household needs. However, the amount of time spent at work, according to CHAYANOV has never been greater (43%) than the time spent at leisure (57%).

### 2.2. Factors Responsible for Participation in Informal Economic Activities

Review of literature reveals that rural households’ decision to engage in various types of informal economic activities takes place under the influence of several individual,

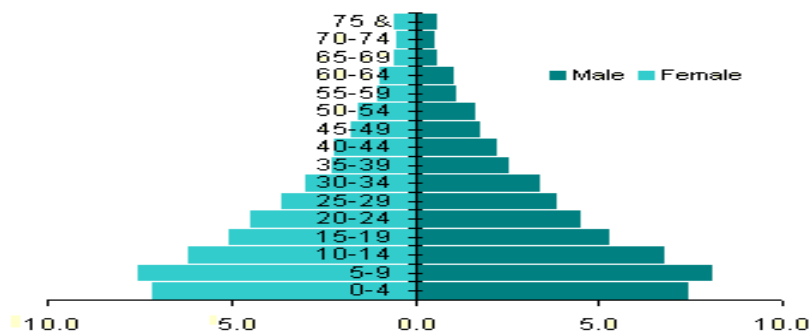
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<sup>4</sup> The agricultural intensification is labour-led while extensification is capital-led.

<sup>5</sup> Multiple employment in farm households according to KUHNEN (1985) on the basis of family structure, farm structure and economic structure, can take five different forms (for detail see KUHNEN, 1985).

household and community level factors. Household composition (HH size, dependency ratio etc.) plays an important role in engagement in different non-farm economic activities (LANJOUW et al., 1999). It is the population pressure, resulting into relatively higher dependency (fig. 1), which is forcing increasing number of Pakistanis (6<sup>th</sup> most populous country in the world) to engage in diverse economic activities. Hence, the trends in population growth and urbanization in Pakistan require an increasing labour absorption not only in agriculture but also in the non-farm sector (HUSSAIN, 1989:332).

**Figure 1. Population Pyramid of Pakistan, 1998**



Source: Based on CENSUS REPORT OF PAKISTAN, 1998

The importance of **education** is revealed by the fact that only those with higher educational levels gain access to the better-paying employments while those with low levels of schooling tend to have access only to non-farm refuge jobs (ISLAM, 1997:22). LANJOUW and SHARIFF, 2002 also confirmed from village studies in India that access to regular non-farm jobs is positively correlated with education as well as landholdings. However, the education problem lies within priorities as Pakistan, like many other developing countries, spends too little on social sector programmes.

**Local government institutions** can also promote the rural economy provided they have decision-making powers and adequate financial resources; as was observed in some East Asian countries (ISLAM, 1997:30). REARDON et al., (2000:266), based on a review of household survey evidence from Africa, Asia and Latin America, highlighted the poor people's inability to overcome important entry barriers to many economic activities with casual workers<sup>6</sup> constituting one of the poorest sections of the labour. This view was confirmed by (NOMAAN, 2000:33) that real wages of casual workers in Pakistan improved up to the mid 1980s, which during the 1990s declined.

**Social Capital** is an important factor in situation where access to the economic opportunities depends on participating in a variety of social institutions and social relations. Similarly, land ownership<sup>7</sup> not only wide economic options but in addition, it

<sup>6</sup> LANJOUW and SHARIFF, 2002 also indicated that in rural India, much of the employment growth is of a casual nature rather than permanent.

<sup>7</sup> In Pakistan, about 96 per cent of the landowners have holdings of less than 10 ha, but they own 64 per cent of the area. (KHAN, 2000:4).

is an important requirement for access to credit from the formal banking system (KHAN, 2000:2).

KUMAR (1996:809) through a comparison of village surveys in 1993 and 1946 in Gujrat India documented major institutional changes such as: a reduction in the proportion of agricultural workers and increase in the non-farm employment; increasing feminization of agricultural labour; replacement of tenant and permanent labour by wage labour; within wage labour the growth of temporary and casual labour; and, inflow of migrant labour. A similar approach was used by MANIG (1992:85) for comparison of surveys conducted in 1986/87 and 1967/68 revealing the major institutional<sup>8</sup> changes in rural northwest Pakistan. Pure farming households lost importance while at the same time non-farm sector emerged as the main employment provider. Nearly half of the **1800 households in the research villages** derived their income exclusively from nonfarm sources while around 37 % of the households were relying on a combination of agricultural and nonfarm sources. Interestingly the share of those with own enterprises increased from 14% to 17%.

The present research is a continuation of the above mentioned projects and will help us to shed light on the dynamics and diversity of rural life in northwest Pakistan exemplified through livelihood income generating strategies. We are aiming to investigate the socio-economic characteristics of their economic life and will try to solve research questions.

### 2.3. Conceptual Framework

The purpose of the research is to establish a baseline picture of the kinds of non-farm activities in which people in these two rural communities involved and indicate the main factors which motivate an individual involvement in informal sector. The rationale behind the study is that an increased focus on RNAE leads to a more holistic view on rural development, and reflects the reality of growing economic diversification amongst rural households.

Figure 2 represents the overall conceptual frame work for the present study. Households in a developing country like Pakistan can engage either in farming, non-agricultural activities or a mix of both. Non-agricultural activities are **heterogeneous**; however, one can categorize non-agricultural activities in five different basic categories with each having distinct subcategories. These various categories are well connected which reveals the complexity of non-agricultural activities. RNAE can be categorized on sector basis, which can be subcategorized into **public, private, businesses, remittances and others**. We can look at these employment sectors through a number of angles whether these are **formal** (covered economy) or **informal** (uncovered economy), also

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<sup>8</sup> Institutions, **rules of the game** (North, 1990 mentioned in DHARMAWAN, 1994), are *those stable regulatory and organizational principles and rules which govern interaction processes between the people themselves and, in this relation, to the environment and which are recognized and sanctioned by the societies in which they are found* (MANIG, 1992).

whether those engaged in these sectors work on **permanent, contract** or **casual** basis (e.g. daily wagers). Similarly there is a **spatial** dimension of these complex activities, as some work in **local** economy while others in **other regions** of the same country and also quite a few have to **travel abroad** for employment. Again these may be **low** or **highly paid** revealing the productivity face of the non-agricultural activities.

The **first research question** entails a descriptive as well as an explorative analysis portraying across the two villages the diversification of income generating activities. Hence we can hypothesize that the households are engaged in various income generating activities and there is a significant difference in the pattern of these activities across the two villages with majority of the households in the research area engaged in survival strategies for their livelihood. This enquiry will descriptively highlight the diverse economic activities performed by the households, for instance, mixed income earners, non-farm employment, remittances (foreign, domestic), public sector employment and self-employment. The analysis will help us in labelling the livelihood income generating strategies adopted by the members of the household in the two villages as survival or accumulation. If majority of the household members are engaged in low paid informal economy then the strategy is definitely survival.

The **second question** will highlight not only the occupational activities of the respondents but also the factors influencing household head decision<sup>9</sup> to engage in these diverse occupations. Based on this question we hypothesize that household decision to engage in informal income generating activities is influenced by individual and household level variables. The previous research projects in the proposed villages in Northwest Pakistan differentiated more than 200 jobs (MANIG, 1992:57) that can be categorized into formal and informal economic activities. As outlined by Fig. 2, there are a number of factors which are responsible for the individual decision to engage in informal activities. **Demographic** related issues like household size and age are among the most important in this regard. Human capital like **education** and skill can improve individual chances in engagement in better paid jobs. A household's **income** and asset's situation (especially those in informal sector) can be a major push factor in forcing individuals to join productive formal sector. Hard as well as soft **infrastructure** is another decisive factor for the existence of particular types of economic activities in a locality. In order to measure and quantify a multidimensional term like **Social Capital**, we make use of proxy indicator like sources of job to capture its effect.

These above mentioned regressors in fact reflect the heterogeneity of incentives and constraints facing household occupational decisions. The expected effect of some of these variables merit comments. We expect individual characteristics (**Age, education, experience, skills**) to strongly influence activity choices (although decision making may not be exclusively individual in this part of the world!). Due to prevailing cultural-

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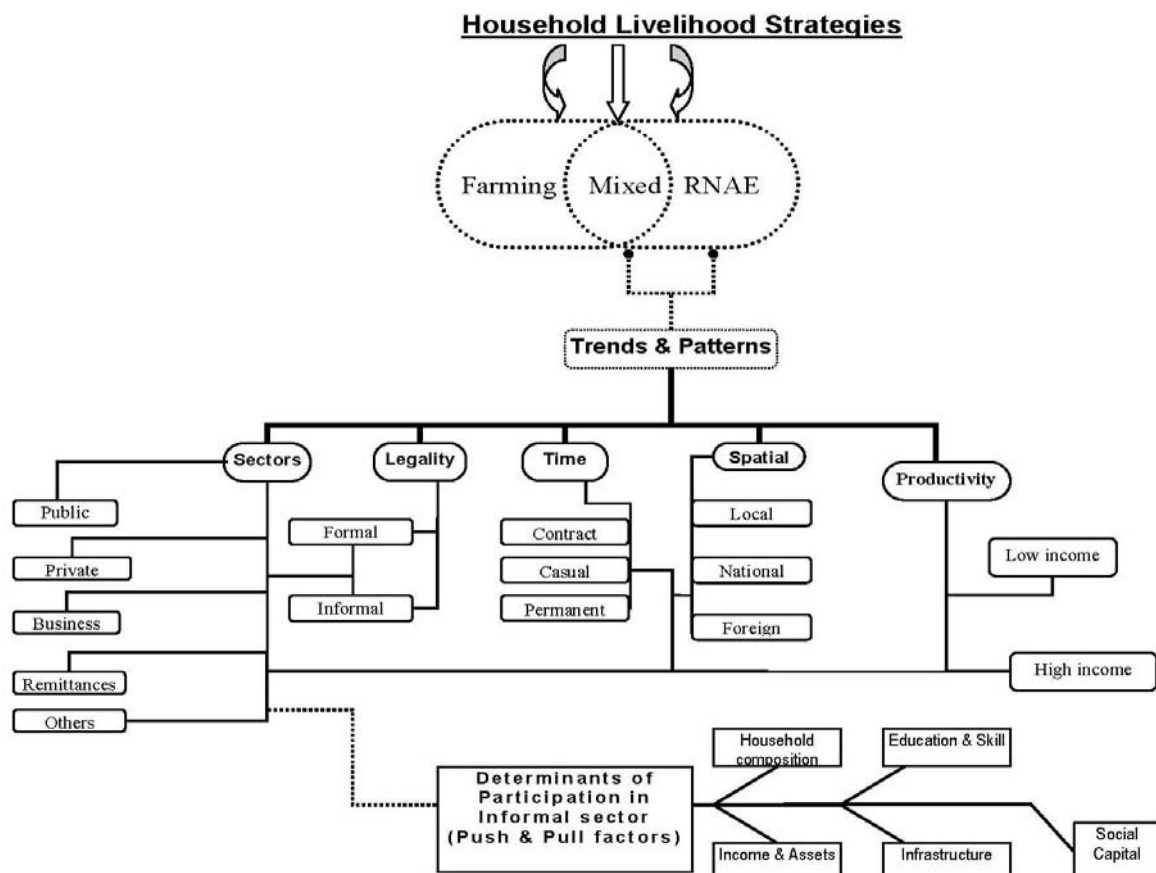
<sup>9</sup> SCHUTZ, 1964 as mentioned in TOULMIN et al., 2000:10 demonstrated that rural people in developing world considered as traditional, illiterate and steeped in irrational practice are in fact conscious and reasoning decision makers, aiming to achieve certain goals in face of a set of constraints.



religious trends<sup>10</sup>, we expect engagement in various non-farm occupations to be clearly a male activity therefore gender was not included as regressor in the analysis. We also expect the youngest to engage in informal non-farm sector due to its demand of hardwork. The role of **household size** is vague as on one hand it may supply more economically active adults but what be the case when there is high dependency ratio? We also expect engagement in informal sector to be influence by number of **economically active members** in the household. A **high wage rate** in formal sector makes the informal sector unattractive. Higher social capital like social relations in the rural setup may benefit the households in using their contacts for jobs in more productive sectors. We also included ownership of assets like telephone, concrete house and transport to capture their effect in individual decision to engage in formal or informal employment sector.

Finally, the study of structural changes (somewhat institutional) in the employment pattern (**Question 3**) demands comparative analysis of the present period with situation prevailing in 1986/87 and 1967/68 in the two rural areas in northwest Pakistan. Based on this question we hypothesize that there have been major structural changes in the employment structure in the two research villages during the last three decades with increasing proportion of households in non-farm employment.

**Figure 2.** Conceptual Framework of Rural Non-Agricultural Employment



Source: Own Presentation

<sup>10</sup> An excellent description of Pathan society is given in ALBRECHT, 1976 and MANIG, 1992.

### 3. RESEARCH METHODOLOGY

#### Box 1. Profile of Peshawar City

In physical terms, Northwest Frontier Province (NWFP) is the smallest of the four provinces of Pakistan (fig. 3), occupying less than a tenth of Pakistan's total area. Peshawar is the provincial capital of the NWFP and is also the largest city in the Province. The geographical area of the district is 1257 sq. km, which corresponds to nearly 1.69 percent of the total area of the NWFP. The total population of the district is 2 millions while the literacy rate is 55.97% for males and 25.85% for females (CENSUS OF PAKISTAN, 1998). Peshawar enjoys tremendous historical, military, economic and political importance. The Afghan border is approximately 40 Km to the West. Pashto is the predominant language followed by Hindko and the national language Urdu. Once known as the city of flowers, **Peshawar** infrastructure has been overwhelmed by population explosion, unplanned growth, low investments and the influx of Afghan refugees who now equal nearly 18% of the local population (DISTRICT CENSUS REPORT OF PAKISTAN, 2000).

#### 3.1. Research Site

The study was conducted in two villages, **Kukar**<sup>11</sup> and **Dalazak**<sup>12</sup> in the vicinity of Peshawar, Pakistan (see appendix III for pictures of these villages). The location of the study area is shown in figure 4. Kukar lies 5 kms North while Dalazak is located 8 kms East of Peshawar. Kukar village has an area of 846 acres while Dalazak is 579 acres (DISTRICT CENSUS REPORT OF PAKISTAN, 2000). In recent years Dalazak has got important due to the construction of the Peshawar Ring road.

These villages were selected for the present study<sup>13</sup> on the basis of the previous empirical studies that were carried out in 1967/68 and 1987/88 by the Institute of Rural Development, Georg-August University Göttingen, Germany in collaboration with Institute of Development Studies, Agricultural University Peshawar, Pakistan. These studies revealed that the majority of the people in these villages were engaged in non-agricultural activities. Thus, a study of these villages in Northwest Pakistan enabled us to focus on the issues considered important for the purpose of our research objectives.

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<sup>11</sup> In 1986/87 survey Kukar was given the factious name '**Hinkobela**' as majority of the population was Hindko speaking, a region language in NWFP, Pakistan. However, in present survey the actual names are used for both villages. Kukar can be termed as "Closed Village" as it is well connected with the Provincial Capital Peshawar through Peshawar-Charsadda Highway and offering the possibility of easy daily commuting.

<sup>12</sup> Dalazak or **Kamibela** (name used in the previous survey due to the predominance of informal economic activities) has a poor geographical location where it was hard to commute daily to Peshawar and can be termed as "Remote village".

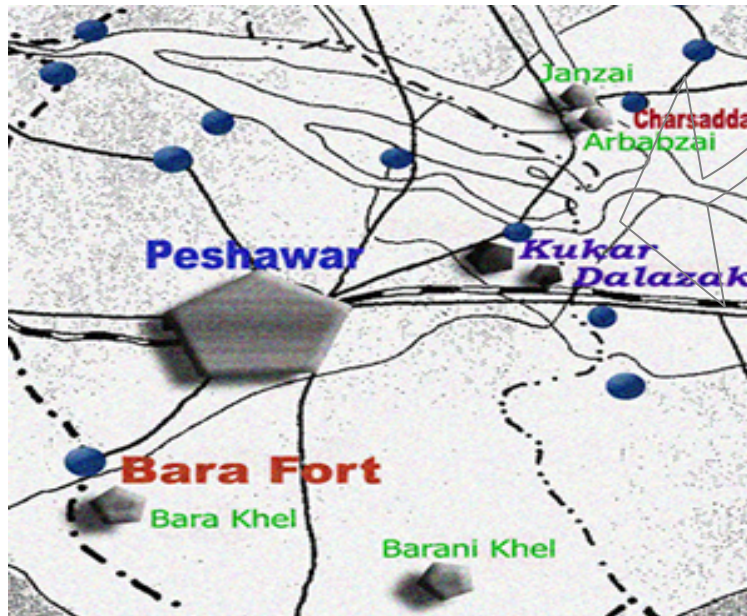
<sup>13</sup> For more detailed explanation, see WINFRIED MANIG, *Stability and Changes in Rural Institutions in North Pakistan*, 1991.

Figure 3. Map of Pakistan



Source: Encyclopædia Britannica, 2000

Figure 4. Map of Research Area



Source: MANIG, 1992

### 3.2. Sample Size

As the use of probabilistic method to select a sample requires a sample frame, hence for this purpose the lists of the households were obtained from the local **Nazim office** (Union Council) in these villages and used as sample frame. This frame was not out of date as it was used in the recent Union election (Nazim) in the area. This list was quite accurate as it was compiled for a popular purpose as every one had an interest to register for voting list.

Mainly due to **financial** and **time constraints** it was considered necessary to limit the size of the sample. In 1987, Kukar had total population and households of 3,082 and 372 respectively. Similarly, Dalazak had a population of 2,389 with total households of 296. However, since 1987 the demographic situation of these two villages has greatly changed. The population of Kukar<sup>14</sup> reached 5,941 with a total of 728 households and that of Dalazak<sup>15</sup> 3,762 having 452 households (see table 2).

Armed with a suitable sample frame (local voting list) of the study and knowledge of the desired sample size, the next step was to select the sample in a random or probabilistic fashion. A relatively straight forward method of selection i.e. **Systematic Sampling** was used, where draws were made at fixed intervals through the voting list starting from a random unit<sup>16</sup>. As stated above due to financial and time constraints a representative sample of 302 (25.6% of all households) households<sup>17</sup> in these two villages was randomly selected for the *Basic Survey*. The share of Kukar and Dalazak in the sample was 182 and 120 households respectively.

Once the **Basic Survey** fulfilled its purpose of identify those households engaged in non-agricultural employment, it was followed by a **Special Survey** on non-agricultural employment. Now Basic survey became a sampling frame for the *Special Survey*. As a first step the households in the *Basic Survey* in both villages were divided into two groups or strata, namely farming households and those involved in non-agricultural employment. As the objective of the study was to analyse the non-agricultural employment hence we decided to select 60 non-agricultural households (33% of total NAE households) from the *Basic Survey* for both villages. **Systematic Random**

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<sup>14</sup> 3,118 male and 2,823 female

<sup>15</sup> 1,976 male and 1,786 female

<sup>16</sup> More specifically, our purpose was to extract a sample of 302 households from the list of **1180 households** in both villages. We randomly selected a household number between 1 and 4 (1180 divided by 302) and, starting from that unit, selected every 4<sup>th</sup> household in both villages. Hence the sampling fraction was around 4% for both villages.

<sup>17</sup> The unit used for sampling is the **Household** and the following criteria was used to determine it:

- Combined kitchen
- Living together
- Contribution to the household budget

According to these criteria, not only those living and eating together, whether relatives or not, are members of the household, but also those, who, although not residing within household, are continuously in contact, both physically and financially. The Pashto word '**Kur**' is used for household.

**Sampling** (SRS) was used for the *Special Survey* with each village<sup>18</sup> having equal share in the survey.

### 3.3. Research Instruments

The study is based on ex-post facto research design relying on cross-sectional procedure for data collection to investigate the research. However, in order to investigate the structural changes in employment situation, the study attempted to relate the employment situation in the research area in 1967 & 1987 to the present period<sup>19</sup>. This study used a combination of quantitative and qualitative research methods because they complement each other.

As previously noted, our fieldwork aimed to characterise and analyse non-farm elements of rural livelihoods. This was to be achieved through respondents (head of the household) interviews and case studies (**appendix II**). Together, these highlighted specific household and community level, demographic, gender, physical, financial and social capital factors which underlie both the adoption of and access to employment as well as income diversification opportunities in the rural non-farm sector. The empirical surveys administered in these villages were divided into a *Basic* and *Special Survey*.

### 3.4. Basic Survey

The *Basic Survey* was carried out to provide us not only the knowledge of the socio-economic situation of the rural households but also other basic information necessary to draw the sample for the special survey. This standardized survey has stood the test in case of numerous studies already conducted<sup>20</sup>. The Basic Survey not only presented a comprehensive picture of the employment structure in the two villages, it also revealed their other important socio-economic characteristics. More specifically the Basic Survey<sup>21</sup> covered the main social, economic as well as structural aspects of the surveyed households.

The **Basic Survey** was a quick questionnaire-based (2 pages) interview divided into various sections and provided important information about the household's individuals data regarding their age, sex, marital status, education, employment and place of employment. It also brought to surface farm related data, like land ownership, rent arrangement, tenure, crop sowed, area self cultivated, and use of farm machinery, etc.

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<sup>18</sup> In Kukar 22% of the total (136) non-agricultural head of the households were interviewed while 63% of the total (48) NAE were interviewed in Dalazak.

<sup>19</sup> Similar approach was applied in Kerala, India to investigate non-farm employment by EAPEN, 2001:77 to compensate for the missing data. Similarly, MANIG, 1992:21 also restricted himself to a comparison of the 1986/87 survey data with the published interpretation of the previous findings.

<sup>20</sup> An almost similar Basic Survey was used in 1967/68 and 1986/87 empirical research by Institute of Rural Development, Georg-August University Goettingen Germany.

<sup>21</sup> The section on Non-Agricultural employment was added to differentiate between farm households and those involved in **Non-Agricultural Employment**.

In addition it also collected information over the marketing of agricultural products as well as livestock ownership. The section on income, credit and capital formation revealed the actual financial situation in the surveyed villages. Similarly changes in the rural non-agricultural employment were analysed by comparing the present situation with the empirical studies conducted in 1967/68 and 1987/88 by the Institute of Rural Development, Georg-August University Goettingen Germany. This procedure enabled us to make a **quasi-longitudinal** analysis for changes in the informal employment in this setting. The last section of the survey was the most important as it enabled us to identify those households involved in non-agricultural activities and hence provided the foundation for the Special Survey.

### 3.5. Special Survey

Once the *Basic Survey* was completed, a preliminary analysis of certain variables was made to provide an overview of the socio-economic situation of the surveyed villages and hence made us able to draw the sample for the *Special Survey*. The households engaged in non-agricultural employment were interviewed intensively, in descriptive as well as explorative terms, through the *Special Survey*. This survey was purposely designed in such a way to reveal the objectives of the present study. The investigation of trends and patterns observed in non-farm sector were revealed by the initial sections of the survey. In Special Survey, the classification of non-farm employment was made along the following lines:

- Sector and activity of employment;
- Self-employment versus working for salaries or wages<sup>22</sup>;
- Degree and timing of employment: full-time versus part-time, year-round versus seasonal, primary versus secondary employment; and,
- Location: local versus distant

Determinants of individual participation in informal employment were identified by questions on education, skill, training, household size, income, job sources, work experience, asset ownership, infrastructure, mean of communications, social capital, age and working adults in the household.

The study used questionnaires that consisted of open-ended and close-ended questions, which asked from the respondents in a friendly manner. The survey process begun in April and continue up to August 2003. The respondents (head of the households) were interviewed randomly in their local language (**Pashto**). They were either contacted at their houses or at village commons, i.e. hujra, mosque etc. In case of absence of the head of the household, another adult member of the similar household was interviewed.

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<sup>22</sup> There is always a need for a clear distinction as those tasks, which although nominally be self-employed, respond so closely to the instructions of the customer that the job comes close to being employed - for instance taxi-driving or tailoring (REARDON et al., 2000 refer to these cases as 'agency contracts').

However, we had no incidents of refusal to be interviewed mainly due to the **Pushtoon culture** of respect for guests. Answers given were found to be earnest and open and discussions took place within a very friendly atmosphere.

### 3.6. Analytical Instruments

Due to its descriptive nature, the crosstab and frequency distribution were used for the **first question** to indicate the employment trends in the research area and measure any disparity among them.

To determine the factors behind respondents decisions to engage in informal employment a **probit model**<sup>23</sup> is estimated in which the dependent variable equals 1 if head of the household is engaged in informal economic activities (non-regulated), and 0 otherwise. This **dichotomous** dependent variable is condition upon several individual (age, education, skill and experience), household (household size, working members, social relation, income, ownership of house, telephone and transport) and community (dummy for village) level variables. The Probit model that emerges from the normal cumulative distribution function is estimated using maximum likelihood method.

The probit model is defined as

$$\Pr(y=1|x) = \Phi(\mathbf{x}\mathbf{b}) \quad (1)$$

Where  $\Phi$  is the standard cumulative normal probability distribution and  $\mathbf{x}\mathbf{b}$  is the probit score or index.

Suppose  $y^*$ , the ability to participate in informal employment is unobservable and it depends on a set of observed factors  $X_i$ . That is

$$y_i^* = \beta X_i + \varepsilon_i \quad (2)$$

Where  $\beta$  is a row vector of parameters, and  $X_i$  is the column vector of the variables that affect  $y^*$  and  $\varepsilon_i$  is normally distributed with 0 mean. The observable binary variable is related to  $y^*$  in the following sense;

$$Y = 1 \text{ if } y^* > 0 \\ = 0 \text{ otherwise}$$

Given the normality assumption, the probability that  $y^*$  is less than or equal to  $Y$  can be computed from the standardized normal cumulative distribution function as:

$$P_i = \Pr(Y=1) = (y^* \leq Y) = F(Y_i) = \int_{-\infty}^{\beta X_i} f(z) dz \quad (3)$$

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<sup>23</sup> We estimated the normal probability (Probit) model using maximum likelihood method. For details GREENE, 2003; GUJRATI, 1995

Where  $f(z)$  represents density function,  $z$  is normally distributed with 0 mean and unit variance and  $P_i$  is the probability that a household head will participate in informal economic activities.

Finally for **question 3**, descriptive analysis will be used for comparing the present employment structure with the previous empirical surveys in 1967/68 and 1986/87 in research area. The Basic Survey will provide the necessary data for this longitudinal analysis, which is based on the same questionnaire as used in the previous surveys. The study also portrayed life histories of selected households in the area by using case studies (appendix II).

### 3.7. The Data Analysis

The present research in general used a combination of *descriptive* as well as *econometrics analysis* to examine the non-farm employment structure in the study area in Northwest Pakistan. **SPSS version 12** was used for descriptive analysis while **Stata version 8** was employed for probit analysis due to its robustness and computational ease. In order to describe the **structural changes** in non-agricultural employment a comparative analysis of the present study was performed with the previous empirical studies conducted in 1967/68 and 1986/87 in the same area by IRE, Georg-August University Goettingen Germany. Hence, the study applied a dual research designs; cross-sectional as well as quasi-longitudinal to analyse the research questions.



## 4. SOCIO-ECONOMIC PROFILE OF THE STUDY AREA

### 4.1. Socio-economic Structure in the Surveyed Areas

This study was undertaken in two villages Kukar and Dalazak in the vicinity of Peshawar, provincial capital of NWFP Pakistan. The total population of these villages is nearly ten thousands distributed into **1,180 households** with an average member of eight people (table 2). In terms of education, the conditions are poor since the majority of the population (especially in Kukar) is illiterate.

**Table 2.** *Demography and Educational Status in the Research Area, 2003-04*

Villages	Inhabitants (number)	Households (number)	HH Size (average)	Education (%)
Kukar	5,941	728	8.2	25.7
Dalazak	3,762	452	8.3	36.6
Total	9,703	1,180	8.3	31.2

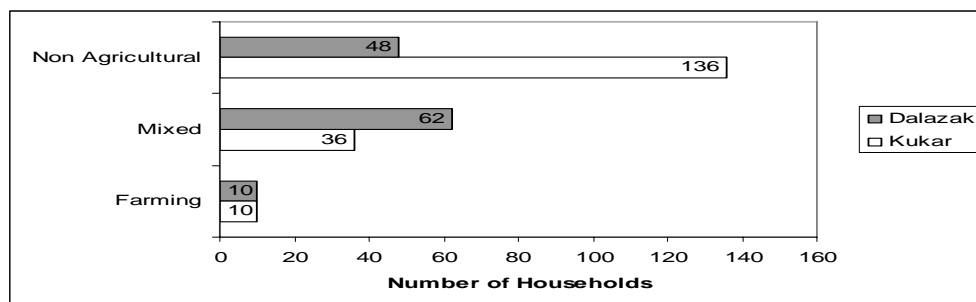
Source: DISTRICT CENSUS REPORT PESHAWAR PAKISTAN, 2000

### 4.2. Livelihoods and Occupational Diversity in the Study Area

The *Basic Survey* brought into light a comprehensive picture of the prevailing livelihood structure in the surveyed villages in northwest Pakistan. The analysis of the *Basic Survey* revealed three types of households in the study area, full-time farm household (N = 20), households engaged in farming as well as non-agricultural activities (N = 98) and non-farm household (N = 184).

Figure 5 indicates to what extent villagers depend on the rural non-agricultural sector for their livelihoods. In both villages, the extent of RNFE was estimated at 40% - 75%. Besides these a vast majority of rural households were involved in multiple employment in order to **spread risk** and **utilize available resources** (both human and material) as much as possible.

**Figure 5.** *Distribution of Household on Occupational Basis in the Study Area*



Source: Own Research, 2003

The geographical position of these two villages also determines the degree of farming households and the potential range of rural non-farm activities. In Kukar, some non-farm activities (grocery shops, barber shops etc.) benefited from passing traffic on the Peshawar-Charsadda road. Most of the grocery shops were open all the day long. Again due to road communication the village people could access the urban markets (Peshawar) to get raw materials and accessories.

**Table 3.** *Comparison of Occupational Households in Research Area, 2003-04*

Parameters	Farming Hh (N= 20)			Mixed Hh (N= 98)			Non Farm Hh (N= 184)		
	Mean	Range	Std. Dev	Mean	Range	Std. Dev	Mean	Range	Std. Dev
Age	48	29-70	10.8	50	28-85	12.6	44	17-75	12.5
HH size	7.5	3-10	1.9	9.7	2-34	6.2	7.5	2-22	3.6
Income (thousand Rs. <sup>24</sup> )	73	18-240	63922	127	7-468	92796	64	9-612	64972

Source: Survey Results, 2003

The low income of the mostly illiterate non-farming household as depicted by table 3 is due to the predominance of the informal wage earners. The existence of this ‘uncovered economy’ for these poor households is a kind of refuge employment. The poorest rural households depend to a higher degree on non-agricultural income, but the level of this type of income in absolute terms is very low (table 3). Nevertheless, this income, however small, is of vital importance to these households because it is the major means of buying all kinds of necessary items, including food. It has been seen that household heads engaged in non-agricultural are relatively young. By contrast, households with high income also tend to have higher levels of non-agricultural income. What is occurring is, while wealthier households have various types of assets (working capital, machinery and vehicles, labour skills and education, contacts, relations, etc.) that also afford them access to non-agricultural jobs that are more profitable and productive. Mixed income households due to high household size (9.7) and land scarcity<sup>25</sup> have been forced to seek income outside agriculture as a survival strategy. The farm as well as non-farm and sectors are interlinked in the sense that proceedings from non-farm activities are likely to be injected into agriculture in the form of hired labour, the use of tractors or ox-ploughs and the purchase of agricultural inputs. The better economic position of **Mixed Income** households points to three main facts:

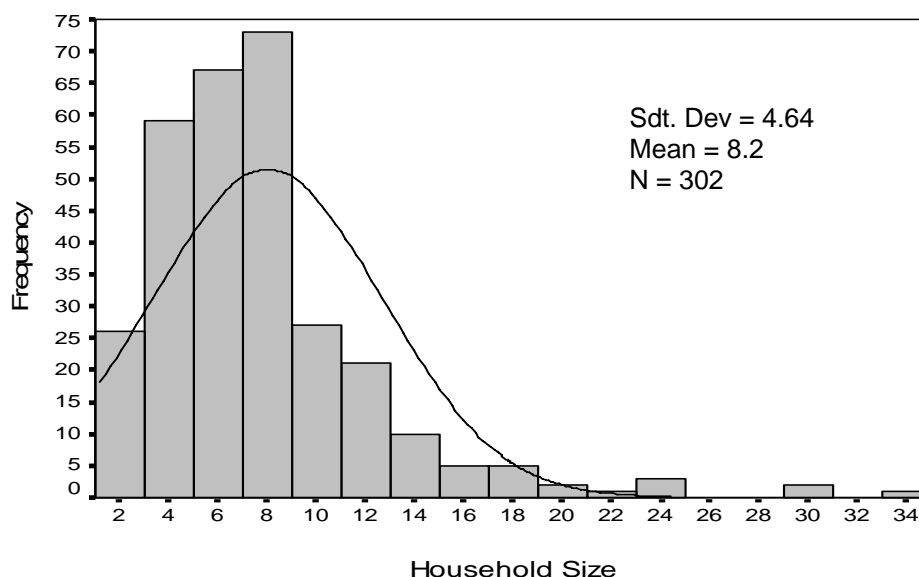
- a. They have developed good strategies to manage farming and non-agricultural activities simultaneously due to their better educational status (63%),

<sup>24</sup> 1 Euro = Pakistani Rs. 70 at time of investigation, 2003

<sup>25</sup> The average for all of the farms with respect to farm area was 4 acres/holding in the research area (for details see section on changes in farm structure).

- b. They have more labor participation compared to other categories of households<sup>26</sup>.
- c. Income from non-farm activities has been important not only for the land-less but also for small-scale farmers.

**Figure 6. Household Size in the Research Area, 2003-04**



Source: Survey Results, 2003

We now turn to examining the major types of non-agricultural activities carried out by respondents in the study sites. Based on the Basic Survey in the two rural villages, one can distinguish several types of non-farm activities<sup>27</sup> that rural households were engaged in:

- **Work in state institutions or local government administration** – so-called ‘state-budget work’ (25%)
- **Trade/commerce** (22%)
- **Occasional, contractual labour** (21%)
- **Craftsmanship and applied-arts** (11%)
- **Contractual work** for a private employer (9%)
- **Services** (8%)
- **Transport services** (3%)
- **Industrial enterprises** (1%)

According to the *Basic Survey*, about a quarter of the non-agricultural labour force belonged to the public sector where the most common type of professions were

<sup>26</sup> For instance, out of the total 23 economically active female 10 belongs to these households.

<sup>27</sup> A total of 251 heads of the households were engaged in these non-farm activities while the remaining thirty one individuals were retired/jobless.

teachers, medical services, administration officers, clerks and peons etc. The rest were employed in the organised as well as unorganised private sector. Within trade and commerce, there were grocery shops, small kiosks and small-scale milk/yogurt vendors<sup>28</sup>. Daily wage labourers (21%) were also a major sector of informal economy, which was a kind of refuge employment for the households in the absence of education and skills. The craftsmen were mostly found in Dalazak, where a number of skilful **bus body makers** were working, similarly there were some dress-makers and house constructors in Kukar (see annexure II for case studies).

Contractual workers (vendor in a shop, driver, baker, worker etc.) were paid in majority cases on monthly basis. The share of services (hair-dresser, mechanics etc.) and transport sector was low (11%) in the local economy. The transport sector in most cases was limited to the ownership of **Suzuki vans, Rickshaws** and **Tanga** (see glossary). The presence of industrial enterprises (bakeries, furniture production, traditional flour mills etc.) was negligible. In all of the cases, these activities were based on local resources and oriented towards the local consumption market. Different types of non-farm activities have varying degrees of “**prestige**” in the perception of local village society. State-budget works are considered to be the most honourable while occasional workers were on the other extreme.

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<sup>28</sup> These were mostly concentrated in Kukar due to the presence of a number of private livestock farms.

## 5. RESULTS AND DISCUSSION

The research findings based on the Special Survey carried out in two rural areas of North West Pakistan concerned with improved understanding and appropriate recommendations for the rural non-agricultural economy. Interest in the non-agricultural economy originates from increasing realisation of its important role in rural livelihoods, and its potential contribution to poverty alleviation. The study starts with a mapping of employment patterns across different sectors in the economy.

### 5.1 . Trends in Non-Agricultural Employment in the Research Area

Table 4 presents the non-agricultural employment patterns for the study area. For analytical purposes, the various non-agricultural activities were grouped into four broad categories mostly concentrated in public and private sectors. Majority of the non-agricultural labour force (65%) belonged to the informal sector, the rest was employed in the organised sector i.e., public and private combined. The share of public sector<sup>29</sup>, which over the years, became the most secured, protected and better paid form of employment, was 22%. Looking at sector wise distribution of government employment, the Provincial government provided 17% of the jobs while Central government accounted only for 5% jobs in the area. Hence, it reveals the fact that the central government contributes less to the village economy as locals get access to only a fraction of these jobs. The poor distribution in formal private sector suggests significant entry barriers and market segmentation.

**Table 4.** *Cross tabulation of Status and Sector of Employment of HH heads*

Employment Status		Sector of Employment				Pensioners	Total Percent
		Public		Private			
		Central	Provincial	Formal	Informal		
Casual	-	-	1.7%	21.7%	-	23.3%	
Regular	5.0%	16.7%	3.3%	18.3%	-	43.3%	
Retired	-	-	-	-	6.7%	6.7%	
Self employed	-	-	1.7%	25.0%	-	26.7%	
Total		5.0%	16.7%	6.7%	65.0%	6.7%	100.0%

Source: Own Research, 2003

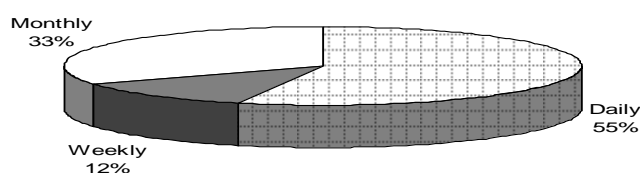
Although the educational levels have improved over the years in the study area, however, it is hard to capitalize on education alone in an increasingly privatized job market. Not too long ago, a secondary education was an assured way to obtain a stable, lifetime job in government or in state-owned enterprises, this is no longer the case. With

<sup>29</sup> Public sector employment is essentially governed by the Civil Servants Act 1973, the Essential Services (maintenance) Act 1952 & 1958, and various Federal and Provincial "Efficiency and Discipline Rules". The various forms of Contracts in the state employment are derived from the said laws (Nomaan et. al., 2000).

the gradual decline of the public employment due to the structural adjustment programs initiated by several governments in the past decade for satisfying the demands of International Donors (World bank, IMF), the ranks of the educated unemployed have swelled looking for alternative sources of employment mostly in self employment. People who either have access to productive assets or considerable prior experience through a family enterprise or an apprenticeship either pursue self-employment as an entrepreneurial strategy, or as a survival strategy whose personal situation prevents them from engaging in wage employment.

Many of the **informal activities** which households were found to engage in were often of low status. The low level of retired/jobless (7%) is attributable to the fact that the poor can generally not afford to be unemployed. The form of employment inadequacy they usually experience is underemployment, either of the visible or invisible kind. Most of these activities are not highly visible from the outside since they would not be recorded anywhere official. They do not bring in much money but they are nevertheless vital for livelihoods, particularly those of the poorest – who comprise the majority of the population in the surveyed villages. Majority of these informal activities were paid on daily basis.

**Figure 7. Mode of Payment Across Various Non-agricultural Activities**



Source: Survey Results, 2003

Despite the fact that wage labourers (informal private) are being hired increasingly, there are no regular contracts of employment for them as they are not covered by any legal regulation. Their resources of property and qualifications are so limited that they only have a few options to engage in remunerative activities. Consequently, the dominating strategy is a hand-to-mouth solution based on local employment or in the nearby provincial capital Peshawar. Moreover the lack of documentation in the economy provides a ready made incentive for employers to shift their activities beyond the net of legal protection for workers. They are often recruited indirectly through so called contractors and denied even basic labour rights relating to working hours, minimum wages and working conditions. Take for instance, the respondents in the two communities in Northwest Pakistan were working around 60 hours a week<sup>30</sup> that resulted in large **work place injuries** (38%). As majority of the respondents were low skilled daily wage worker employed in bad environmental conditions which clearly speaks for their work place injuries.

<sup>30</sup> The average work hours/day for Kukar and Dalazak were 10.7 and 9.7 respectively.

## 5.2. Factors Influencing Head of the Household Participation in Non-Farm Economic Activities: Probit Model Results and Discussion

We estimate a **Probit model** on a set of explanatory regarding head of the household participation in non-farm economic activities. A description of the explanatory variables is given in table 5. The dependent variable in the analysis is:

$$\begin{aligned} inf &= 1, \text{ if head of the household is engaged in informal economic activities} \\ &\text{(wage labor, unregistered businesses, permanent private employment, dependent} \\ &\text{on welfare)} \\ &= 0, \text{ otherwise} \end{aligned}$$

**Table 5.** *Definitions and Summary Statistics of Independent Variables*

Variable	Definition	Mean	Min.	Max.	Std. dev.
<b>AGE</b> <sub>continuous</sub>	Age of HHH (in years)	42.9	23	70	10.8
<b>LED</b> <sub>continuous</sub>	Level of education of HHH (in years)	2.8	0	14	4.2
<b>DEB</b> <sub>continuous</sub>	Duration of employment of HHH (in years)	16.3	0	40	8.6
<b>TPP</b> <sub>(0,1)</sub>	Vocational training either private or government for 3 months by HHH	0.1	0	1	0.3
<b>MIE</b> <sub>continuous</sub>	Total monthly income of household (in Pak. Rupees)	5696.4	800	51000	7126
<b>HHS</b> <sub>continuous</sub>	Number of HH members	7.5	2	22	3.9
<b>HMM</b> <sub>continuous</sub>	Number of HH members employed	2.0	1	6	1.3
<b>TEL</b> <sub>(0,1)</sub>	Ownership of telephone by HH	0.2	0	1	0.4
<b>OTR</b> <sub>(0,1)</sub>	HH ownership of transport vehicle (Suzuki van, car or rishkaw) or farm machiney (tractor or other farm machinery)	0.3	0	1	0.4
<b>SOG</b> <sub>(0,1)</sub>	Sources (relatives, friends, neighbours or other influential people) used for getting job by HHH	0.6	0	1	0.5
<b>HOS</b> <sub>(0,1)</sub>	Ownership of pakka house by HH	0.2	0	1	0.4
<b>VIL</b> <sub>(0,1)</sub>	Village where HH is located	0.5	0	1	0.5

Source: Survey Results, 2003  
Number of Observations = 60

### 5.3. Estimation Results of Probit Model

#### 5.3.1. The Role of Individual Characteristics in Participation in Informal Employment

The results (appendix I) indicate that, age of the heads of the household negatively influences the possibility of their involvement in informal economic activities. In more precise terms, older head of the household are 1.7 % less likely to participate in informal economic activities. The young people are more attracted towards informal economic activities (figure 8) due to a variety of reasons; firstly, these occupations demand hard labor which reduces the chances of those who are older. Secondly, it may also indicate towards the lack of employment opportunities in formal sector as well as possession of required skills to participate in these well-paid jobs.

**Figure 8.** Age of HH Head in the Research Area, 2003



Source: Survey Results, 2003

The job or business experience (in years) is also highly significant (1% level) and each additional year of experience increases the probability to engage in informal employment sector by 3.2%. This result confirmed by the case studies conducted in the same area, clearly suggests the lack of alternative employment opportunities and people as a survival strategy have to specialize in their respective fields.

The results (annexure I) on education is according to expectation, due to the survival nature of these jobs, with each additional year of education, the probability to remain in informal sector reduces by 4.3%. Table 6 reveals that literacy rate was about 33% (almost all were matric and below) in the research area. Most of the illiterates were concentrated in private informal sector which is a kind of survival strategy by the rural poor to engage in low paid refuge activities.

Education is not essential for access to informal employment as well as **lower cadre** of jobs in the Public sector (table 6). However, education is indeed needed for access to more highly paid stable employment in formal sector. Poverty was mentioned by majority of the respondents as the main reason for their illiteracy.



**Skills** measured in form of vocational training earned at private or public institutions reduces the probability of respondents by almost 12% to engage in informal employment sector, however, the results are not significant. The situation regarding training institutions in the study area can be judged from the fact that only 38% respondents reported training institutes pertaining to their profession, but only 14% have received training prior to joining their profession majority of which were arranged by the formal sector i.e. government of NWFP, Pakistan. Similar number of respondents has received on-job training predominately in the public sector. An irony of these training was that almost 50% of those trained were not satisfied with these exercises. One of the respondents in Kukar regarded his on-job training as “Just talking and get together”. A welder trained at Coca Cola factory near Kukar on Peshawar-Charsadda Highway explained his training as “It lasted for three days in which they corrected some minor errors”. A driver in Dalazak said “I learnt driving due to working in a motor mechanic workshop since childhood.”

**Table 6. Importance of Education for Different Sectors of Employment**

Employment Sector		Level of Education					Total
		Graduation	Matric	Middle	Primary	Illiterate	Percent
Private	Formal	-	-	1.7%	3.3%	1.7%	6.7%
	Informal	-	5.0%	11.7%	3.3%	45%	65.0%
	Jobless	-	1.7%	-	-	5.0%	6.7%
Public	Central Gov.	-	3.3%	-	-	13.3%	16.7%
	Provincial Gov.	1.7%	1.7%	-	-	1.7%	5.0%
Total		1.7%	11.7%	13.3%	6.7%	66.7%	100.0%

Source: Survey Results, 2003

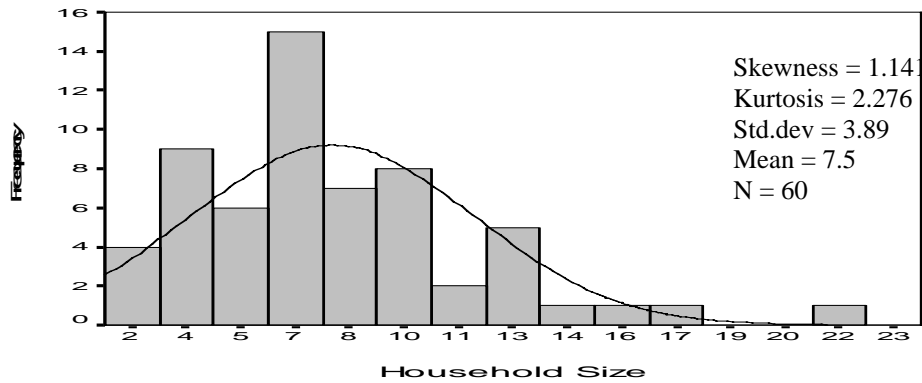
The role of **Social Capital** in access to informal employment is although positive but importantly it is non-significant. Majority of the respondents are daily wage labor searching on their own for jobs locally or in capital city Peshawar and hence need ‘*relational capital*’ in building their livelihood. For instance, a welder from Kukar said “after layoff from GTS, I joined Coke (Coca Cola factory) by contact and influence of an influential person of the area. I went there (factory) three times with him.”

### 5.3.2 The Role of household level Characteristics in Participation in Informal Employment

Household composition affects the types of employment its members enter into, as well as how or by whom decisions are taken. Results from the probit analysis suggests that when the family size increases by one, heads of the household are 7% less likely to

participate in the informal sector (annexure I). A higher household size due to dependency problems make it necessary on part of its member to diversify their income sources and strive for more productive occupations. Fig. 9 shows the main dimensions and composition of households in the research area. The household size for non-agricultural HH as reported by Pakistan agricultural census 2000 is 7.1 which is confirmed by the present research.

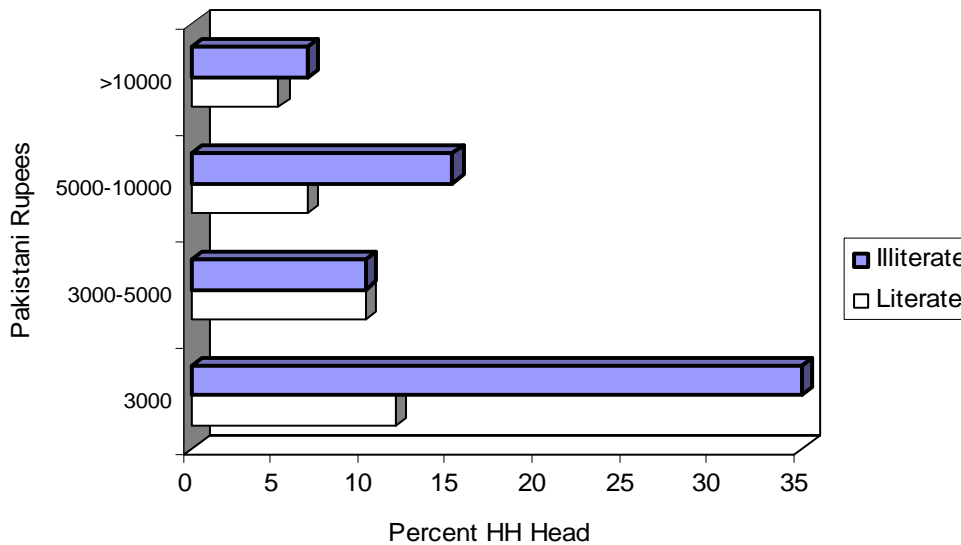
**Figure 9.** Household size of those engaged in Non-farm sector in the Study Area, 2003



Source: Survey Results, 2003

With the additional of each new **working member** in the household, the probability to engage in informal sector increases by 35%. The result (annexure I) points towards two diverging phenomenon; on one hand there is high dependency ratio (58.8 in research area) and at the same time weak labor market, both pushing people into informal sector for survival.

**Figure 10.** Relation between Education and Income in the Research Area



Source: Survey Results, 2003

Similarly, the negative coefficient on income variable, which is statistically significant only at 15%, indicates that, other things the same, as household income increases, the likelihood that the head of the household join informal sector decreases by 0.01%. The result (annexure I) confirms that amount of household income is a measure of the economic success of the households (ALBRECHT, 1976:3). The average monthly household income of Rs. 5696 (€80) in the research area is even below the poverty line estimated at Rs. 8200 (€117) for a five member household in Pakistan.

Similarly, the negative coefficients on household ownership of house, transport and telephone that turn out to be non-significant suggest, *ceteris paribus*, the respondents are more likely to be in formal sectors (see annexure I). The bulk of the houses were **Katcha** (55%), mostly concentrated in the informal sector with poor financial situation an immediate answer for this situation. As far as the means of communication<sup>31</sup> used by the respondents in the research area is concerned private transport (Suzuki vans) was the most important. It was a cheap source of communication between the research area and the provincial capital Peshawar. The horse drawn carriage (**Tanga**) was also used by number of respondents while did not need any transportation to reach their place of work. The average cost of private transportation was Rs. 7 per working day. Telephone service was also not a significant component of *Social Capital* in this part of the world indicating the weak financial status of those engaged in informal sector.

### 5.3.3 The Role of Community Level Characteristics in Participation in Informal Employment

In order to investigate the role of location of the households we constructed a dummy variable for the two villages, Kukar and Dalazak. The intension behind this constructed variable was to capture the importance of infrastructure, labor market and development scenario across the two research areas. The results although non-significant indicate that the dwellers in Dalazak have 4.5% more probability to engage in informal employment sector as compared to those living in Kukar (annexure I). Although both villages were located almost at equal distance (within 8 km) from provincial capital Peshawar, the results are divergent. Pipe water, hand pumps and wells were the main sources of drinking water for the villages. Gas utility was provided to 30% households by state run **Sui Northern Company** in Kukar while the remaining were relying on locally made electricity heaters. Kukar was in better position in term of availability of public infrastructure. Two main points goes in favour of Kukar in term of increased probability of formal sector employment; firstly it was at the juncture of a busy Peshawar-Charsadda highway increasing prospects for the locals to find more productive jobs. Secondly, the existence of Khazana Sugar Mill and Coca Cola factory in the area served the locals with well-paid secure jobs.

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<sup>31</sup> Transport was owned by 18% households consisting of bicycle, motor car, horse cart etc.

## 5.4. Analysis of Structural Changes in the Study Area

### 5.4.1 Changes in the Demography and Education in the Surveyed Areas

As revealed by table 8, population increased nearly 44% in the surveyed areas during the last 17 years. However this increase in population was more prominent in case of Kukar. The increase in population is explained by an increase number of households especially in Kukar, which almost doubled in the stated period. There is not much variation for the Hh size, however, the educational level had considerably improved (especially in Dalazak) between the dates of the three surveys, even if the literacy rate is still very low.

**Table 7.** Analysis of Selected Structural Changes from 1967/68 to 2003/04

<i>PARAMETERS</i>		<i>VILLAGES</i>		<i>TOTAL</i>
		<i>Kukar</i>	<i>Dalazak</i>	
<i>Inhabitants (Number)</i>	1967/68	1687	888	2575
	1987/88	3082	2389	5471
	2003/04	5941	3762	9703
<i>Households (Number)</i>	1967/68	271	136	407
	1987/88	372	296	668
	2003/04	728	452	1180
<i>Household Size (Pers./Hh)</i>	1967/68	6.2	6.5	6.4
	1987/88	8.3	8.1	8.2
	2003/04	8.2	8.3	8.3
<i>Educational Level Male Pop<sup>32</sup>.</i>				
<i>Any Schooling over 4 years (%)</i>	1967/68	13.7	14.5	14.1
	1987/88	23.9	25.1	24.5
	2003/04	25.7	36.6	31.2

Source: MANIG, 1991:126 and DISTRICT CENSUS REPORT OF PAKISTAN, 2000<sup>33</sup>

### 5.4.2. Changes in the Farm Structures of the Villages

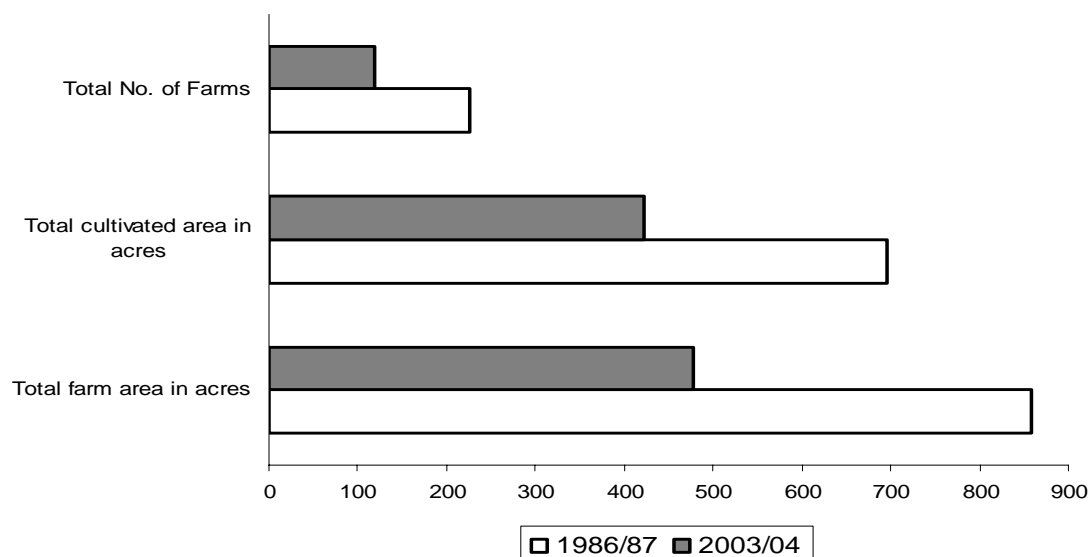
The increase in the rural population led to a decrease in absolute number of farms (fig. 11). In the year 1986/87, the total number of farms was 225, which reduced to 118 farms in 2003/04. The changes in the number of farms were accompanied by a transition in the total farm as well as cultivated area. The farm area reduced almost 45%

<sup>32</sup> In the previous Research Projects of 1967/68 & 1987/88 very limited data is available on **female literacy rate** as in those time only a few girls went to school. Hence for comparison only the educational level of male population is used. However, it was observed in the field study in Northern Pakistan that a large number of families are now stressing on female education.

<sup>33</sup> A comparison was made of DISTRICT CENSUS REPORT OF PAKISTAN, 2000 with the Census Surveys of 1967/68 & 1986/87 by the Institute of Rural Development Georg-August University Goettingen Germany.

in a span of 17 years in the study area accompanied by a major reduction (48%) in number of farms (fig. 11). There is very little farm activity in these villages, but what little there is, is vital to the livelihoods of the households involved in it. Farming is almost entirely subsistence as it is a survival strategy, and is not business-oriented. The aim of farming is the survival of the household which depends on a given farm.

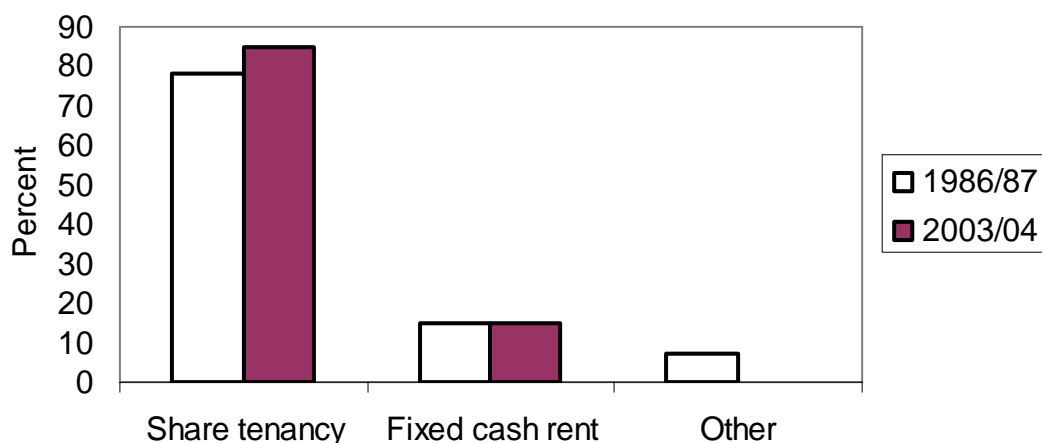
**Figure 11.** *Changes in the Farm Area, Cultivated Area and Number of Farms in the Survey Villages in Northwest Pakistan, 2003-04*



Source: Own Results, 2003; MANIG, 1991:78; PAKISTAN CENSUS OF AGRICULTURE, 1999

Similar trend was observed in the land tenancy where **Share tenancy** (50-50 share in agricultural produce) increased 7% while **usufructuary mortgage** was not observed in the study area (fig. 12).

**Figure 12.** *Changes in Land Tenancy in the Research Area, 2003-04*



Source: Own Research, 2003; MANIG, 1991

There is a significant increase in the number of farms below 0.5 acres in the research area due to increased fragmentation of land (table 8). The average for all of the farms with respect to farm area was 4 acres/holding. Similar trends were observed in cultivated area<sup>34</sup> which reduced 40% since the previous study in 1986/87.

**Table 8.** *Changes in the Farm Size in the Study Area, 2003-04*

<b>Farm Size categories</b>	<b>1986/87</b>	<b>2003/04</b>
Less than 0.5 acres	0.1	3.5
0.5-less than 2.5 acres	51.6	43.9
2.5-less than 7.5 acres	33.9	41.2
7.5- less than 12.5 acres	7.7	5.3
12.5- over 12.5 acres	6.7	6.1
<b>Total (%)</b>	<b>100</b>	<b>100</b>

Source: Own Research, 2003; MANIG, 1991

High population growth observed in the study area decreases landholding as land has to be continuously subdivided<sup>35</sup>. The fact that land is not as dynamic as population entails a shortage of land with increased population. Due to the pressure on land, the importance of non-agricultural activities is steadily increasing.

In the research area, farming land was exclusively devoted to wheat, maize and fodder cultivation. The predominant crops grown were wheat, maize, sugar cane, vegetables and fodder. The research area has completely lost its importance as locality for cultivating fruit as reported in the 1986/87 survey (MANIG, 1991:97) as there was not even a single case of orchards plantation noticed in the area. The respondents mentioned the appearance of pests (fruit flies and aphids) and marketing problems as the main causes behind the **disappearance of orchards** in the area. Similar reasons were behind the decline in vegetable cultivation (especially chillies), once a major source of cash income for the rural economy. Cultivation of rice and gram crops were also non significant, however a few respondents (12%) cultivated sugar cane as cash crop on an area of 87 acres<sup>36</sup>. There were a few patches of grass/wastelands (6%) in the study area. As far as the ownership of farm machinery is concerned just three households (1%) were having tractors<sup>37</sup>. Most of the farmers were hiring tractors and related implements twice a year at an average cost of Rs. 200 per hour<sup>38</sup>.

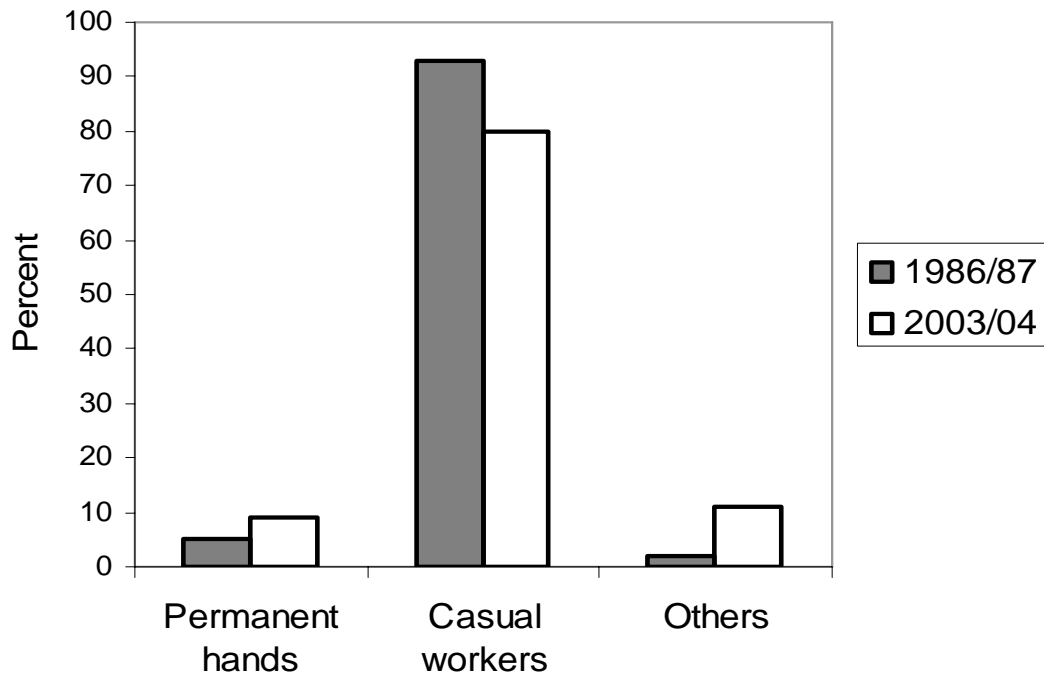
<sup>34</sup> For instance Kukar, characterised by shrinking cultivated area due to demographic pressure, just 39 households (21%) have owned farming land of 130.6 acres. As low as 34.3 acres were self cultivated while 94 acres were rented-out while just 30.8 acres was rented-in.

<sup>35</sup> The **Islamic Law of Inheritance** plays an important role in shrinking of cultivatable land.

<sup>36</sup> The share of Kukar was more due to its closeness to **Khazana Sugar Mill**, Peshawar Pakistan.

<sup>37</sup> MANIG (1992) mentioned 19 households with owned tractors in all the six villages (1819 households) in Northwest Pakistan surveyed in 1986/87. Similarly, according to PAKISTAN CENSUS OF AGRICULTURE

**Figure 13.** *Employment of Hired Agricultural Labour in the Households in the Surveyed Villages in Northwest Pakistan, 2003-04*



Source: Own Research, 2003; MANIG, 1991

There has been a four percent increased in permanent agricultural labours since the last survey while the share of casual workers reduced around 13% (fig. 13). The importance of Dalazak in agricultural labor can be revealed by the fact that 72% (total 254) of these were employed there, to undertake different kinds of activities ranging from cultivation of the land to wedding, harvesting and transportation of goods. However, weeding and harvesting was a family affair for small land holders as these operations were performed by the adults of the family (men).

There is not a major change in livestock situation at the village level as farmers still owned livestock that was used for different purposes however; there was major variation in the livestock endowment at household level. Cattle (cows, calves, buffaloes), followed by poultry, sheep and goats, were owned by many households. The presence of high number (190) of she-buffaloes in Kukar along with the high share of credit (11 respondents) taken for purchase of livestock explains the commercial importance of livestock in this village.

The *Basic Survey* revealed that locals in the study area have limited access to institutional credit; however, availability of private loans (informal moneylender & relatives) is a positive factor. As a matter of fact poor people are not able to fulfil the requirements of banks and other existing financial institutions in the village and they

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1999, the total numbers of tractors in District Peshawar were 735 while the cultivated land per tractor was 100 ha.

<sup>38</sup> Around 93% farming households hired tractor at Rs. 50/hr in 1986/87 (MANIG, 1992).

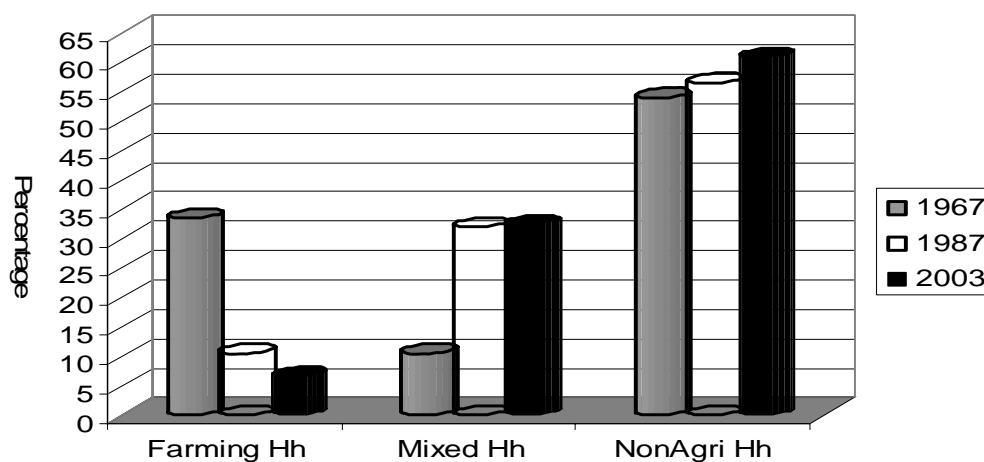
easily get private loans (informal) to fulfil their immediate needs. In Dalazak, 50% of the respondents reported their purpose for taking credit as agriculture inputs<sup>39</sup>, which shows the importance of agriculture in this village. A comparison with situation in 1987 reveals that the share of formal sources in the total credit taken increased from 5% to 10%. The *Basic Survey* revealed that household used Rs. 16.6 million on capital formation<sup>40</sup> in a single year. Most of the amount was utilized for **ceremonies** (marriages, hajj etc) and house construction.

The foregoing discussion reveals that the farm economy of the region is characterised by small farms, scarcity of land for expansion, low yield, the shortage of farm machinery and lack of adequate market. The farm economy is not then in a position to fully support the dense population of the region. The fact that farmers cannot support their family by farming alone necessitates farmers' engaging in non-agricultural activities to supplement farm income and support themselves.

#### 5.4.3 Changes in the Occupational Structure in the Study Area

The **changes in demographic situation** also brought some structural changes in the occupational structure in the surveyed region. There is a clear trend on the part of the household in Northwest Pakistan to switch towards non-agricultural activities in the last 37 years (fig. 14). This development is caused by the large increase in the households on the whole as well as the shrinking of employment opportunities in the farming sector.

**Figure 14.** *Changes in Occupational Structure in the Research Area since 1967*



Source: Own Survey, 2003 and MANIG, 1987

<sup>39</sup> The stated agricultural inputs were: seed, fertilizer, pesticides and hired tractor.

<sup>40</sup> In the research area the following order of priority was observed:

- Capital formation (2003/04): *Ceremonies, House construction, Livestock, Off farm investment, Land purchase, Consumption, Others*
- Capital formation (1986/87): *Ceremonies, Consumption, House construction, Farm investment, Off farm investment, Medical treatment, Others*



Within the non-agricultural sector, the proportion of informal wage earners is very high as majority of these households derive their income from jobs of low occupational status. The share of exclusively farming<sup>41</sup> households reduced from 34% in 1967-68 to just 7% in 2003-04 while at the same time a 4% increase in non-agricultural activities in the last 16 years is accompanied by a stability in households with mixed income sources (farming and non-agricultural income). For many former farm households, it became increasingly necessary to find additional income sources not only outside agriculture<sup>42</sup> but also outside the villages.

**Table 9.** *Distribution of People according to their Occupational Field in the Survey Villages in Northwest Pakistan 2003/04*

Year	Percentage working in the following field				
	Casual worker	Permanent employee	Government employee	Own business	Others
1987/88	19.2	30.5	18.6	30.3	1.4
2003/04	23.8	34.4	18.0	22.2	1.6
% change	4.6	3.9	-0.6	-8.1	-0.2

Source: Own Survey, 2003; MANIG, 1987

All the occupations reported in the *Special Survey* were differentiated according to five occupational categories (Table 9). A comparison of the households engaged in different non-agricultural activities, with the situation prevailing 16 years ago reveals the increased role of casual workers and permanent employee in the local economy. An immediate area of concern is the decrease in own businesses which speaks for the deteriorating economic environment in Northwest Pakistan.

<sup>41</sup> In the study area the share of households with a farm decreased from 44% in 1986/7 to 36% in 2003/4.

<sup>42</sup> The extremely small size of the farms make additional earning necessary for the households.

## 6. CONCLUSIONS AND RECOMMENDATIONS

### 6.1. Conclusion

The study is a micro level analysis of institutional change and its interdependence with rural development exemplified through non-farm activities. It revealed the process of institutional change through a comparative analysis with the studies carried out by IRD, Georg-August University Goettingen, Germany in the same villages about 17 years ago. In the summer of 2003, a series of household surveys were fielded in two rural villages of Northwest Pakistan in a **15-kilometer periphery** around the capital city of Peshawar. The *Basic Survey* collected information about all major economic activities of the households as well as other social and demographic characteristics. This survey was used as a litmus test to have an idea about the existence of non-agricultural activities in the research area. It revealed that **farming is no longer a major livelihood strategy** as more and more households are switching towards alternative sources of employment especially **non-agricultural activities** in the study area.

The *Special Survey* was focused on investigating the trends of participation in non-agricultural employment. The **role of public sector** as well as **formal private** in job provision is not significant as the bulk of the respondents were engaged in low paid informal private employments supporting unskilled entrance. In order to investigate the **factors** responsible for respondents' engagement in the informal economic sector probit analysis was applied. The results indicated the significant and positive role of individual level characteristics like **age** and **experience** of employment. Similarly, **education** reduces the probability to engage in the informal sector by almost 12%. In addition, vocational training and social capital turn out to be non-significant as the majority of the jobs were survival oriented. At the household level, the majority of the variables like household size, income and economically active members turn out to be significant. The result points towards two diverging phenomena; on one hand there is a high dependency ratio (58.8 in the research area) and at the same time a weak labor market pushing people into the informal sector for survival. Similarly, the negative coefficients on household ownership of a house, transport and telephone which turn out to be non-significant suggested, *ceteris paribus*, the respondents' likelihood to engage in formal sectors. The constructed dummy variable to capture the role of local development in the two research villages revealed that Kukar was in a better position in terms of availability of public infrastructure.

A comparative analysis of the present study with the studies conducted by IRD Georg-August University Goettingen in 1967/68 and 1986/87 revealed drastic changes in socio-economic life in the study area. The **population increased nearly 44%** in the surveyed areas along with some improvement in education between the dates of the three surveys, even if the literacy rate is still very low. The share of **exclusively farming households** reduced from 34% in 1967-68 to just 7% in 2003-04 as there is a

clear trend on the part of the household to switch towards **non-agricultural activities** (mostly informal sector). This development is caused by the large increase in the households on the whole as well as the shrinking of employment opportunities in the farming sector. The data does not cover all rural areas in Pakistan, and it is clearly not appropriate to generalize the findings for households in these regions to those located in more dispersed rural areas. To sum up, **non-farm employment** has an increasing role to play in rural areas characterised by demographic pressure and depleting natural resources.

## 6.2. Recommendations

The results of the current study provide a foundation for any attempt to forecast labor force growth in non agricultural employment and composition in rural Northwest Pakistan, which are an essential component of any human resource development policy. The findings of the study also have important implications for the multitude of small and micro enterprise finance programs that are currently quite popular in Pakistan as a means to alleviate poverty and employment generation. Some of the important recommendations that can be drawn on this study are:

Agriculture is no longer the only livelihood source for rural areas in developing countries like Pakistan; there are alternative sources like non-agricultural employment. Non-agricultural employment be given its due share not only in financial sphere but also in development debates. **The informal sector**, the main source of survival for rural poor, is in urgent need of governmental support. This support can be given in the implementation of existing labor laws on minimal wage and labor security. The infrastructure development is a key for a sustainable transition from agriculture to non-agricultural sector. However, the approach should be more comprehensive providing soft as well as hard infrastructure. **Education** (especially women) should be given the highest priority as its role is strategic in more productive jobs and businesses.

An examination of the **determinants of participation** in informal sector is relevant for a number of important policy issues. For example, it can suggest whether it makes more sense to create job opportunities in the rural areas through programs supporting **self employment** or to direct subsidies to experienced entrepreneurs who commit to hire local population. It can identify **specific groups that are disproportionately** affected by the transition to a private-sector-led economy, such as illiterate rural poor, who may have few opportunities for public-sector employment. It can also identify the groups whose labor market prospects make them especially vulnerable to poverty, such as casual workers. Finally, by examining the prevailing situation regarding non-agricultural employment represented among the poor, such as illiterate workers, the analysis could point to ways to assist these groups in improving their livelihood. In the nutshell, non-farm sector has a very high potential to uplift the rural areas in developing countries but at the same time it also need its **due recognition and support** in the governmental policies.

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Appendix I. *Probit Results for Participation in Informal Employment*

Participation in Informal Employment					
Variables		Marginal effect	Coeff.	Std. Err.	t value
Age	AGE	-0.0167*	-0.0790	0.009	-1.90
Duration of job/business	DEB	0.0321***	0.1513	0.011	2.69
Level of education	LED	-0.0427**	-0.2015	0.017	-2.25
Vocational training	TPP	-0.1173	-0.4642	0.238	-0.57
Source of job	SOG	0.0825	0.3806	0.145	0.59
Household size	HHS	-0.0690**	-0.3259	0.024	-2.46
Economically active members	HMM	0.3525***	1.6634	0.126	2.80
Monthly income <sup>43</sup>	MIE	-0.0001	-0.0002	0.001	-1.49
Ownership of telephone	TEL	-0.1089	-0.4431	0.234	-0.53
Ownership of transport	OTR	-0.0311	-0.1411	0.185	-0.17
Ownership of house	HOS	-0.0054	-0.0250	0.179	-0.03
House location	VIL	0.0451	0.2125	0.127	0.35
Constant		-	2.5689	1.555	1.62
Chi-squared = 37.59***					
Pseudo R-square = 0.50					
% predicted correctly = 87					

Source: Own survey, 2004

Notes: \* (\*\*) [\*\*\*] significance at 10% (5%) [1%] level of error probability

Dependent variable: Participation in informal economic activities (Y; 0 = no, 1 = yes)

Number of observations = 60

The marginal probability effect (dF/dx) is the change in probability in term of infinitesimal change in each independent, continuous variable and discrete change of dummy variable from 0 to 1. Similarly, z-statistics (t values) are the test of the underlying coefficient being 0.

<sup>43</sup> Significant at 15% level of confidence

## Appendix II. *Case Studies in the Survey Villages*

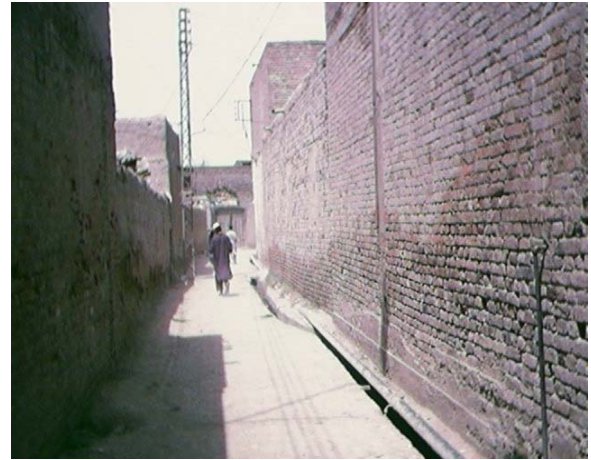
Ali Khan aged 33 is the head of a 12 member household and unmarried. He is educated up to primary and could not study further due to poverty. He is a driver of a Suzuki van that he operates between Dalzak and the Provincial Capital Peshawar, from 8 am to 8 pm and for this work he receives Rs. 83 daily. His wages increased in transition from Rs. 40 to 60 and now 83. He has been involved in this profession for the last 16 years. He learnt driving due to working in a motor mechanic workshop since childhood. Although he has good relation with his employer, yet he is not happy with his presently situation and expressed his desire for a job in an Arab country.

Ziad in his mid twenties live with his 21 years old brother Saddiq, mother and wife in a two rooms house (Katcha) in Dalazak. He is illiterate and considers poverty as the main reason for his lack of education. He has a tailoring shop in the village, where he is assisted by his brother. He works 11 hours a day and earns Rs. 3000 a month which easily fulfils his expenditures.

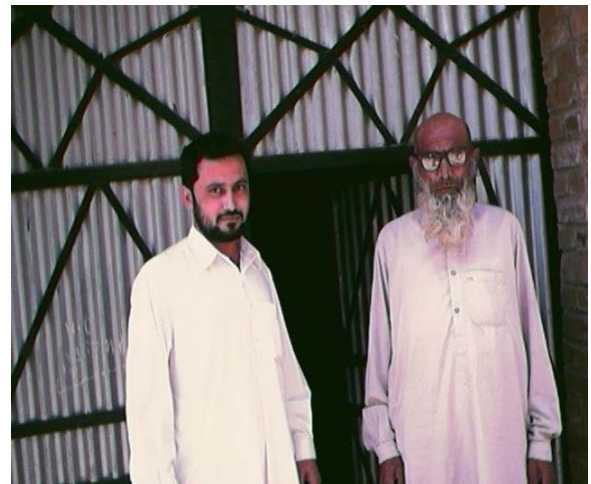
Sabir Ali is young commercial reporter in daily 'Subhi' Peshawar for the last four years. Before 'Subhi' he was engaged with 'National Daily' and then daily 'Jehad' for one year each. He receives his salary on 20% commission. His seven member family migrated to Kukar 17 years ago as his mother belongs to this village. He has twice on-job training but these did not bring an improvement in his skill as these were not conducted properly. He is a member of a news paper union for the last 4 years and satisfied with their activities.

Sultan Ali, in his early thirties is educated upto middle, has a barber shop in the centre of Kukar. Fifteen years ago he joined this profession as a trainee with a master (senior barber) in the village. This single bread earner of a five member household has to work for 14 hours to earn Rs. 100 a day. That's why he is not satisfied with his present job as it is too tiring.

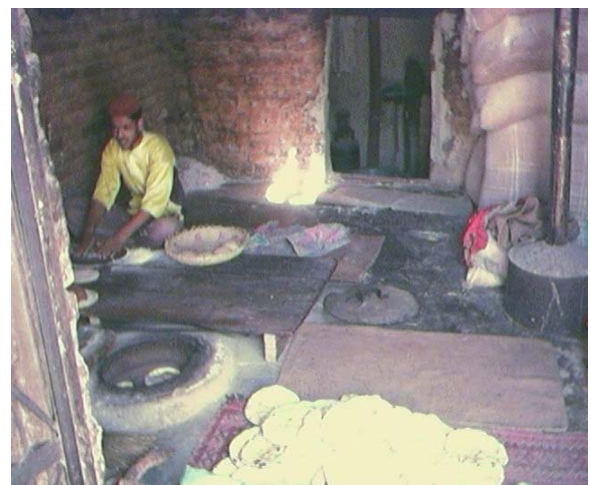
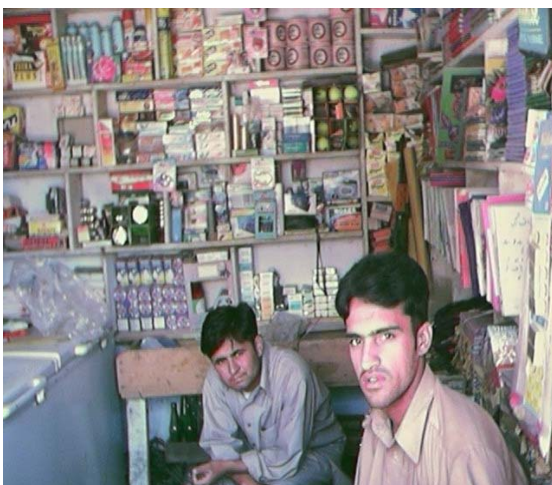
**Appendix III.** *Some Pictures of Socio-Economic Life in Village Kukar and Dalazak in North-west Pakistan*



*State of Public infrastructure in the Research Area*



*Village Hujra, a common place for villagers get together*



*A Grocery shop and Bread making shop, some examples of Informal Private Sector (uncovered economy)*



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