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Pakistan Rural Household Panel Survey 2012 (Round 1): Methodology and Community Characteristics

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THE PAKISTAN STRATEGY SUPPORT PROGRAM (PSSP) WORKING PAPERS

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The data collection, reporting process and key descriptive statistics from the Rural Household Panel Survey 2012 Round 1 are presented in PSSP discussion papers 007, 008 and 009. Discussion paper no. 007 reports the details of survey processes and key descriptive statistics from the community survey questionnaires. Discussion paper no. 008 provides the description of all the data collected from households except for Agriculture and Health and Nutrition. Discussion paper no. 009 provides a description and analysis of the Aspirations of these households. There will be separate discussion papers on Agriculture and Health and Nutrition which are forthcoming.

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Acronyms and Abbreviations

AKRSP	Agha Khan Rural Support Programme
BHU	Basic Health Units
BISP	Benazir Income Support Programme
CsPro	Census and Survey Processing System
DHS	Demographic and Health Survey
FATA	Federally Administered Tribal Areas
GDP	Gross domestic Product
GOP	Government of Pakistan
HIES	Household Integrated Economic Survey
IFPRI	International Food Policy research Institute
KPK	Khyber Pakhtunkhwa
LFS	Labour Force Survey
LHW	Lady Health Worker
MPI	Multidimensional Poverty Index
NARC	National Agricultural Research Center
NGO	Non-Governmental Organization
NRSP	National Rural Support Programme
PPHS	Pakistan Panel Household Survey
PPP	Purchasing Power Parity
PPS	Probability Proportionate to Size
PRSP	Punjab Rural Support Programme
PSES	Pakistan Socioeconomic Survey
PSLM	Pakistan Social and Living Standards Measurement Survey
PSSP	Pakistan Strategy Support Program
PSUs	Primary Sampling Units
RHC	Rural Health Clinic
RHPS	Rural Household Panel Survey
SPSS	Statistical Package for Social Scientists
SRSP	Sarhad Rural Support Programme
SSU	Secondary Sampling Units
UC	Union Council
UN	United Nations
ZTBL	Zarai Taraqiyati Bank

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Executive Summary

The Pakistan Strategy Support Program (PSSP) conducted this Rural Household Panel Survey (RHPS) during March-April 2012 in three provinces of Pakistan (Punjab, Sindh, and KPK). The survey aims to provide the quantitative basis to identify and address the urgent economic policy priorities related to the implementation of the Planning Commission's Framework for Economic Growth.

This survey collected information on a large number of topics, such as, sources of income, nature of employment, consumption patterns, time use, assets and savings, loans and credit, education, migration, economic shocks, participation in social safety nets, and household aspirations. In this regard, data were collected not only from household (called household survey) but also from key informants of the selected mouzas (community survey), school headmaster/mistress of schools in mouza (school survey), and shopkeepers in three markets of a district (price survey).

Given the large volume of data and information collected from this survey, the survey results are presented in two discussion papers. The first provides details of the sample selection process, survey instruments and implementation. It also provides details on the community, schools and prices questionnaires. A detailed analysis of the household survey is presented in the second discussion paper.

***Sample Design and Survey Process*:** The sample universe included all households in the rural areas of the provinces of Punjab, Sindh and Khyber-Pakhtunkhwa (KPK). Balochistan was dropped from the sample selection due to security reasons. The multistage stratified sampling technique was used. A total of 19 districts were selected from within the three provinces; 12 from Punjab, 5 from Sindh and 2 from KPK. Within each district, 4 mouzas were chosen, 48 from Punjab, 20 from Sindh and 8 from KPK, for a total of 76 mouzas in the sample. One enumeration block was selected from each mouza and a complete household listing was conducted in this block. Finally 28 households were randomly selected from this list to be included in the sample. Thus a total of 2124 households were selected for survey. Of these 34 refused and the survey was conducted on 2090 households.

Six survey instruments were developed to collect the information. These included three questionnaires (Male, Female and a household member 18-35 years old) for each household in the sample and a community (one per mouza), schools (at least one per mouza) and prices (one district, UC and mouza) questionnaire.

The survey was conducted by nineteen teams, each comprising two males, two females and a supervisor. The monitoring of the whole survey process was conducted by a team of monitors. A survey coordinator controlled all the field operations. The survey was completed by April 25, 2012 and data entry was completed by May 22, 2012. The results of household survey are presented in Volume II of this report.

Analysis of Community Survey: The community survey describes the conditions of mouzas surveyed. The results indicate that a major portion of internal roads of the villages were made of mud whereas a major portion of external roads were made of asphalt. The most common modes of transport to go to nearest city were motorcycle, three-wheeler, four wheeler and bus. The informal health services such as midwives dominated the villages whereas the formal health services such as hospitals were found in a very low percentage of the villages. The most common sources of credit within villages were shopkeepers and landlords. Formal credit institutions were found in very few villages and in most cases were more than 15 kilometers away from these villages. The most common basic services and amenities were cellular phone services which were available in almost all the villages whereas the least common was garbage collection system which was available only in 1.3 percent of the villages.

Most villages indicated betterment in the business environment in their villages in the last five years. A majority of the villages identified poor quality of electricity as the major constraint for the growth of nonfarm business. A majority of villages reported the presence of a factory/mill within 20 kilometers. A large majority of villages reported the presence of some welfare program in their village. Nearly two-third villages had at least one development program during last five years with the majority of these programs related to improvements in school infrastructure or the connection to cellular or fixed phone lines.

Analysis of School Survey: A total of 117 schools were surveyed in 62 communities; 8 communities had no schools and schools present in another 6 schools were not functional. Urdu was found to be the most common medium of instruction in a majority of schools, however in Sindh, a large proportion of schools used Sindhi as a medium of instruction. Private schools were very few and were mostly located in Punjab. Almost half of the schools surveyed have co-education. More than half were primary schools. In terms of facilities a majority of these schools used chalk board, had a boundary wall and electricity whereas only a small proportion had a library and a laboratory. On average there were 5 teachers per school with a larger proportion of teachers being male. A majority of the schools did not charge any tuitions fee. The average enrolment was 156 students per school with a student-teacher ratio of 31:1.

Analysis of Price Survey: According to the price survey there were significant price differentials across markets within a province. Prices of wheat flour, rice, milk, and milk products were significantly higher in district markets (or urban markets) than the UC and mouza markets (rural markets). No significant difference in the prices of pulses, fruits and vegetables, meat and poultry, edible oil and ghee, and sugar were observed. Significant provincial differences in the prices of food items were observed.

1. INTRODUCTION

Pakistan's economy has been growing at a slow pace (around 3 percent per year) during the last 5 years. Savings and investments as percent of GDP have been declining and overall deficit has been growing. Prices of essential items rose manifolds during the last five years. Slow production activity resulted in an increasing number of unemployed people (GOP 2012). High and persistently increasing inflation resulted in declining real wages of skilled and unskilled workers and real household consumption expenditure remained stagnant. This is evident from the increasing share of food expenditure in total household expenditure since 2007.

Different measures of poverty show considerably high levels of deprivation. The Multidimensional Poverty Index (MPI)[1] indicates that about 49.4 percent of the population suffered multiple deprivations in 2007 while an additional 11.0 percent were vulnerable to multiple deprivations. Income poverty measured by the percentage of the population living below PPP US$1.25 per day was 22.6 percent. This indicates that income poverty only tells part of the story. The multidimensional poverty headcount was 26.8 percentage points higher than income poverty. This implies that individuals living above the income poverty line may still suffer deprivations in education, health and other living conditions (UNDP 2011).

Peoples' perception about the economic condition of their household and the community is not very encouraging. The nationally representative household survey, the Pakistan Social and Living Standards Measurement Survey (PSLM), asks respondents to provide their perception about the economic situation of their household and community. In addition, subjective information on the effectiveness of public services and facilities available to them is also asked. The most recent survey was conducted in 2010-11. Nearly 43 percent respondents of this survey expressed either a worsening economic situation of their household or no change compared to the previous year. Only 16 percent households reported a better or much better economic condition. Similar responses were received when these questions were asked about their community. In this survey, households were also asked about their level of satisfaction with the facilities and services provided by the government. In response to this question, 31 percent reported satisfaction with health facilities, 12 percent were satisfied with the Family Planning Services, 61 percent with school services, 15 percent with Agriculture Extension services, and 10 percent with the police (GOP 2011).

To examine the levels and dynamics of poverty, several household surveys have been conducted in Pakistan. The government of Pakistan conducts three different types of household surveys, namely Pakistan Social and Living Standards Measurement Survey (PSLM), Labour Force Survey (LFS), and Demographic and Health Survey (DHS). Table 1.1 provides details on the type of data, available information, and what information is missing in these surveys. These surveys provide useful information to measure income and non-income measures of poverty, nature and levels of employment, unemployment and underemployment, and health status and demographic situation.

[1] The Multidimensional Poverty Index (MPI) was developed in 2010 by the United Nations Development Program, and uses several factors that constitute poor people's experience of deprivation, such as poor health, lack of education, inadequate living standard, lack of income, disempowerment, poor quality of work and threat from violence.

Table 1.1: Existing Nationally Representative Household Surveys in Pakistan

Household Survey	Type of data	Available information	Useful for	Missing information
Household Integrated Economic Survey (HIES) and PSLM	Time series of cross sections	Detailed information on income, expenditure, health and education	Measuring income and non-income measures of poverty	Income and Poverty dynamics
Labour Force Survey	Time series of cross sections	Detailed information on employment	Measuring labour force participation, employment, unemployment, underemployment	Sources of income, poverty and poverty dynamics
Demographic and Health Survey	Time series of cross sections	Detailed information on health and demographic aspects	Measuring health status, and demographic situation	Sources of income, expenditure and employment

Source: Authors' compilation

In addition to the nationally representative surveys and to examine the nature, depth, and dynamics of poverty, three panel surveys were also conducted. Despite providing useful information, these surveys have some limitations. These surveys and their limitations are listed in Table 1.2.

Table 1.2: Existing Panel Surveys in Pakistan

Household Survey	Years	Data points	Available information	Limitations
IFPRI panel survey 14 rounds	1986-1994	14 (rural areas)	Sources of income, expenditure, food security, health, nutrition, anthropometry, at disaggregated level	Covers only four districts and 728 households
Pakistan Socioeconomic Survey (PSES), 1999, 2002	1998-99, and 2001	2 (rural and urban areas)	Income, expenditure, health, education.	Limited access
Pakistan Panel Household Survey (PPHS)	2001, 2004, 2010	3 (2 rounds were rural, 3rd was rural and urban)	Detailed data on rural incomes, expenditure, various socio-economic factors	Limited access

Source: Authors' compilation

These data sets generated a large body of economic research with useful policy implications.[2] The research identifies the levels of poverty and its concentration, nature of employment, important sources of income, expenditure patterns, enrolment rates, health status, and so on. The data from these surveys

[2] For example, research found that the rationing system of wheat flour benefitted ration shop owners rather than poor, therefore, the Government of Pakistan took the step of abolishing the ration shop system (Islam and Garrett 1997).

indicate that poverty is concentrated in rural areas. The data also show that the size of farm sector is shrinking, nonfarm employment opportunities are not enough to absorb the rural labour force, institutional setup in rural areas is not supportive of rural people, linkages with urban areas are weak, poor infrastructure is an obstacle in mobility, and that the existing structure favors the large farmers and the rich. Despite identifying several problems related to persistent poverty and its concentration, these surveys fail to dig out the deeply rooted causes of poverty. For example, the existing data sets do not provide information on some indicators that describe the broader and multidimensional poverty defined by the UN in 1998:

> "Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go to, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living in marginal or fragile environments, without access to clean water or sanitation (UN Statement, June 1998 – signed by the heads of all UN agencies)[3]".

Table 1.3 below describes the dimensions of poverty, measurable indicators, and their availability in the available data sets in Pakistan. This table indicates that despite having a good stock of data on various economic, social, and demographics variables, information on insecurity, powerlessness and exclusion, susceptibility to shocks and violence, and coping strategies, and individuals' aspirations are still missing.

In addition, the results of the previously conducted panel data indicate a higher incidence of transitory poverty in rural Pakistan (Dorosh and Malik 2006). Highlighting the data and research gap, Malik (2005) writes: "The limited research available on chronic and transitory poverty indicates different determinants for each and, therefore, implies different policy measures to reduce poverty. Further analysis is limited by the absence of more recent panel data. With the changes occurring in policy approaches towards poverty, inequality, and growth, the need for disaggregated and more in-depth data has increased considerably. The existing data gaps make it extremely difficult to trace trends in the impact of various macroeconomic indicators, and even more difficult to juxtapose them with policy initiatives in order to observe the impact that a particular policy may have had. The availability of appropriate data is the crux of effective policy formulation, and analyzing economic or social performance is impossible without it. Moreover, not only is it necessary to increase the scope of data collection, but also to improve the quality of the existing database and surveys" (see Malik, 2005, pp 60).

[3] http://www.un.org/esa/socdev/unyin/documents/ydiDavidGordon_poverty.pdf

Table 1.3: Multidimensional Definitions of Poverty and Information gaps

Definition of Poverty	Indicators	Information Available
Not having enough to feed and clothe a family	Household income/expenditure	Yes
Lack of basic capacity to participate effectively in society	Education and health, shelter, and access to clean water and sanitation	Yes
Lack of access to productive resources	Asset base, employment, land, credit, physical infrastructure, etc.	Yes
Lack of asset ownership	Savings, durable,	Yes
Insecurity, powerlessness and exclusion – Low Aspirations	Location, access to justice, exploitation, awareness about rights and responsibilities, institutional setup and their functioning, rural-urban and agriculture-non-agricultural linkages	No
Susceptibility to shocks	Coping strategies, safety nets,	No
Susceptibility to violence	Perception, hope, aspirations	No

Source: Authors' compilation

Therefore, effective policy-making for accelerated and inclusive income growth requires better and more detailed real-time information on various factors presented in Table 1.3. To bridge the gap in the availability of detailed data, the Pakistan Strategy Support Program (PSSP) conducted a Rural Household Panel Survey during March-April 2012 in three provinces of Pakistan (Punjab, Sindh, and KPK). This survey aims to identify the urgent economic policy priorities related to the implementation of the Framework for Economic Growth, and to inform economists in the public and academic communities of the new data that the survey will provide. This survey collected information on a large number of topics, such as, sources of income, nature of employment, consumption patterns, time use, assets and savings, loans and credit, education, migration, economic shocks, participation in social safety nets, and household aspirations. In this regard, data were collected not only from households (called household survey) but also from key informants of the selected mouzas (community survey), school headmaster/mistress of schools in mouza (school survey), and shopkeepers in three markets of a district (price survey).[4]

Given the large volume of data and information collected from this survey, the survey results are presented in two discussion papers. The first provides the details of the sample selection process, selected sample and sample weights, survey instruments and implementation. In addition a description of communities, schools in these communities, and the prevailing prices in three markets of selected districts are also included.

This paper is divided into five sections. The second section presents the sample design and survey processes. The description of communities is reported in Section 3. The results of the data collected from schools are presented in Section 4. Section 5 reports the results of the price survey.

Detailed descriptive analysis of the key dimensions of rural household behavior observed through this survey are presented in the discussion paper 008.

[4]Three markets are district, UC, and mouza markets.

2. SAMPLE DESIGN AND SURVEY PROCESSES

2.1 Sample Design

In Pakistan, there are 114 districts in Punjab, Sindh, Khyber Pakhtunkhwa (KPK), Balochistan and Islamabad. According to the Mouza Census of 2008, there are 52,376 mouzas in the four provinces. Mouza, a revenue village, is a unit of land organization defined by the government. It consists of one or more villages. There are 27,059 mouzas in Punjab, 5,983 in Sindh, 11,854 in KPK and 7,480 in Balochistan.

The Rural Household Panel survey was conducted in the rural areas of Punjab, Sindh and Khyber-Pakhtunkhwa (KPK) provinces of Pakistan. The fourth province, Balochistan was dropped from the sample selection process because of security reasons. The sample universe includes all households in the rural areas of these three provinces. In this regard, the lists of revenue villages/mouzas/dehs have been used as sampling frame as provided by the Population Census, 1998. This data provides information on the population and the number of households in each mouza at national, provincial, district, tehsil, union council and mouza (revenue village) level not only for 1998 but also provides population projections up to year 2030.

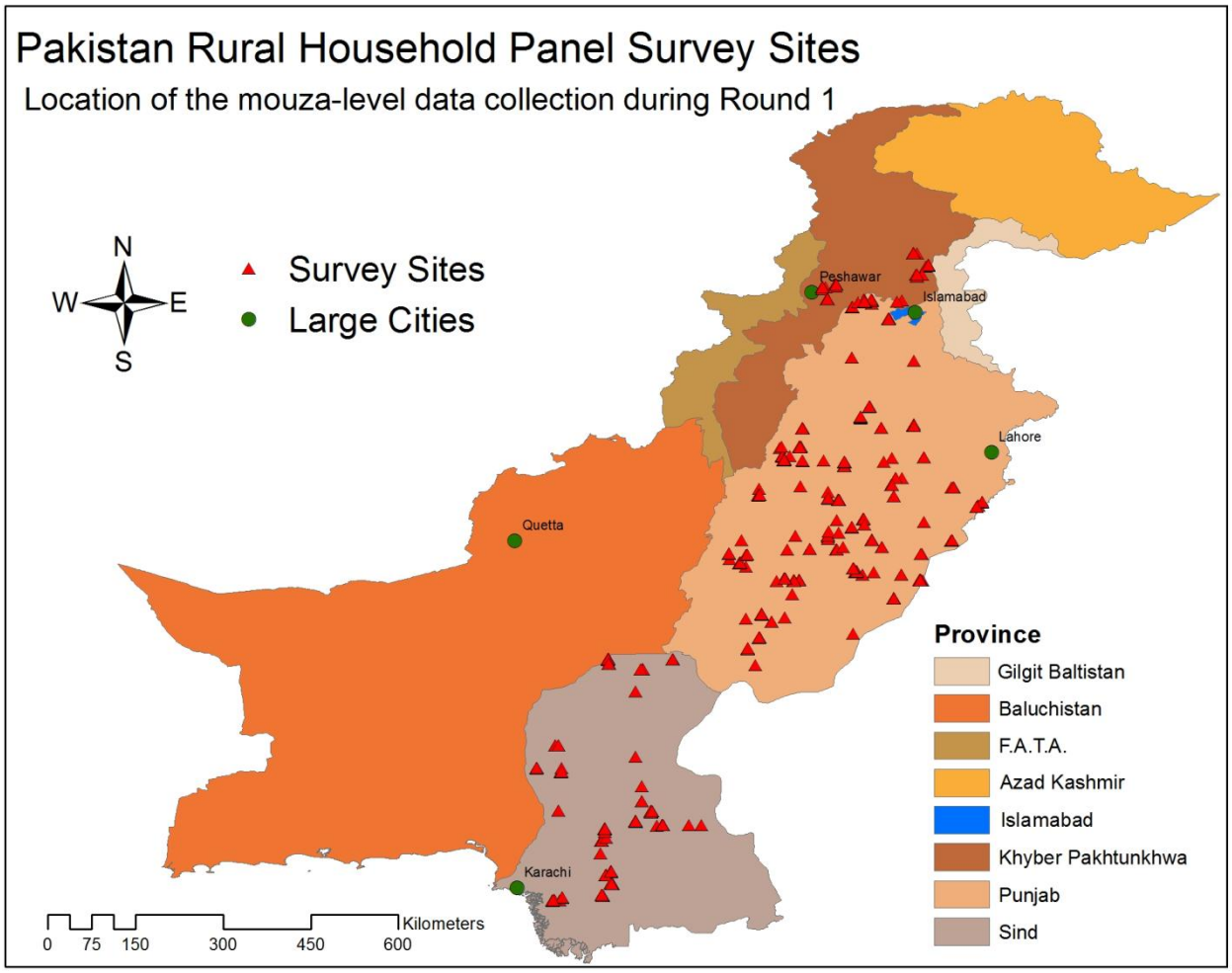
To prepare the sampling frame, all enumeration blocks classified as urban in the 1998 Census were removed. We also ignored all enumeration blocks where the estimated population is greater than 25,000 in 2011, since some areas that were rural in 1998 may have urbanized over the past 13 years.

2.1.1 Selection of districts and mouzas

The multistage stratified sampling technique was used. In the first stage, Probability Proportionate to Size (PPS)[5] was used to select districts. This method ensures that districts with more rural households have a greater chance of being selected. The proportion of rural households in each province determined the number of districts chosen from there. A total of 19 districts were selected from within the three provinces; 12 from Punjab, 5 from Sindh and 2 from KPK. Within each district, 4 mouzas as Primary Sampling Units (PSUs) were chosen using an equal probability systematic selection. In other words, the mouzas with smaller populations had the same probability of being selected as highly populated ones. The PPS at this stage would ensure each household had same probability of being in sample. However, that would bias our sample towards more populous mouzas, and possibly ignore the smallest mouzas. Since our survey aims to understand the dynamics of rural Pakistan, it is imperative to include mouzas of different sizes. The selected mouzas can be seen in Figure 2.1.

[5] This method ensures that the districts with more rural households have a greater chance to be selected.

Figure 2.1: Pakistan Rural Household Panel Survey Sites



Source: Authors' compilation based on (IFPRI/IDS 2012).

2.1.2 Selection of households

In each mouza, the enumeration teams conducted reconnaissance. They prepared a map of the village. A mouza is divided into enumeration blocks. Each block consists of maximum 200 households. One enumeration block was randomly selected. Households within each mouza or Primary Sampling Units (PSU) have been considered as Secondary Sampling Units (SSU). A complete household listing was conducted in this block, and 28 households were randomly selected from this list. There was no replacement for households that refused to participate in the survey. The number of selected PSUs and SSUs are reported in Table 2.1.

Table 2.1: Primary and Secondary Sampling Units of the Rural Household Panel Survey 2012

	PSU (Mouzas)	SSU (Households)
Punjab	48	1340
Sindh	20	560
KPK	8	224
Overall	76	2124

Source: IFPRI/IDS (2012).

2.1.3 Sampling weights

The sampling frame of the RHPS is based on the 1998 census document. It contains rural households in Punjab, Sindh and 11 districts of KPK.[6] The household sampling weights are calculated as the **inverse of the probability of being selected** in the sample, where

Probability of being selected in the sample = D * M * H,

where D = probability of household's **district** being chosen, M = probability of household's **mouza** being chosen, and H = probability of **household** being selected from within the mouza.

$$D = D_{BASIC} * D_{ADJ} \quad (1)$$

where D_{BASIC} = No of districts selected from the province * (No of households in the district / No of households in the province) and

D_{ADJ} = No of districts from the province in our sample / Proportion of households in that province

$$M = M_{SEL} / M_{TOT} \quad (2)$$

where M_{SEL} = No of mouzas selected from the district and M_{TOT} = Total no of mouzas in the district

$$H = H_{SEL} / H_{EA} \quad (3)$$

where H_{SEL} = No of households selected from the mouza and H_{MA} = No of households in the mouza

The final household weights are:

$$FW = W / SCA \quad (4)$$

where FW = final household weights, W = weights calculated above and SCA = raised number of households per province using variable weights / sampling frame number of households per province.

Using the weighted numbers, the RHPS-2012 covered 15,277,355 households, 66.4 percent in Punjab, 24.7 percent in Sindh, and 8.9 percent in KPK. Compared to the weighted sample of HIES-2010-11, the RHPS is over-sampled in Sindh and under-sampled in KPK (see Table 2.2). This may be due to the fact that our sampling frame for KPK includes only 11 districts of the province that are declared safe.

[6] The remaining districts of KPK were removed from the sampling frame because they were considered unsafe for surveying.

Table 2.2: Estimated Number of Households in RHPS-2012 and HIES-2010-11

	RHPS-2012	% of total RHPS SSUs	HIES-2010-11	% of total HIES SSUs
Punjab	10,143,181	66.4	8,249,162	65.3
Sindh	3,770,153	24.7	2,290,510	18.1
KPK	1,364,021	8.9	2,100,901	16.6
Total	15,277,355	100.0	12,640,573	100.0

Source: Authors' calculation based on IFPRI/IDS (2012) and HIES (2010).

For external validation of these household weights, we look at a variable in our survey and raise it to provincial levels using the weights. We compare these provincial estimates with an official source of data. We choose agricultural land as the variable, and will use the Agriculture Statistics of Pakistan (2010-11) for provincial estimates of agricultural land. It should be noted that since the weights are not constructed based on agricultural land, we do not expect these number to be exactly the same. Also, there may be reporting error on the agricultural land in the survey.

Our survey estimates that there are 29.5 million acres of land in Punjab, 8.6 million in Sindh and 3.1 million in KPK. This is the sum of all household managed plots in the three provinces. The Agriculture Statistics of Pakistan shows that there are 31.1 million acres of agricultural land in Punjab, 12.6 million in Sindh and 4.5 million in KPK. This is the sum of the *Net Area Sown* and *Currently Fallow* variables found in their report. It should also be noted that the KPK figure is based on all districts of KPK, not the 11 that were included in our sampling frame.

2.2. Survey Methods

The Rural Household Panel Survey was conducted during March-April 2012 in 19 districts of Punjab, Sindh and KPK. The preparations for this survey started in January 2012. The whole survey process consists of the following different stages:

- Questionnaire designing and preparation
  - Urdu translation
  - Urdu typing
  - Questionnaire printing
- Team selection
- Team training and pretesting
- Field survey
  - Data enumeration
  - Supervision
  - Monitoring
- Data entry program
- Data editing
- Data entry
- Data cleaning

2.2.1 Survey instruments

Six survey instruments were developed to collect the information. These included three household level questionnaires (two were designed to collect household information on various household and individual

level aspect by males and females separately, and the third was an aspirations questionnaire, conducted on a household member between ages 18-35), a community questionnaire, a price questionnaire, and a school questionnaire.

Household questionnaires (male, female, and aspirations)

Three different respondents from each household were surveyed; a male, a female, and a household member between the ages 18 to 35 years. Male and female questionnaires collected information on household and individual information on various economic, social, demographic, variables. In addition, an aspirations module was also a part of the male and female questionnaires. To examine the aspirations of young people in rural Pakistan, we conducted only the aspiration module with young individuals (between the ages 18 to 35 years).

Modules in male questionnaire

The male questionnaire gathered information from the head of the household, or from the most knowledgeable male member of the household.

- Roster (individual level information in the household)
- Education (including levels of schooling, current and available schooling, reasons for attending school)
- Agriculture (plot and crop level information on all production and sales operations)
- Assets (information on household, and farm assets)
- Housing (housing condition, type of ownership, access to facilities)
- Savings (household savings and their forms)
- Household expenditures (for items less frequently consumed by the household)
- Credit (credit information by type of lender and purpose by type of loan)
- Employment and migration (farm and nonfarm employment and in and out migration, and remittances)
- Economic shocks and coping strategies
- Participation in social safety nets
- Aspirations (details are given below in aspiration module)

Modules in female questionnaire

The female questionnaire gathered information from the spouse of the household head, or from the head in the case of female-headed households or from the most knowledgeable female of the household.

The main sections of the female questionnaire were:

- Roster (basic household information by individual)
- Education of female household members and all children (including levels of schooling, current and available schooling, reasons for attending school, and security concerns with girls' education)
- Time use (time spent in different household chore and paid or self-employment)
- Employment (details on paid farm and non-farm work, non-agricultural enterprises)
- Consumption and expenditure (food and non-food items frequently consumed by the household)
- Individual savings
- Purdah, safety, and mobility (practices and perceptions of safety)
- Level of household satisfaction with services and facilities

- Health (includes birth history, anthropometry of women and children, general health of household adults, and recent illnesses)
- Nutrition (infant and young child feeding practices and the use of micronutrients, nutrition knowledge of mothers, immunization and health status of young children, and nutrition-related prenatal care during pregnancy with the youngest child)
- Food security
- Participation in and perceptions of social safety net and NGO programs
- Level of Household Satisfaction with Services and Facilities
- Aspirations (details are given below in aspiration module)

Modules in aspirations questionnaire

This module was adapted from an instrument previously used in Ethiopia. The standard instrument contains four sections on:

- Overall aspirations;
- Psychology;
- Time Preferences, risk, and self-control; and
- Aspirations window

The variables in these sections collected information on individuals' locus of control, self-esteem, perceptions about poverty, subjective well-being, time preference, attitude towards risk, and the consequences for future-oriented behavior. In addition, several questions related to security and religiosity were also included in the survey instrument.

Community questionnaire

Data on community characteristics was collected through a focus group discussion with three key informants of the village. The selected mouza was considered as one community. In each mouza one questionnaire was conducted. This questionnaire collected the following information:

- Information about respondents
- Basic community characteristics and infrastructure
- Health services
- Credit services
- Governance
- Business environment and organizations
- Natural disasters
- Distance to important locations
- Nature of land ownership
- Information on watercourses

School questionnaire

The school questionnaire collected information on the physical and human infrastructure of schools in a community (mouza). In one community at least one questionnaire was conducted. The respondent of this questionnaire was a school principal, head master/mistress, or a senior school teacher. This questionnaire collected the following information:

- Information about the respondent

- Physical infrastructure of school
- Human infrastructure of school
- Cost of running a school

Price questionnaire

The price questionnaire was conducted to collect information on important consumption items. These data were collected from three different markets: village market, Union Council market, and district market.

The survey instruments went through several stages. Several documents, existing questionnaires, and other countries experiences were consulted. In addition, the questions were discussed with economists, sociologists, psychologists, and policy makers. The prepared questionnaires were tested in the field and the feedback was incorporated. Details are given in Appendix Table A2.

The instruments were translated into Urdu and to check the accuracy, the Urdu translation was translated back into English. A questionnaire manual was prepared that contained instructions about the survey and definitions of important terms used in the questionnaire.

2.3 Survey Implementation

Seventy-six enumerators and nineteen supervisors were selected from the sampled districts so that they could speak the local language and understand the local terminology. These enumerators were provided a two-part intensive training in Islamabad for 15 days. In the first part the supervisors were trained on all survey instruments and preparation of household listing to select the final sample. In the second part all enumerators and survey supervisors took part in the training process. Training was followed by two days of pretesting in the field. For this purpose, two different locations were selected. The survey instruments were finalized after incorporating the feedback from the training session and pretest exercise.

The survey was conducted by nineteen teams, each comprising two males, two females and a supervisor. Monitoring of the whole survey process was conducted by a team of monitors. A survey coordinator controlled all the field operations.

Roles and responsibilities

Supervisors were responsible for administering the survey in the districts assigned to them. This included preparing listing and maps of the selected mouza, selecting samples from the lists, and ensuring quality data were collected by enumerators of their team. Monitors were responsible for checking the functioning of teams assigned to them. This included surprise visits during the survey, spot checking of enumerators, and information validation. The survey coordinator was responsible for coordinating with teams, monitors and giving feedback to the researchers. His additional duties were to generate daily progress reports on the survey and to receive the incoming questionnaires from the field.

2.3.1 Data editing and entry

At the office level a team of questionnaire editors was responsible for receiving questionnaires, checking for any inconsistencies and errors and providing codes to the open ended questions. In case of significant errors, the team supervisor was asked to revisit the household to collect accurate information.

The database administrator was responsible for preparing a data entry program with proper checks. He was also responsible for hiring and training the data entry operators and providing the data files in SPSS

format to the researcher. The survey was completed on April 25, 2012 and data entry was completed on May 22, 2012. The data entry program was prepared in CSPro. A team of ten data entry operators were trained to enter the data. The CSPro files were converted into SPSS and STATA. Frequency distributions, summary statistics (means, variances, standard deviations), and graphs were used to identify the outliers in the data which were checked with the original questionnaires and discussed with enumerators.

3. DESCRIPTION OF COMMUNITIES

3.1 Basic Features of Selected Mouzas

As indicated earlier, the sample of the survey "Rural Household Panel Survey (RHPS)" was drawn from 76 revenue villages (mouzas) of 19 districts located in three provinces of Pakistan (Punjab, Sindh, and KPK). Of the total villages, 48 were from Punjab, 20 from Sindh, and 8 from KPK.[7] The village level information was collected through a community questionnaire. The respondents were the village key informants, such as, the village head, local government officials, the principal of a school etc. The main purpose of this questionnaire was to examine the institutional network and to understand the level of development of the village by collecting information on the availability and accessibility of the households to basic services and facilities, presence of institutions, such as, school, health centers, banks, post offices, etc. This questionnaire was designed to collect village level information that is common across households; for instance, the location of the village, its distance to the main market, agricultural input shop, cotton ginning factory, schools, hospitals, credit services, post offices, etc.

In each village, a focus group discussion with three key informants[8] was conducted to collect this information. One common answer to each question was recorded by the enumerators. This section presents the analysis of 76 community questionnaires.

3.2 Basic Characteristics of the Respondents (Key Informants)

The average age of the respondents was 45 years. The mean years of education were 11. Most of the respondents were educated. The proportion of never enrolled respondents was low (12.3 percent). Among the educated, a majority (59 percent) had education up to 10 years. The highest proportion of respondents was those who had completed 10 years of education (21 percent). Nearly 8 percent of the respondents had a Master's degree or professional qualifications (degrees). Most of the respondents were influential farmers. However, 10 percent were businessman, 20 percent were government officials, 5 percent were local councilors and 4 percent were school/college teachers or mosque imams. The mean years of holding these positions were 19 years. The main source of income of these respondents was crop profit, monthly salary, or business profit. The average period of residing in their respective villages was 42 years.

3.3 Type of Households

The key informants were asked to provide information on the type of households in their villages according to land holdings. It has been found that nearly 60 percent households did not own land. Among the owners, only 19 percent of the households owned more than 5 acres. Provincial breakdown indicates a larger incidence of landlessness in Sindh (67 percent), followed by Punjab (58 percent) and KPK (50 percent) (see Table 3.1).

[7] Appendix 1 provides the list of villages by province, district, and agro-climatic zones.

[8] The key informants are the persons who know the community well. They have knowledge about the people, services, and important events that have taken place in a community. A school teacher, police officer, mosque leader, or large influential landowners are considered key informants in Pakistan's rural setting.

Table 3.1: Percentage Distribution of Household by Agricultural Land Ownership (%)

	Landless	Up to 1 acre	1 to 2 acres	2 to 5 acre	More than 5 acres
Punjab	58.3	12.8	11.9	9.3	7.8
Sindh	67.3	8.7	8.5	7.2	8.3
KPK	49.9	25.3	10.0	8.5	6.4
Overall	59.7	13.0	10.8	8.7	7.8

Source: Authors' calculation based on IFPRI/IDS (2012).

3.4 Physical Infrastructure of Villages

In 2012, the average population of these villages was 2,068 individuals, comprising of 274 households. Population has grown at an annual rate of 4.6 percent in these villages during last five years. Highest growth occurred in the villages of KPK and lowest in Punjab during this period.

3.4.1 Structure of internal and external roads

The structure of internal roads in most of the villages was mud. This pattern holds across provinces. Other common structures were soling in Punjab, asphalt in KPK and concrete and asphalt in Sindh (see Table 3.2). The structure of most of the external roads in the villages of Punjab and Sindh was asphalt, whereas gravel roads were common in KPK. Some external roads in Sindh were mud and in KPK were mud and concrete. A majority of the selected villages were connected with nearest city through a main road.

Table 3.2: Structure of Internal and External Roads by Province (percent of villages)

	Structure of internal roads				Structure of external roads			
	Punjab	Sindh	KPK	Overall	Punjab	Sindh	KPK	Overall
Mud	52.2	75.0	50.0	57.1	16.7	30.0	12.5	19.7
Asphalt	2.2	12.5	25.0	7.1	70.8	55.0	25.0	61.8
Concrete	8.7	12.5	12.5	10.0	10.4	10.0	25.0	11.8
Gravel	2.2	-	-	1.4	0.0	5.0	37.5	5.3
Soling/brick	34.8	-	12.5	24.3	2.1	0.0	0.0	1.3
All roads	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculation based on IFPRI/IDS (2012).

3.4.2 Common mode of transport

Motorcycle, three-wheeler, four wheeler (e.g., suzuki van), and bus were found to be the most common modes of transport to go to the nearest city. Motorcycle, three-wheeler, and bus were common in Punjab whereas four wheeler, such as suzuki vans were commonly used in KPK. Mechanical transport has become more popular in recent years. The use of bullock cart was not found as a mean of transport in 2012 whereas 5 villages (2 in Punjab and 3 in Sindh) reported bullock cart a mode of transport to go to the nearest city in 2007. Motorcycle appeared to be the most common mode of transport in recent years (see Table 3.3).

Table 3.3: Common Mode of Transport Within and Outside the Village (percent of villages)

	Mode of transport to go to nearest city in 2007				Mode of transport to go to nearest city in 2012			
	Punjab	Sindh	KPK	Overall	Punjab	Sindh	KPK	Overall
Foot	6.3	20.0	0.0	9.2	6.3	15.0	12.5	9.2
Bullock Cart	4.2	15.0	0.0	6.6				
Bicycle	18.8	5.0	0.0	13.2	2.1	0.0	0.0	1.3
Three Wheeler	25.0	10.0	12.5	19.7	29.2	15.0	12.5	23.7
Four Wheeler	16.7	25.0	87.5	26.3	14.6	20.0	75.0	22.4
Bus	18.8	15.0	0.0	15.8	16.7	20.0	0.0	15.8
Motor Cycle	10.4	10.0	0.0	9.2	31.3	30.0	0.0	27.6
All modes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

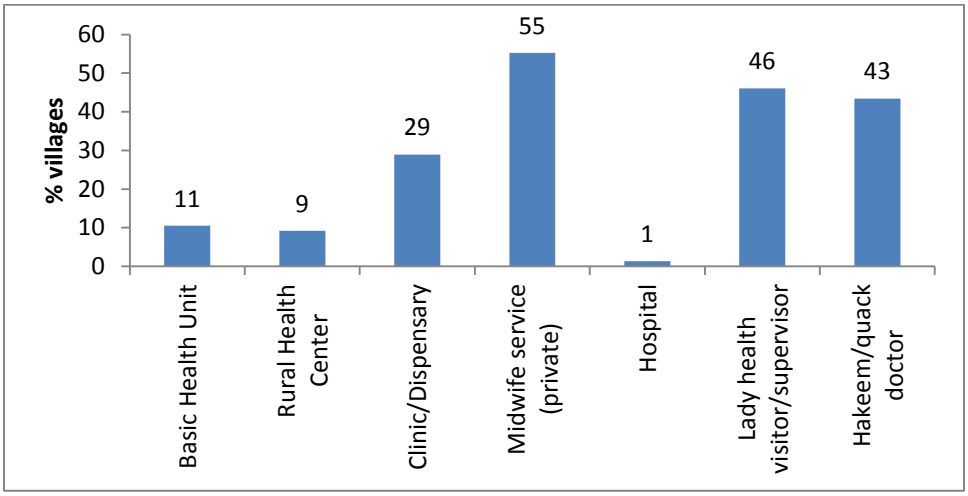
Source: Authors' calculation based on IFPRI/IDS (2012).

3.5 Access to Services

3.5.1 Access to health services

Out of 76 villages, basic health units (BHU) were available in only 11 percent of the villages, rural health clinics (RHC) in 9 percent villages, and clinics or dispensaries in 29 percent villages. Hospitals were found in only one percent of the selected villages. However, nearly half of the villages had the services of a mid-wife and lady health worker (LHW). Hakeems and quack doctors were available in nearly half of the villages (see Figure 3.1).

Figure 3.1: Proportion of Villages Reporting the Presence of a Health Facility



Source: Authors' calculation based on IFPRI/IDS (2012).

Although, some formal health facilities, such as, Basic Health Units, Rural Health Centers, and Hospitals were available in very few villages, most of these services are available within a radius of 10 kilometers

from these villages. Average distance to health facilities is relatively larger in KPK as compared to Punjab and Sindh (see Table 3.4)

Table 3.4: Average Distance (in kilometer) to Health Facilities Outside Village by Province

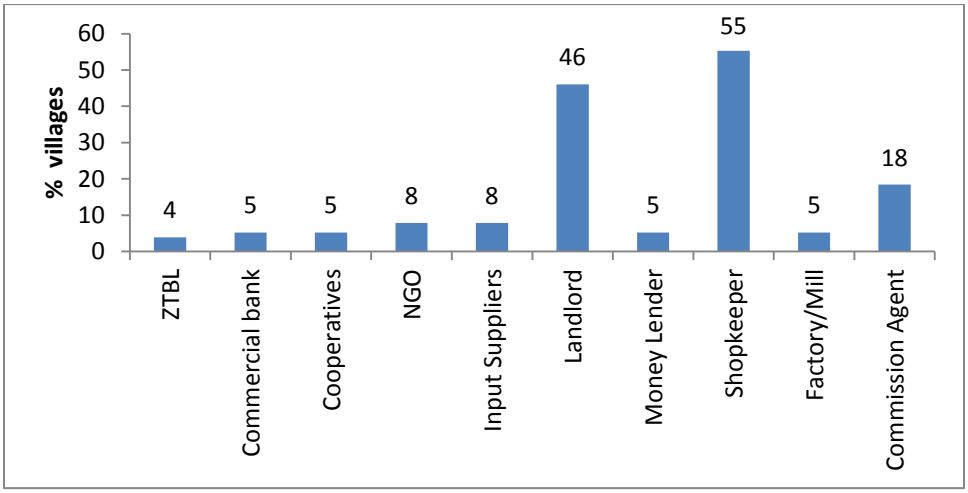
	Punjab		Sindh		KPK		Overall	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Basic Health Unit	7.0	5.7	7.8	5.3	8.4	7.4	7.4	5.7
Rural Health Center	9.5	6.6	11.6	7.3	12.3	13.0	10.3	7.7
Clinic/Dispensary	6.5	4.7	7.1	4.6	9.2	9.0	6.9	5.1
Midwife service (private)	5.9	4.7	9.2	8.9	14.3	7.1	8.1	7.2
Hospital	13.3	12.2	14.6	8.7	16.6	7.1	13.9	10.9
Lady health visitor/supervisor	6.5	4.2	8.2	6.2	4.5	2.1	7.1	5.0
Hakeem/quack doctor	4.7	3.1	9.6	11.0	11.0	8.4	7.5	8.2

Source: Authors' calculation based on IFPRI/IDS (2012).

3.5.2 Access to credit services

The key informants were asked about the presence of credit services, such as Zarai Taraqiyati Bank (ZTBL),[9] commercial bank, cooperative bank, NGO credit, input suppliers, large landlords, money lenders, factory, and/or commission agents. The data show that common sources of credit within villages were landlords, shopkeepers and commission agents (see Figure 3.2).

Figure 3.2: Proportion of Villages Reporting the Presence of a Credit Facility



Source: Authors' calculation based on IFPRI/IDS (2012).

The average distance to most of the credit services located outside village was 15 kilometers. A majority of input suppliers and money lenders were located within an average distance of ten kilometers from these villages. However, formal institutions, such as, ZTBL, commercial banks, cooperatives, NGOs, are

[9] This is the Agricultural Development Bank of Pakistan

more than 15 kilometers away from these villages. These distances are relatively larger in KPK as compared to Punjab and Sindh (see Table 3.5).

Table 3.5: Average Distance (in kilometer) to Credit Facilities Outside Village by Province

	Punjab		Sindh		KPK		Overall	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
ZTBL	18.6	9.5	16.5	7.7	19.6	10.6	18.2	9.1
Commercial bank	15.0	11.9	15.3	7.4	11.1	8.4	14.7	10.5
Cooperatives (registered)	17.3	12.6	16.1	7.9	27.4	22.3	18.3	13.4
NGO	25.2	19.6	15.3	7.4	26.9	21.2	22.4	17.5
Input Suppliers	14.3	12.7	12.8	8.8	9.4	7.9	13.4	11.4
Large landlord	14.8	12.1	9.9	5.7	25.4	25.4	15.7	14.8
Money Lender	11.7	8.5	10.5	5.6	25.1	22.6	12.9	11.1
Shopkeeper	9.9	10.8	11.2	6.7	11.3	9.0	10.5	9.0
Factory/Mill	18.5	13.6	13.9	8.0	31.1	26.4	18.9	15.4
Commission Agent /Beopari	12.0	8.1	12.7	8.9	15.3	9.3	12.6	8.4

Source: Authors' calculation based on IFPRI/IDS (2012).

3.5.3 Access to facilities

The availability of basic services and amenities indicates the level of development in a community. The key informants were asked about the presence of basic facilities in their communities. The data reported in Table 3.6 indicate that the mobile phone service was available in almost all the selected 76 villages. Nearly 93 percent of the villages were electrified. However, very few villages had access to natural gas. About 60 percent of the villages used cylinder gas. This proportion is 87 percent in KPK and 25 percent in Sindh. Immunization services were available in most of the villages. Very few villages had a sewerage system. Garbage collection system was available in only one village. Less than half of the villages had a health awareness program.

Table 3.6: Availability of Public Services in Selected Villages (percent villages)

	Punjab	Sindh	KPK	Overall
Village electrified	95.8	85.0	100.0	93.4
Availability to cylinder gas in village	68.8	25.0	87.5	59.2
Availability to sui gas in village	10.4	10.0	12.5	10.5
Availability to fixed-line phone service in village	22.9	10.0	87.5	26.3
Availability of cellular phone service in village	100.0	100.0	100.0	100.0
Availability of sewerage channel for waste water	25.0	10.0	0.0	18.4
Availability of garbage collection system in village	2.1	0.0	0.0	1.3
Availability of any immunization program in village	95.8	63.2	25.0	80.0
Availability of any family planning awareness program in village	45.8	47.4	87.5	50.7
Availability of any health awareness program in village	35.4	57.9	50.0	42.7

Source: Authors' calculation based on IFPRI/IDS (2012).

3.5.4 Distance to important locations

The distance from the village to important locations is crucial in determining the access to people of such facilities and amenities that do not exist in the village. The selected villages were located at an average distance of 22 kilometers from tehsil headquarters and 44 kilometers from the district headquarters (see Table 3.7). The selected villages of Punjab were located at an average distance of 52 kilometers from the district headquarters. This distance was 27 kilometers in Sindh and 37 kilometers in KPK. However, these villages were not very far from the city. The average distance to nearest city was 13 kilometers. These villages were at an average distance of less than 20 kilometers from commercial center, mandi (main market), weekly market, and commercial bank. The railway station was far away from these villages. These distances were considerably high in KPK (see Table 3.7).

Table 3.7: Distance (in kilometers) to Important Locations from Villages by Province

	Punjab		Sindh		KPK		Overall	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Distance to nearest city	13.6	8.8	11.7	7.2	12.4	7.0	13.0	8.2
Tehsil headquarter	21.9	11.1	18.6	8.5	31.9	20.0	22.3	12.2
District headquarter	51.8	26.8	27.1	13.8	36.5	17.2	44.4	25.5
Distance to nearest commercial center	17.1	13.5	17.1	21.4	11.8	7.0	16.5	15.4
Nearest Mandi	15.6	9.8	14.1	11.5	13.3	11.1	15.0	10.3
Nearest Weekly Market	17.2	15.6	16.5	13.8	13.9	8.4	16.7	14.5
Distance to nearest post office	6.2	6.5	11.6	8.3	8.9	7.5	8.1	7.5
Nearest Bank	12.6	9.5	14.6	7.7	12.5	7.5	13.1	8.8
Nearest railways station	21.3	14.7	29.9	25.0	68.5	76.2	28.5	32.3

Source: Authors' calculation based on IFPRI/IDS (2012).

3.6 Non-farm Business Environment

The key informants were asked about the nonfarm business environment in their villages. Most of them indicated an improvement in the business environment in their villages during the last five years. These responses were found consistent across provinces (see Table 3.8)

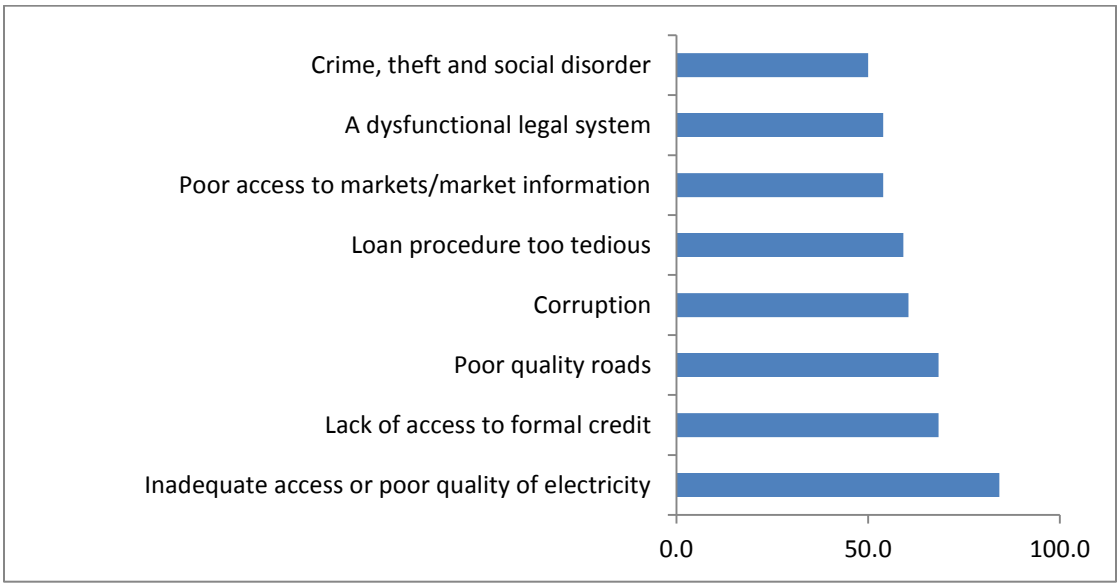
Table 3.8: Change in Nonfarm Business Environment During Last Five Years (percent of respondents)

	Punjab	Sindh	KPK	Overall
Better/more/higher	44.4	41.7	85.7	48.4
Same	22.2	33.3	0.0	21.9
Worse/less/lower	33.3	25.0	14.3	29.7
Total	100.0	100.0	100.0	100.0

Source: Authors' calculation based on IFPRI/IDS (2012).

In most of the villages there was no need for any permit or license to start a new business. However, several constraints were identified. Nearly 80 percent of the villages identified access to good quality of electricity as the major constraint for the growth of nonfarm business. Among other constraints lack of access to formal credit, poor quality roads, corruption, tedious loan procedures, lack of access to market and marker information, a dysfunctional legal system, and crimes were identified as major constraints (see Figure 3.3).

Figure 3.3: Major Business Constraints (percent of villages)

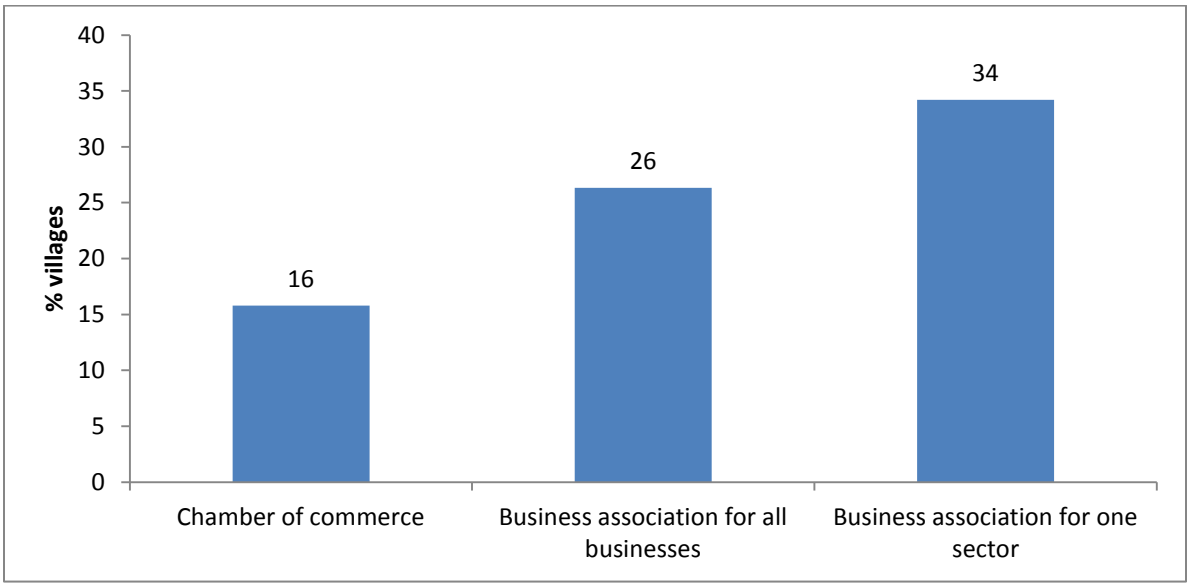


Source: Authors' calculation based on IFPRI/IDS (2012).

Ranking the constraints, the problem of electricity, access to formal credit, and corruption were identified as the three most important constraints to the growth of nonfarm business in the selected villages.

The information collected at the village level indicated a weak support for nonfarm business at tehsil level. Key informants were asked if there was any chamber of commerce, or business association for all types of businesses, or business association for one sector at tehsil level. None of the key informant in 11 villages knew about the presence of such associations at tehsil level. There was a tehsil level chamber of commerce for 12 villages. About 20 villages had a tehsil level large business association and 26 villages had a tehsil level sectoral level business association (see Figure 3.4). However, these associations were not effective in providing market information, raw materials, or the quality of goods. Their role in implementing government policies and plans was also not effective.

Figure 3.4: Presence of Chamber of Commerce or Business Associations at Tehsil Level (percent of villages)



Source: Authors' calculation based on IFPRI/IDS (2012).

Many services to support businesses were available at tehsil level. Among them insurance, legal and market services were available to more than 50 percent villages at tehsil level. Other services, such as information technology, management consulting, accounting, and engineering services were also available at tehsil level. Most of these services were located at a distance of one hour travel and therefore, accessible by the villagers. However, most of the businesses in villages were so small that they do not need such services.

3.7 Outside Linkages of Village

Nearly 75 percent of the villages in Punjab, 85 percent in Sindh, and 37 percent in KPK reported the presence of a factory/mill within 20 kilometers. On average, nearly 5 factories/mills were located in the 20 kilometer radius of these villages. The nearest factory was located at an average distance of 15 kilometers from the village; 14 kilometers in Punjab, 13 in Sindh, and 26 in KPK. On average, about 13 persons per village worked in these factories; 15 in Punjab, 8 in Sindh, and 10 in KPK. The factories/mills could attract more workers from villages if they are located within 5-20 kilometers radius.

3.8 Welfare Programs of Government or NGOs

Nearly 92 percent (70 out of 76) villages reported the presence of some welfare program (run by the government or NGO). In Sindh and KPK, all the selected villages had at least one program. In Punjab 6 villages did not have any such program. Most of the villages had at least one program in Punjab and KPK, while in Sindh, most of the villages had two programs. Of the 70 villages, 67 had BISP, 21 Watan card, 17 NRSP, and 7 other programs (e.g., PRSP, SRSP, AKRSP, Khushal Pakistan, Edhi Foundation). The coverage of BISP, NRSP, and other programs was higher in Punjab, whereas the watan card program was wide spread in Sindh (see Table 3.9).

Table 3.9: Presence of a Social Welfare Programs within Villages across Provinces (percent of villages)

	Punjab	Sindh	KPK	Overall
BISP	61.2	26.9	11.9	100.0 (67)
Watan Card	14.3	71.4	14.3	100.0 (21)
NRSP	82.4	5.9	11.8	100.0 (17)
Others	57.1	28.6	14.3	100.0 (7)

Source: Authors' calculation based on IFPRI/IDS (2012).

The key informants were asked to indicate the degree of importance of these programs in improving the welfare of village population. According to their responses, nearly 52 percent expressed that the role of BISP in improving the welfare of village population was 'not very important/unimportant'. The role of watan card and NRSP appeared important in improving the standard of living of rural people (see Table 3.10).

Table 3.10: Percentage Distribution of Villages by Program and their Degrees of Importance

	Extremely important	Important	Not very important	Unimportant	Overall
BISP	19.4	28.4	32.8	19.4	100.0
Watan Card	28.6	28.6	28.6	14.3	100.0
NRSP	41.2	17.6	29.4	11.8	100.0
Others	0.0	57.1	42.9	0.0	100.0

Source: Authors' calculation based on IFPRI/IDS (2012).

3.9 Development Programs During Last Five Years

The key informants were asked about the presence of any development programs in their villages during the last five years, such as, improvements in physical infrastructure, institutions, and basic amenities and facilities. Out of 76 villages, nearly two-thirds of the villages had at least one such program during the last five years. Most of these programs were related to improvements in school infrastructure or the connection to cellular or fixed phone lines. The villages of KPK indicated improvements in the water supply. About 23 percent of the villages in Sindh and 17 percent of the villages in Punjab indicated improvement in road conditions. Most of these programs had a positive impact on the business environment of the community (see Table 3.11).

Table 3.11: Percentage Distribution of Villages Reporting Development Programs in Past Five Years

Development programs for:	Punjab	Sindh	KPK	Overall
Improve road conditions (such as building a new road or improving road conditions)	16.9	23.1	5.0	16.9
Improve bridge conditions (such as build a new bridge or improve existing bridge conditions)	1.7	7.7	20.0	6.8
Improve market facilities (such as building a market or improving a markets conditions)	3.4	0.0	0.0	1.7
Improve school infrastructure(such as building a new school or improving old school facilities)	30.5	10.3	30.0	23.7
Improve water supply facilities (such as building a dam, connecting to water pipes, or other water infrastructure)	5.1	2.6	10.0	5.1
Improve health care facilities (such as building a clinic, hospital, or pharmacy, or expanding service availability)	11.9	7.7	0.0	8.5
Improve electricity service (such as connecting to service or improving the connection)	5.1	7.7	0.0	5.1
Connection to fixed line telephone/cellular phone services	20.3	23.1	35.0	23.7
Improve irrigation facilities	3.4	5.1	0.0	3.4
Home construction for flood affected households	1.7	12.8	0.0	5.1
All programs	100.0	100.0	100.0	100.0

Source: Authors' calculation based on IFPRI/IDS (2012).

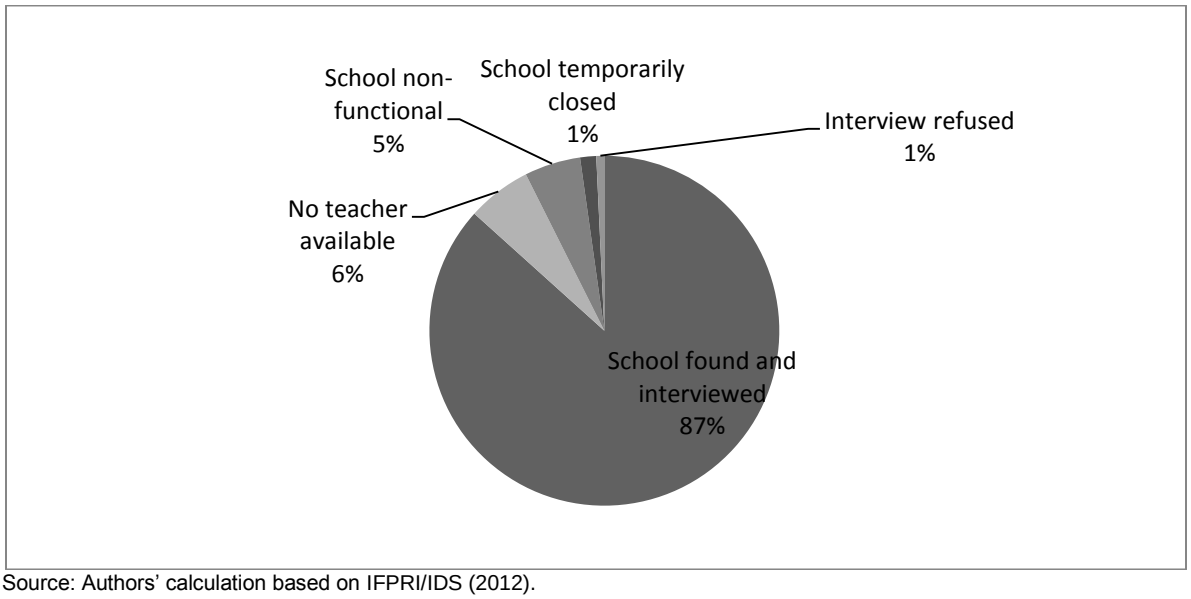
3.10 Natural Disasters

The data indicate that less than half villages faced some kind of natural disaster during the last five years. Among them crop failure was the most common disaster where nearly 46 percent of the villages faced this disaster. About 43 percent of the villages experienced floods, 14 percent drought, 9 percent fire, and 5 percent experienced some epidemic. Among all these, floods, drought, and crop failure affected more than three-fourths of the area of the village and had an adverse impact on the business activities of these villages.

4. ANALYSIS OF SCHOOL SURVEY

The school survey was conducted in schools of surveyed communities. Eight communities had no school at all. Enumerators identified 135 schools in the remaining 68 communities. Of these 87 percent were surveyed. Of the remaining 18 schools that could not be surveyed, 6 percent were not functional, no teacher was available in 6 percent schools, 1 percent schools were temporarily closed due to teachers training during the survey period, and 1 percent schools could not be surveyed because of the refusal of providing any information (see Figure 4.1).

Figure 4.1: Percentage Distribution of Schools Found



Source: Authors' calculation based on IFPRI/IDS (2012).

Most of these schools (14 out of 18) were located in Sindh. Finally, 117 schools were surveyed in 62 mouzas. This indicates that nearly 1.9 schools per mouza were surveyed. In Punjab, 84 schools were surveyed in 43 mouzas (2 schools per mouza), 13 schools were surveyed in 22 mouzas of Sindh (1.7 schools per mouza), and 6 schools in 11 mouzas of KPK (1.8 schools per mouza) were surveyed.

Urdu was the medium of instruction in a majority of schools. Very few schools in Punjab and KPK used their regional languages as a medium of instruction. However, in Sindh, 18 out of 22 schools used Sindhi as their medium of instruction. Of the total 117 schools, only 12 percent were private schools and they were mostly located in Punjab. Nearly 68 percent schools did not charge any tuitions fee. Costs other than tuition fee were not very high.

The data of schools revealed that out of 117 schools, 33 percent were girls' schools, 23 percent boys' schools, and 44 percent were co-education schools (see Table 4.1). The proportion of co-education schools was much higher in Sindh. A large number of villages in Sindh had only one school. These schools provided education to both boys and girls. It is interesting to note that the proportion of boys' schools is less than that of girls' in all provinces. This may be due to the fact that girls were allowed to go to boys' schools if no school for girls is available in the community. This explains why the number of co-

education schools was higher. In KPK, where Purdah is strictly observed, the proportion of co-education schools was lower.

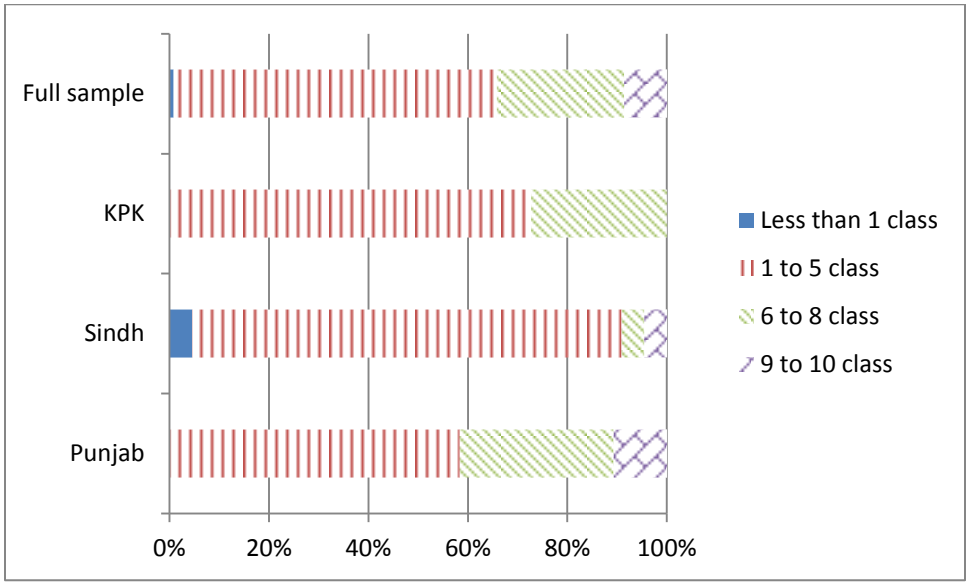
Table 4.1: Proportion of Schools by Type Across Provinces

	Punjab	Sindh	KPK	Overall
Only girls' schools	35.7	13.6	45.5	32.5
Only boys' schools	25.0	9.1	36.4	23.1
Co-education school	39.3	77.3	18.2	44.4
Total	100	100	100	100

Source: Authors' calculation based on IFPRI/IDS (2012).

Most of the schools (65 percent) were of primary level (1-5 class). The proportion of middle (6-8 class) and high (9-10) level schools were 26 percent and 9 percent respectively. The higher level schools had classes of lower levels. For example, primary schools had kachi, pacci (pre-school) classes, middle schools had primary classes, and high schools had the classes of middle and primary levels. In Sindh, 4.5 percent of the schools had only kachi and pacci classes. Villages in KPK did not have classes of higher level available (see Figure 4.2).

Figure 4.2: Proportion of Schools with Highest Level of Education



Source: Authors' calculation based on IFPRI/IDS (2012).

4.1 Physical Infrastructure of Schools

The data collected on the physical infrastructure of schools indicate that most of the schools had boundary walls. Almost all schools used chalk-boards for teaching. However, the infrastructure that is crucial for the quality of education was missing in these schools. For example, less than half of the schools had a playground. Libraries were available in only 15 percent of the schools, and scientific

laboratories were available in only 6 percent schools. Most of the schools had drinking water facility. However, the common sources were hand or motor pumps. Toilet facility was also available in most of the schools. However, in most of the co-education schools, separate toilets for girls and boys were not available. For details see Table 4.2.

Table 4.2: Physical Infrastructure of Schools (percent of schools)

	Punjab	Sindh	KPK	Overall
Schools having boundary wall	84.5	50.0	100.0	79.5
Schools using chalk board	96.4	100.0	100.0	97.4
Schools having play ground	58.3	27.3	0.0	47.0
Schools having library	17.9	4.5	9.1	14.5
Schools having laboratory	7.1	4.5	0.0	6.0
Type of drinking water facility in schools				
No facility	2.4	36.4	9.1	9.4
Piped water	9.5	4.5	36.4	11.1
Motor pump	54.8	9.1	36.4	44.4
Hand pump	33.3	45.5	18.2	34.2
Type of toilet facility in schools				
No facility	9.5	31.8	0.0	12.8
Only for boys	32.1	13.6	45.5	29.9
Only for girls	23.8	9.1	36.4	22.2
Separate for girls and boys	13.1	9.1	0.0	11.1
Combined for girls and boys	21.4	36.4	18.2	23.9
Schools having electricity	79.8	40.9	72.7	71.8

Source: Authors' calculation based on IFPRI/IDS (2012).

4.2 Student-Teacher Ratio

The data reveal that the average enrolment was 156 students per school; 39 at kachi-pacci level, 93 at primary level, 83 at middle level, and 86 at higher level. The average number of teachers was 5 per school. This gave a student-teacher ratio of 31 students per teacher (see Table 4.3). The data reveal that girls' enrolment was much lower than that of boys in all provinces, especially in Sindh and KPK. The number of female teachers was extremely low in Sindh. This may be one of the reasons of the larger number of co-education schools in this province. Despite low enrolment, few number of teachers resulted in a higher student-teacher ratio in Sindh as compared to other two provinces.

Table 4.3: Enrolment, Number of Teachers, and Student-Teacher Ratio by Province

	Enrolment[a]			Teachers[a]			Student-teacher ratio		
	Boys	Girls	Both	Male	Female	Both	Boys	Girls	Both
Punjab	107.3	66.4	173.7	2.9	2.9	5.8	37.6	22.6	30.0
Sindh	59.5	29.4	88.9	2.1	0.3	2.4	28.5	92.3	36.9
KPK	104.5	50.5	154.9	2.9	2.2	5.1	35.9	23.1	30.4
Overall	98.0	57.9	155.9	2.7	2.4	5.1	36.1	24.4	30.6

Source: Authors' calculation based on IFPRI/IDS (2012).
[a] Average per school

Looking across educational levels, Table 4.4 shows that the student-teacher ratio is higher at lower level of classes. This may be due to higher enrolment and few teachers at lower level. The data reveal that girls' enrolment was much lower than that of boys at each level. It is encouraging that the number of students at higher levels is comparable with those in primary level. However, it is important to note that these data are from Punjab and Sindh. None of the villages in KPK had higher level classes.

Table 4.4: Enrolment, number of teachers, and student-teacher ratio by level of education

Levels of education	Enrolment[a]			Number of teachers[a]			Student teacher ratio		
	Boys	Girls	Both	Male	Female	Both	Boys	Girls	Both
Kachi-pacci	23.8	15.0	38.9	0.5	0.5	1.0	49.1	29.8	39.3
1 to 5 class	57.4	35.5	92.8	1.4	1.2	2.7	39.6	29.3	34.9
6 to 8 class	55.9	26.7	82.5	2.2	2.0	4.2	25.4	13.7	19.9
9 to 10 class	58.9	32.7	91.6	2.4	1.8	4.2	24.1	18.4	21.7
Total	98.0	58.2	156.3	2.7	2.4	5.1	36.1	24.5	30.7

Source: Authors' calculation based on IFPRI/IDS (2012).
[a] Average per school

The average years of education was 12 for both male and female teachers. Most of the teachers had an experience of 7 years. Nearly one-fourth of the classes were held in open air. Very few girl students received any kind of scholarship or financial assistance.

5. ANALYSIS OF PRICE SURVEY

5.1 A Comparison of Prices at Different Market Levels

As mentioned earlier, the price questionnaire collected data on the prices of important food items and frequently used non-food items from three different markets; district, UC, and the village. In addition, the Government of Pakistan collects and publishes monthly data on various food and non-food items. Table 5.1 presents a comparison of these prices for the month of survey (April 2012) at district, UC and village level. This table shows significant price differentials across markets within a province. Prices of wheat flour, rice, milk, and milk products were significantly higher in district markets (or urban markets) than the UC and mouza markets (rural markets). No significant difference in the prices of pulses, fruits and vegetables, meat and poultry, edible oil and ghee, and sugar was observed. This table also shows significant provincial differences in the prices of food items. For example, price of milk was lowest in Punjab as compared to Sindh and KPK in all markets.

Table 5.1: Prices of Selected Food Items at District, UC, and Mouza levels in Punjab, Sindh, and KPK (Rs/Kg)

Food items	Prices in Punjab (Rs/Kg)				Prices in Sindh (Rs/Kg)				Prices in KPK (Rs/Kg)			
	District market	UC market	Mouza market	F-test	District market	UC market	Mouza market	F-test	District market	UC market	Mouza market	F-test
Cereals												
Wheat	26.6	26.4	26.0	0.61	27.8	27.5	26.4	1.13	23.0	23.0	23.7	0.294
Wheat flour	32.2	31.0	30.8	4.23*	32.2	32.1	31.2	1.01	29.6	29.2	29.7	0.499
Rice	86.4	81.4	78.2	2.93*	79.4	63.2	61.3	7.93*	69.6	64.6	64.4	0.088
Pulses												
Gram	113.2	110.6	110.3	0.16	110.3	107.4	97.0	1.28	119.4	120.0	123.1	0.064
Moong	125.8	127.7	130.3	0.49	138.4	135.5	138.6	0.09	110.6	111.9	115.0	0.982
Masoor	112.8	117.8	121.8	2.09*	123.8	125.3	104.4	1.72***	87.5	85.8	86.7	0.074
Milk and Milk Products												
Milk	56.1	49.8	45.7	22.84*	59.3	58.0	55.9	0.361	64.4	64.4	62.3	0.125
Yogurt	65.2	62.7	59.9	3.99*	71.2	71.8	67.5	0.534	64.0	62.0	62.0	0.286
Oil and Ghee												
Banaspati ghee	180.6	181.8	182.3	0.20	174.4	170.6	167.9	1.238	170.6	172.1	172.1	0.022
Cooking oil	182.7	186.9	187.5	1.03	182.9	181.7	174.1	1.048	166.8	169.8	172.2	0.295
Meat and Poultry												
Beef	234.7	235.2	234.5	0.01	232.2	242.3	218.6	1.453	302.0	302.0	230.0	1.455
Mutton	458.1	462.8	445.5	0.86	393.7	394.6	458.3	2.689	428.0	417.5	380.0	2.147
Chicken	226.5	230.2	233.0	0.49	228.2	233.8	238.9	0.537	161.7	167.5	169.2	0.034
Vegetables and Fruits												
Potatoes	19.6	20.9	20.4	0.33	18.9	19.6	20.0	0.505	21.7	22.4	23.6	0.705
Onion	30.8	32.8	32.5	0.98	24.6	24.6	26.4	0.309	30.0	31.0	32.1	0.078
Banana	48.3	51.3	51.9	0.59	38.4	40.4	41.0	0.026	43.5	47.6	50.0	2.130
Sweeteners												
Sugar	56.6	57.2	58.0	1.01	62.0	60.4	59.6	0.790	55.1	55.9	58.6	11.051

Source: Authors' calculation based on IFPRI/IDS (2012).

Notes: *, **, *** denote statistical significance at the one percent, five percent and ten percent levels, respectively.

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Appendix 1 Selected Sample

Table A.1: Selected sample of Rural Household Panel Survey

Province	Districts	Mouzas
Punjab	Attock	SHERANI
		URTAKPUR (KAMRA)
		KALU KHURD
		QUTBAL
	Sargodha	HARYANA
		SALEEM ABAD
		BUNGA SIGHWAL
		CHAK NO 118/S.B
	Faisalabad	CHAK 077/RB LOHKA KALAN
		CHAK 223/GB BHOJAIN
		CHAK 530/GB NARANGWAL
		CHAK 496/GB PANJLASA
	Jhang	CHAK SARKAR BAHI WAL
		WIJHI
		CHAK NO.007/2 THAL JANUBI
		UMRANA SHUMALI
	Kasur	GARA SINGH WALA
		BHUNE KI HITHAR
		DHAN [DHON]
		CHAK NO 027(DHOLAN GANGA)
	Multan	BOHAR
		CHAK NO 075/M
		KEKERY
		CHAK NO 001/GULZAR
	Khanewal	CHAK NO 020/V
		CHAK NO 137/16-L
		CHAK NO 004/8-R
		CHAK NO 053/10-R
	Vehari	SHAH PUR SANI
		CHIADHAR BHINDAH
		CHAK NO 172/E.B.
		CHAK NO 471/E.B.
	Rahim Yar Khan	CHAK NO 018/ABS
		FAZIL PUR
		AMIR PUR
		CHAK NO 029/P.
	Bahawalnagar	CHAK NO 181/7-R
		NOOR JAHANIAN

		CHAK NO 122/MURAD
		MASSA SINGH KOHNA
	D.G.Khan	CHAK JALUHAR
		HAN THAL
		CHIT SARKANI
		JAN PUR
	Bhakkar	CHAK NO 053/T.D.A.
		CHAK NO 064/T.D.A.
		DAGGAR SHADA NO.2
		BARANGA N0 3
Sindh	Hyderabad	NARKI
		CHARO
		SAEED PUR
		KACHO KHANOTH
	Sanghar	ONATHADA
		SAMATHRI
		BOCHNA
		LAKHA
	Dadu	KHUDABAD JAGIR
		ANDHEJI-KASI
		SHORI JAGIR
		GHARO
	Thatta	SHAIKH HAJI TURABI
		UHEB
		TALLI
		CHARBATTI
	jaccobabad	DASTI
		PHATANWAH
		SORAH
		HAZARO
KPK	Nowsehra	CHAK AGRA
		RAKH SARKAR
		KALANJAR
		TOHA GHARIB PURA
	Mansehra	RATTIAN
		HUSSANIAN
		LACHI MANG
		HASSARI

Source: IFPRI/IDS (2012).

Table A.2: Locations of pilot test and pre-test of the survey instrument (Round 1)

Total Fields	District	Tehsil	UC	Mouza	Village	Date
Pilot Test 1	Attock	Jand	Not Available	Not Available	Not Available	01/04/2012
Pilot Test 2	Faisalabad	Sumandari	108	479 GB	473 GB	27/1/2012
Pre-Test 1	Islamabad	Islamabad	Sehala	Chak Kamdar	Chak Kamdar	03/01/2012
Pre-Test 2	Attock	Hassanabdal	Pind Mehri	Sultanpur	Hanifabad	03/04/2012

Source: IFPRI/IDS (2012).

Table A.3: Activity-wise survey schedule is given below:

Activity	Start date	End date
Training	February 26, 2012	March 8, 2012
Enumeration	March 15, 2012	April 25, 2012
Editing	April 15, 2012	May 20, 2012
Data entry	April 29, 2012	May 22, 2012
Data cleaning	May 28, 2012	July 27, 2012

Source: IFPRI/IDS (2012).

Appendix 2: Concepts and Definitions

A brief explanation of the key concepts and definitions used in the report are as follows.

Beopari is a commission agent .

District is the third order of administrative division, below provinces and divisions. There are 114 districts in Pakistan.

Formal source of Credit are those sources that provide credit in a transparent and regulated manner. Some formal sources of credit include commercial banks, ZTBL, Microfinance banks, etc.

Imam is the leader of a mosque.

Informal source of Credit are those sources that provide credit without any legal and regulated procedures. Some informal sources of credit include landlords, input dealers, money lenders, friends/relatives/neighbor, etc.

Mouza or Deh is a demarcated territorial unit for which separate revenue record including a cadastral map is maintained by the provincial revenue departments. One Mouza / Deh may contain one or more population settlements or may have no settlement.

Multidimensional Poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living in marginal or fragile environments, without access to clean water or sanitation.

Non-agricultural Enterprises are those in which main proprietor of the business is a household member. Such as cobbler, tailor, handicrafts etc.

Probability Proportionate to Size is a sampling technique for use with surveys or mini-surveys in which the probability of selecting a sampling unit (e.g., village, zone, district, and health center) is proportional to the size of its population.

Province is a principal administrative unit of Pakistan. Pakistan have four provinces (Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan) and two territories (Federally Administered Tribal Areas, and Islamabad Capital Territory).

Reconnaissance Survey represents a type of field survey that is often used to gather initial information regarding the presence or absence of historic properties within a project area.

Small Farmers include farmers who cultivate land up to 12.5 acres but more than 5 acres.

Student-Teacher Ratio is the number of students who attend a school or university divided by the number of teachers in the institution.

Tehsil is the fifth administrative unit of Pakistan and third lowest tier of local government. The term tehsil is generally used except in Sindh where the term "Taluka" predominates. As an entity of local government, it exercises certain fiscal and administrative power over the villages and municipalities within its jurisdiction. It is the ultimate executive agency for land records and related administrative matters. Its chief official is called the tehsildar or less officially the talukdar.

Union Council is the sixth administrative unit of government and fourth tier of local government. Union councils were responsible for local agricultural and community development and for rural law and order maintenance; they were empowered to impose local taxes for local projects.