

Gender Dimensions of Rural Non-Farm Employment in Pakistan



SPDC

Gender Research Programme
Research Report No.7

SOCIAL POLICY AND DEVELOPMENT CENTRE

GENDER DIMENSIONS OF RURAL NON-FARM EMPLOYMENT IN PAKISTAN

SPdC

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FOREWORD

Social Policy and Development Centre (SPDC) realising the importance of integrative research initiated a series of Research Reports under its Gender Research Programme (GRP) in the year 2009. The areas identified for research are wide-ranging developmental issues existing in Pakistan. The overall objective of the research programme identified will help place gender on the map of policy-making in the country by creating awareness of gender implications of social and macroeconomic policies with a particular focus on women, work, and poverty. It will also help develop quantitative and qualitative data, including gender disaggregated statistics and indicators that will help map changes in gender roles and their access to equal rights and opportunities which consequentially will help bring the much-needed paradigm shift in the existing social structures; add to the technical research in Pakistan on the gender aspects of social and macroeconomic policies; factor in gendered perspectives in 'hardcore' economic issues as well as social 'progress-engine' concepts of development, primarily by undertaking pioneering research and policy analyses.

The series of Research Reports produced, hopefully, will help open avenues for further research on issues of development, equal opportunities, equitable policies and all other issues of gender equality and equity.

Gender differentials of rural non-farm employment in Pakistan is the seventh in the series. The study evaluates the gender differences in terms of patterns, determinants and the extent of participation in the rural non-farm sector in diverse economic and ecological settings using a primary household survey of about 1200 rural households in the four provinces of Pakistan. These households were randomly selected from different agro-climatic and cropping zones and were enumerated using a comprehensive set of living standard measurement modules.

Non-farm sources of income are important for the rural poor because of the highly seasonal nature of agricultural employment, water shortage and droughts. Despite the importance of rural non-farm sector in terms of employment generation, income diversification and security, the sector is relatively under-researched mainly due to the non-availability of primary data. Moreover, gender dimension of non-farm employment and non-farm activities has not been investigated in the context of Pakistan.

Findings of this research will facilitate policymakers to enhance the sector's role by diversifying job and income-earning opportunities, particularly for the landless, wage earners and women in rural areas. The information would also help to increase awareness regarding financial, culture and other constraints for expanding non-farm sector, especially for women.

SPDC is thankful to the Royal Norwegian Embassy in Pakistan for funding its Gender Research Programme.

Prof. Dr. Khalida Ghaus
Managing Director

CONTENTS

1. Preamble	2
2. Overall Description of the Rural Non-farm Sector in Pakistan	3
3. Major Survey Findings	4
3.1 Participation in Rural Non-farm Income Generation Activities	5
3.2 Wage Discrimination	9
3.3 Women Empowerment through Non-farm Income Generation Activities	9
3.4 Constraints to Participate in Non-farm Work	11
4. Statistical Explanation of Non-farm Work Participation	13
5. Summary and Conclusion	17
Appendix A: Rural Household Survey Methodology	24
Appendix B: Women Empowerment Variables	27
References	29

List of Tables and Figure

Table 2.1 Distribution of Rural Employed Labour Force	3
Table 2.2 Trends in Rural Non-farm Workforce	4
Table 3.1 Participation in Non-farm Activities Across Agro-Climatic Zones	5
Table 3.2 Women's Empowerment - Average Score	10
Table 3.3 Perceptions of Respondents about Constraints Across Provinces	12
Table 3.4 Explanatory Variables to Determine Participation in Non-farm Income Generation Activities	14
Table 3.5 Estimated Results of Logistic Regression	15
Table A.1 Selected Districts for Household Survey across Agro-Climatic Zones	25
Table A.2 Provincial Distribution of Sample Households	26
Table A.3 Un-weighted and Weighted Sample	26
Figure 2.1 Female Rural Non-farm Workforce	4
Figure 3.1 Incidence of Participation in Non-farm Wage-Employment	7
Figure 3.2 Non-farm Wage-Employment - Major Employers	7
Figure 3.3 Non-farm Self-Employment across Provinces	7
Figure 3.4 Non-farm Self-Employment - Major Activities	8
Figure 3.5 Children Participation in Non-farm Employment	8
Figure 3.6 Wages Reported in Non-farm Wage Employment	9
Figure 3.7 Women Empowerment - Mean Score	9
Figure 3.8 Women Empowerment Across Provinces: Mean Scores out of 45 Maximum Points	11
Figure 3.9 Constraints in Participating Rural Non-farm Activities - Respondents' Perceptions	11

**GENDER DIMENSIONS OF
RURAL NON-FARM EMPLOYMENT
IN PAKISTAN**

GENDER DIMENSIONS OF RURAL NON-FARM EMPLOYMENT IN PAKISTAN

1. PREAMBLE

The literature on non-farm income or income diversification in the rural context is rife with definitional problems and inconsistencies. Generally, non-farm¹ refers to those activities that are not primarily related to agriculture, livestock, forestry or fisheries. Hence, the Rural Non-farm Economy (RNFE) may be defined as comprising all those activities which generate income for rural households either through waged work or self-employment (Davis, 2004). The RNFE houses a highly heterogeneous collection of trading, agro-processing, manufacturing, commercial and service activities. The scale of activity varies enormously, from part-time self-employment in household-based cottage industries to large-scale agro-processing and warehousing facilities. Often highly seasonal, rural non-farm activity fluctuates with the availability of agricultural raw materials and changes in rhythm with household labour and financial flows between farm and non-farm activities. Moreover, across diverse economic and ecological settings the composition of non-farm activities differs considerably due to widely variable natural resources, labour supply, location, history, traditions, and institutional and infrastructure endowments.

Non-farm sources of income are important for the rural poor because of the highly seasonal nature of agricultural employment, water shortage and droughts. The sector provides employment, household income diversification and security, market linkages for agriculture, and thus has immense potential to contribute to growth, employment generation and poverty alleviation in the developing world.

Despite its importance, the rural non-farm sector is relatively under-researched regarding its role in the broader development process. In most countries including Pakistan, adequate assessment of size, composition and structure of activities of this segment of the economy has not been made. The data limitation explains, partly, neglect of research endeavors to focus on this important sector. Moreover, one area in the non-farm literature of Pakistan that has not been investigated yet is the gender dimension of non-farm employment and non-farm activities.

This research evaluates the gender differences in terms of patterns, determinants and the extent of participation in the rural non-farm sector in diverse economic and ecological settings using a primary household survey of about 1200 rural households in the four provinces of Pakistan. These households were randomly selected from different agro-climatic and cropping zones and were enumerated using a comprehensive set of living standard measurement modules².

Specifically, gender role is investigated in the non-farm rural sector by evaluating household income, employment, time-use pattern, and other aspects of human and social development.

Findings of this research will facilitate policymakers to enhance the sector's role by diversifying job and income-earning opportunities, particularly for the landless, wage earners and women in rural areas. The information would also help to increase awareness regarding financial, culture and other constraints for expanding non-farm sector, especially for women. Moreover, the research may facilitate targeted public intervention for rural infrastructure and for making area-specific regional policies (e.g. irrigated v/s barani, agro-climatic zones, etc.) for generating non-agriculture jobs in the rural economy of Pakistan.

The report is organised as follows: Section 2 describes the participation rates in farm and non-farm activities at the macro (national and provincial) level using Pakistan Labour Force Surveys, while major findings from rural household survey in terms of gender aspects of rural non-farm employment across diverse economic and agro-climatic zones are presented in Section 3. The determinants of participation in non-farm work are statistically evaluated in Section 4, while Section 5 concludes the report with the summary and recommendations.

2. OVERALL DESCRIPTION OF THE RURAL NON-FARM SECTOR IN PAKISTAN

Pakistan Labour Force Survey (LFS) provides information regarding non-farm employment at national and provincial levels. According to the latest LFS (2010-11), about 61 percent of the rural labour force of Pakistan is engaged in agricultural activities, while 39 percent of the employed rural population reported working in the non-agriculture sector (Table 2.1). The table also shows that about 14 percent of female employed labour force is engaged in activities other than agriculture. The majority (8 percent) of the female labour force is working in the manufacturing sector, whereas about 4 percent are reported working in education and community services sectors. On the contrary, about 48 percent rural male employed labour force is engaged in non-agriculture activities, of which about 30 percent reported working in trade, manufacturing and construction sectors.

	Male	Female	Overall
Agriculture			
Agriculture, Forestry, Fishing	52.12	85.47	61.19
Non-Agriculture	47.92	14.43	38.81
Trade	12.08	1.15	9.10
Manufacturing	9.11	8.00	8.81
Construction	9.67	0.16	7.08
Transport and Communication	5.47	0.05	4.00
Education	2.97	2.46	2.83
Community and Social Services	2.25	1.57	2.06
Public Administration	2.60	0.05	1.91
Health and Social Work	0.94	0.99	0.95
Others	2.83	0.00	2.06

Source: Pakistan Labour Force Survey, 2010-11

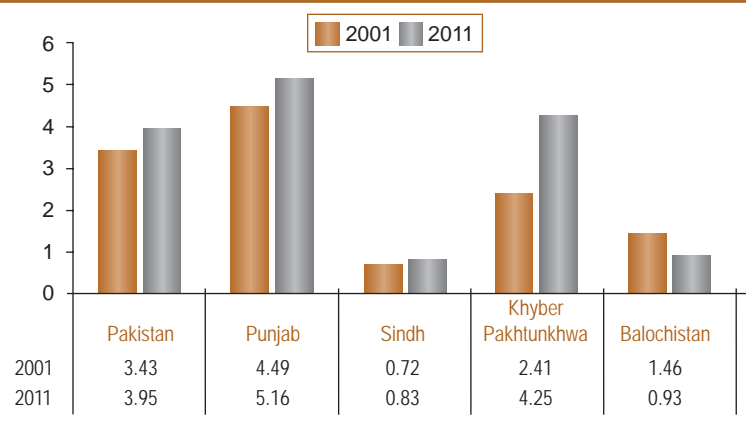
Table 2.2
Trends in Rural Non-farm Workforce
 [As a Percent of Total Rural Employed Labour Force]

	2001		2011		Changes in Non-farm Workforce (%)	
	Male	Female	Male	Female	Male	Female
Pakistan	37.56	3.43	34.64	3.95	-7.78	15.29
Punjab	37.65	4.49	34.81	5.16	-7.55	14.99
Sindh	29.76	0.72	23.79	0.83	-20.04	15.92
Khyber Pakhtunkhwa	46.20	2.41	51.48	4.25	11.44	76.37
Balochistan	39.87	1.46	32.23	0.93	-19.16	-36.48

Source: Pakistan Labour Force Survey, 2010-11 and 2000-01

Trends in rural non-farm workforce (10 years and above) participation during 2001 and 2011 are furnished in Table 2.2 and Figure 2.1. The evidence of declining trends of male participation in non-farm activities is shown in the table. Barring the province of Khyber Pakhtunkhwa, all provinces are showing a declining trend in non-farm work participation. In terms of magnitude, a decline of about 20

Figure 2.1
Female Rural Non-farm Workforce
 [As a Percent of Total Rural Employed Labour Force]



Source: Pakistan Labour Force Survey, 2010-11 and 2000-01

percent is found in Balochistan and Sindh, and 8 percent in Punjab during the period 2001-2011. The province of Khyber Pakhtunkhwa is showing a rise of about 11 percent in the participation rate. On the contrary, female participation in non-farm work is showing an upward trend in Punjab, Sindh and Khyber Pakhtunkhwa. The highest growth is observed in Khyber Pakhtunkhwa where the female non-farm workforce has been almost doubled during the period 2001-2011. The assessment of the distinct trend in Khyber Pakhtunkhwa is an important research area to explore the incentives and opportunities to promote non-farm work activities, especially for women.

3. MAJOR SURVEY FINDINGS

This section reports rural household survey findings³ in terms of extent and nature of participation in non-farm activities, participation of child labour and wage differentials across gender. Moreover, an attempt is also made to depict the impact of non-farm work on women's (wife) economic, social

and other empowerments. Respondents' perceptions with respect to constraints to participate in non-farm income generation activities are also collated in this section.

3.1 Participation in Rural Non-farm Income Generation Activities

Rural households decide to participate in the rural non-farm sector driven by a set of 'Pull' and 'Push' factors. Pull factors, such as better returns in the non-farm sector relative to the farm sector, can typically be found in dynamic agricultural regions⁴ (Haggblade, Hazell and Reardon 2005). In the context of Pakistan, two agro-zones 'Rice/Wheat Punjab' and 'Mixed Punjab' represent dynamic agriculture regions. These zones are located in northern irrigated areas of Punjab. Conversely, zones without dynamic agriculture are represented by 'Cotton/Wheat Punjab' and 'Low intensity Punjab' in Punjab and all agro-zones of Sindh. The major characteristics of these regions include non-commercialisation of agriculture, feudal system, landlessness and skewed land distribution, absence of proper land management, etc. Push factors (falling agriculture productivity, low return from agriculture and declining household income) in these zones in general dominate the decision making for participation in non-farm activities. The remaining agro-zones are essentially agriculture 'distress' regions which include 'Barani Punjab', almost all of Khyber Pakhtunkhwa, and the entire province of Balochistan. Here also push factors provide incentives to participate in non-farm work⁵.

Table 3.1
Participation in Non-farm Activities Across Agro-Climatic Zones
[As a percent of respective 10 years and above population]

Agro-Climatic Zones	Wage Employment			Self Employment		
	Overall	Male	Female	Overall	Male	Female
Overall	20.28	35.52	3.99	5.94	8.46	3.24
Rice/Wheat Punjab	18.31	32.75	3.30	8.44	16.55	-
Mixed Punjab	21.88	40.09	2.31	6.03	11.21	0.46
Cotton/Wheat Punjab	17.96	25.74	9.06	10.39	15.18	4.91
Low Intensity Punjab	16.70	26.05	5.43	6.68	5.14	8.53
Barani Punjab	24.58	42.32	6.38	4.62	9.13	-
Cotton/Wheat Sindh	16.04	29.60	1.19	1.70	3.25	-
Rice/Other Sindh	21.88	39.24	4.19	10.18	8.54	12.26
Khyber Pakhtunkhwa	26.86	48.00	2.80	1.47	2.62	0.18
Balochistan	14.32	32.02	0.59	2.97	6.65	0.12

The estimated participation rates from rural household survey in non-farm activities are produced in Table 3.1. The table shows distribution of non-farm wage employment and self-employment across agro-climatic zones⁶ and gender. The table reveals that participation rates in non-farm activities through wage employment in Punjab are slightly higher in dynamic agriculture zones as against zones without a dynamic agriculture. About 18 to 22 percent incidence of wage

employment is estimated in 'Rice/Wheat Punjab' and 'Mixed Punjab' zones as compared with 17 to 18 percent in 'Cotton/Wheat Punjab' and 'Low intensity Punjab'. However, 'Barani' Punjab, as expected is showing relatively higher rate. About 25 percent of the labour force is engaged in non-farm wage employment.

It is evident from the table that female participation through wage employment is quite high in 'non-dynamic' agriculture zones of Punjab. About 2 to 3 percent wage employment is reported by female labour force in dynamic zones, while 5 to 9 percent female are reported working as a wage employer in remaining zones of Punjab which are essentially 'non-dynamic' or agriculture 'distress' areas.

The province of Sindh is divided in two agro-climatic zones: 'Cotton/Wheat' and 'Rice/Other'. According to the table, 16 and 22 percent labour force is reportedly working in the non-farm wage sector. The provinces of Khyber Pakhtunkhwa and Balochistan, which have miniscule shares in agriculture GDP of Pakistan, are showing participation rates of 17 and 14 respectively through wage employment.

Female participation rates through wage employment in Sindh, Khyber Pakhtunkhwa and Balochistan are quite low. These regions reveal non-dynamic agriculture and/or agriculture 'distress' areas. However, apparently 'push' factors for women are not effective in these regions due to a lack of employment opportunities in the neighborhood, underdevelopment, illiteracy and cultural constraints.

Overall, the incidence of rural non-farm self-employment activities is very low. According to the table, about 6 percent (8 percent male and 3 percent female) respondents reported self-employment activities.

Generally, the rate of non-farm activities through self-employment is quite high in Punjab, especially in agriculture dynamic zones. An insignificant percentage of self-employment is reported in Khyber Pakhtunkhwa, Balochistan and the 'cotton/wheat' zone of Sindh. The phenomenon indicates the linkages between agriculture and non-farm self-employment activities. It is, however, surprising that female share⁷ in self-employment in agriculture dynamic zones is very low as compared with non-dynamic zones in Punjab.

Figure 3.1 displays incidence of participation in non-farm wage employment across provinces and gender. Barring Khyber Pakhtunkhwa, no significant differences exist with respect to the

male participation rate. It is evident from the table that about 32 to 35 percent of the rural male labour force is engaged in non-farm employment in three provinces, whereas the percentage is quite high (48 percent) in Khyber Pakhtunkhwa. Nonetheless, sharp differences are evident in the case of female non-farm wage employment. Highest (5.37) female participation rate is observed in Punjab, while the lowest (less than one percent), as expected is found in Balochistan.

Distribution of non-farm wage employment across major employers is portrayed in Figure 3.2. It is evident from the table that the private sector is the main employer offering non-farm wage activities. Almost 83 and 63 percent of male and female wage employees respectively are working in the private sector (manufacturing, construction, trade and services), whereas about 15 percent of wage workers, irrespective of gender are in the public sector (mostly in the education department). Female employees are also reported working in NGOs or as domestic employees.

Information regarding incidence and nature of non-farm self-employment is furnished in Figures 3.3 and 3.4. It is estimated that an overall 8 and 3 percent of male and female rural labour force respectively is engaged in self-

Figure 3.1
Participation in Non-farm Wage-Employment
[As a percent of respective 10 years and above population]

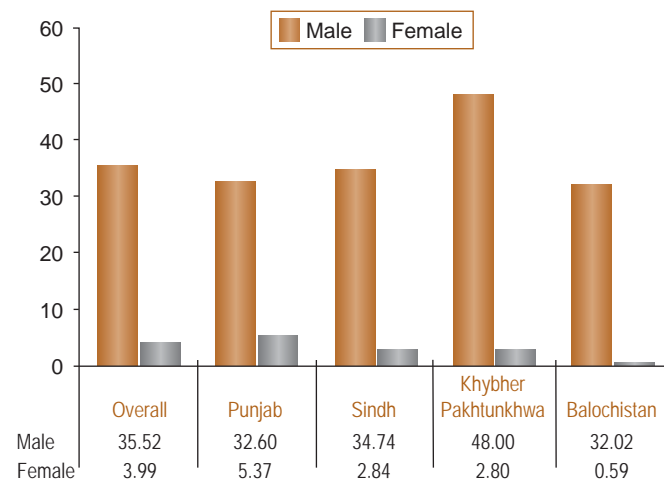


Figure 3.2
Non-farm Wage-Employment - Major Employers

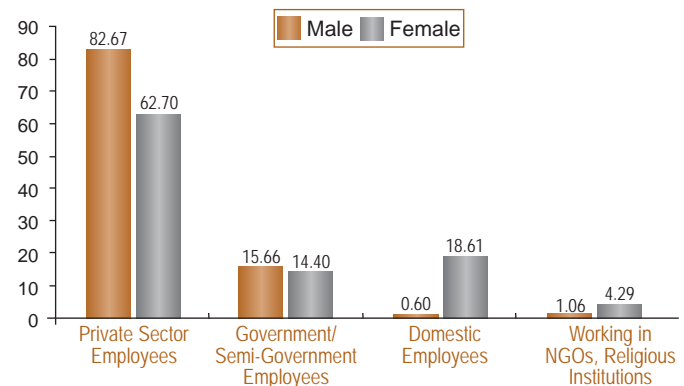
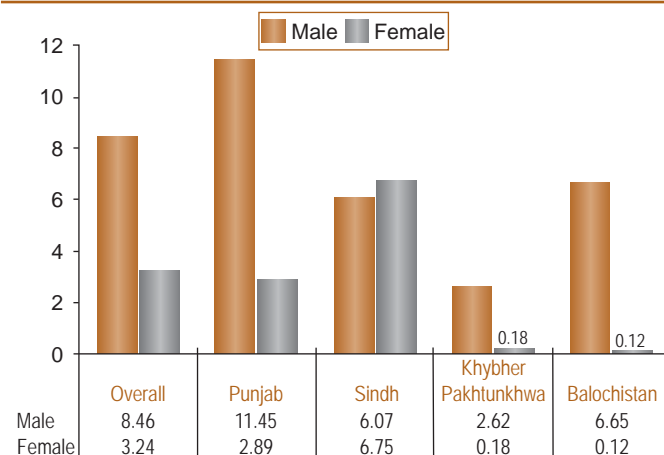


Figure 3.3
Non-farm Self-Employment across Provinces
[As a percent of respective 10 years and above population]



employment activities. According to Figure 3.3, which also reports the incidence of self-employment across provinces, the highest incidence in rural male labour force is observed in Punjab, while the highest incidence of rural female self-employment is found in Sindh province ('Rice' zone).

Majority of women who report non-farm work participation through self-employment are engaged in the production and sales of home-made

products (cottage industry), while male participation is not so skewed. Besides the cottage industry, activities such as trade, personal and household services (plumber, electrician, barbers etc.), transport providers (tanga)⁸, rickshaw, van etc.) are also reported.

Participation in non-farm activities by children (10-15 age cohort) is mainly due to household poverty and distress. However, the incidence of child labour also depends on the opportunities and availability of jobs in the area or community neighborhood. The rural household survey of this study estimates an incidence of 6 percent (2 percent girls and 9 percent boys) child labour participation in non-farm wage employment (Figure 3.5). Highest

incidence is reported in Khyber Pakhtunkhwa, while surprisingly incidence is relatively low in Sindh and Balochistan. Participation by girls (10-15 age group) in Khyber Pakhtunkhwa is also high and noticeable as compared with low and no incidence of girls' participation in non-farm activities in Sindh and Balochistan respectively. The survey data (not reflected in the table) reveals that about 75 percent girls are employed in the private sector, while about 25 percent are working as domestic employees. Conversely, all male child labourers are reported working as wage worker in private sector.

Figure 3.4
Non-farm Self-Employment - Major Activities

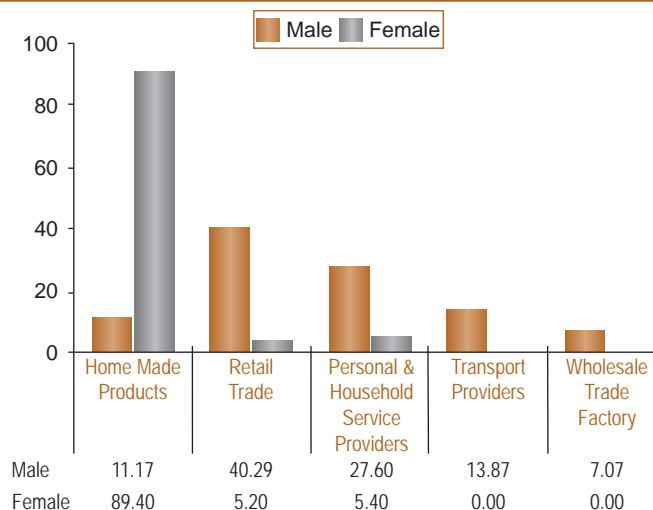
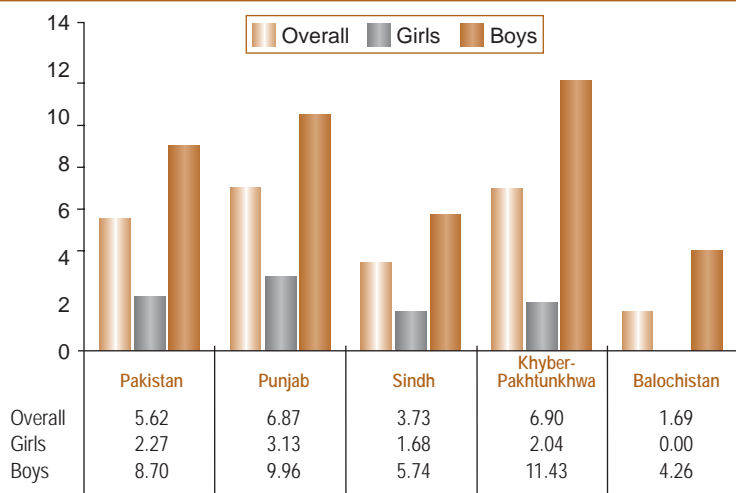
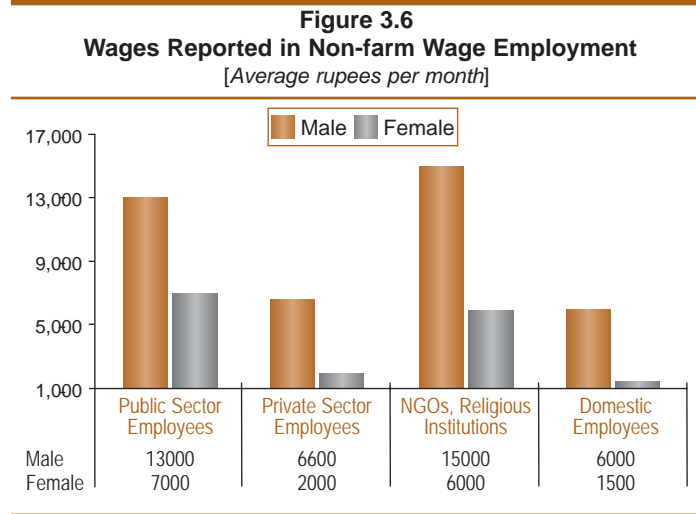


Figure 3.5
Children Participation in Non-farm Employment
[As a percent of respective 10-15 years age cohort]



3.2 Wage Discrimination

Although detailed job descriptions regarding wage employment - which is necessary to establish differentials in wage structure - were not scrutinised during the survey, a rough idea of wage differentials across gender may be ascertained from Figure 3.6. The figure shows average monthly earnings (salary and other cash and in-kind benefits).



It is evident from the figure that women generally are either underpaid or involved in low-paid (unskilled) rural non-farm⁹ activities through wage employment. The gap is relatively low in the case of public sector employment, while in other sectors average wages of male employees are three or four times higher.

3.3 Women Empowerment through Non-farm Income Generation Activities

This study also examines how far the participation in non-farm activities among rural women has contributed towards her individual empowerment in decision making like household purchases, economic and social aspects, child education and health, etc. Wife of household was asked a set of 45 questions pertaining to five crucial areas (economic, income, assets, education and health, and social aspects)¹⁰. The questions are framed in such a manner that each 'yes' gives one point to women and



each 'no' gives a score of zero. The evidences of the extent of empowerment¹¹ in terms of average scores obtained are provided in Figure 3.7 and Table 3.2.

The low empowerment score, especially in decisions related to assets sale and purchase, indicates the deplorable position of rural women (wife) in household decision making process.

Table 3.2
Women's Empowerment - Average Score
[Wife participation in non-farm activities]

Empowerment Variables		Mean Score	in Score	t-value	Significance
Economic Empowerment [Score out of 14]	Participating	8.9048			
	Not Participating	5.8239	3.0809	7.552	.000
Income Empowerment [Score out of 5]	Participating	3.2533			
	Not Participating	1.1087	2.1446	11.187	.000
Empowerment Related with Education and Health [Score out of 10]	Participating	7.9109			
	Not Participating	5.1125	2.7984	10.047	.000
Social Empowerment [Score out of 10]	Participating	4.7712			
	Not Participating	3.5845	1.1867	2.831	.006
Assets Empowerment [Score out of 6]	Participating	.8786			
	Not Participating	.6168	.2618	2.216	.029
Overall Empowerment [Score out of 45]	Participating	25.7187			
	Not Participating	16.2464	9.4723	9.733	.000

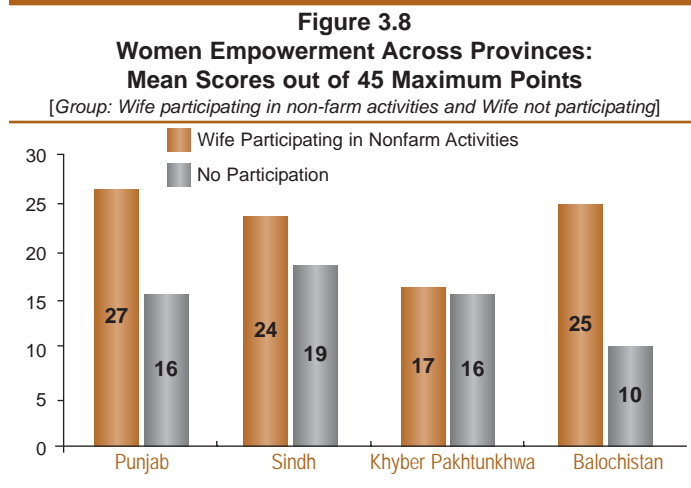
Note: The differences in average scores in all types of empowerments are highly significant statistically.

However, it is encouraging that the average score improves as the wife participates in the earning process through non-farm activities. The figure clearly reveals that average score is significantly higher for women who are participating in non-farm activities either through wage or through self employment. According to their perceptions and opinions, participating women are more empowered in decisions related to economic, social and other aspects. Out of a maximum score of 45, participating women have obtained 26 points as against 16 which is associated with non-participating women (wives).

To statistically evaluate the differences in average empowerment score between participating and non-participating women, a procedure (t-test) is applied¹². According to Table 3.2 which furnishes the results of t-test, average scores obtained by participating women in non-farm activities are not only higher as compared with non-participating women but are also statistically significant in all types of household decision making.

Figure 3.8 portrays differences in the overall empowerment score between participating and non-participating women (wife) across provinces. Being a modern society with fewer cultural constraints in terms of female participation in the job market, the difference in the empowerment score between participation and non-participation women should be high in Punjab compared

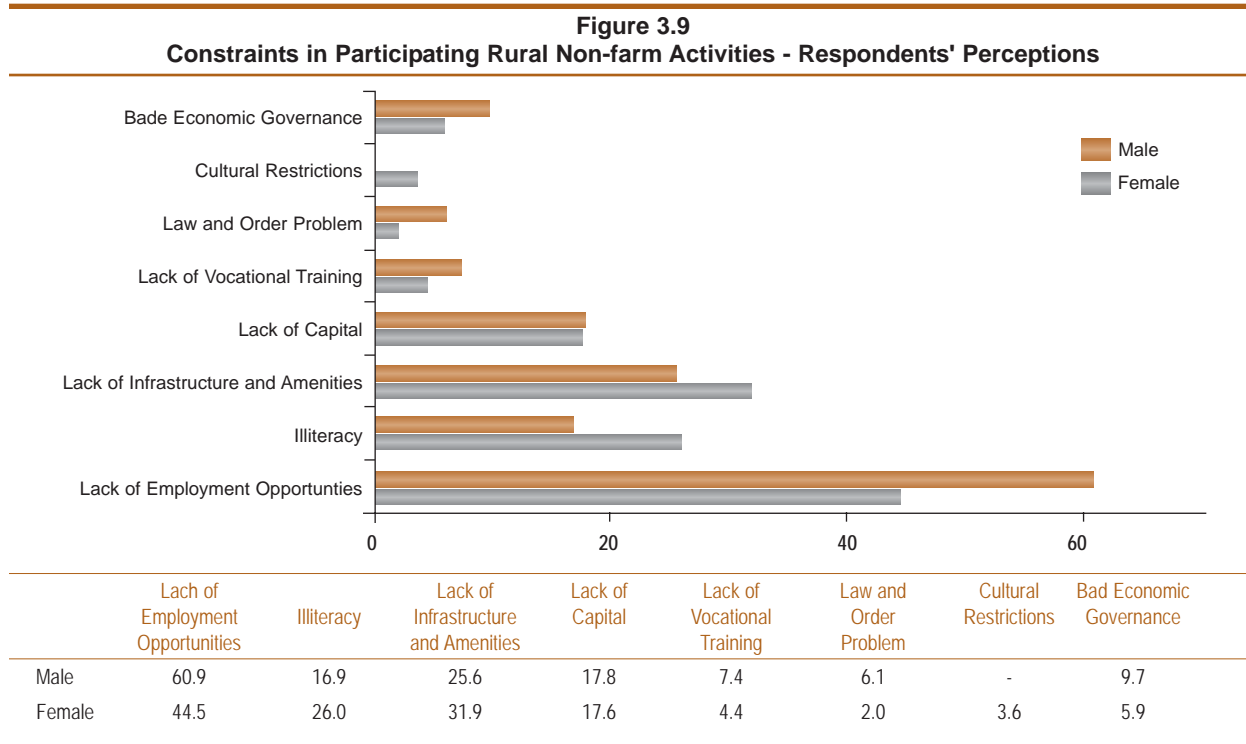
with other provinces. However, surprisingly, the table indicates that the difference is the highest in Balochistan. Moreover, the data also reveals that marked differences in empowerment score exist in Balochistan in all types of empowerment considered in this study. This finding requires further exploration and investigation¹³.



As expected, an insignificant difference exists between participating and non-participating women in Khyber Pakhtunkhwa, while a relatively low magnitude of difference is observed in the case of Sindh. Culture and high levels of female illiteracy in these areas might be possible causes.

3.4 Constraints to Participate in Non-farm Work

During the rural household survey, respondents were requested to indicate the most common problems hindering their engagement in non-farm activities (wage as well as self-employment). Figure 3.9 below collates their perceptions.



A majority of respondents, irrespective of gender, is willing to participate and complained about the lack of employment opportunities. An almost nonexistence of industries in rural neighborhoods, especially small agro-based and cottage industry, is a major hurdle to participation. Due to a lack of financial resources and entrepreneurship ability, respondents were interested in part or full time jobs in these industries to diversify household income resources.

About 17 to 26 percent male and female respondents respectively affirmed that their illiteracy is a major constraint. Likewise the lack of vocational training is also recorded by 7 percent. Lack of infrastructure (roads to market and to district/tehsil headquarter) and amenities (water, electricity, public transport etc.) is recorded by a significant percentage of respondents. Female respondents were especially vocal with respect to the lack of infrastructure and its inadequacy. About 18 percent respondents have reservations about the availability of financial resources to engage in self-employment activities. Surprisingly, cultural constraints or restrictions, as a barrier to enter non-farm rural activity, is recorded by very few (4 percent) female respondents.

Bad or deficient economic governance is also recorded as a hurdle in non-farm income generation activities by a noteworthy percentage of respondents. Inflation, corruption, lack of merit and the deteriorating law and order situation, especially in Khyber Pakhtunkhwa and Balochistan, were main hurdles according to respondents of rural households.

Major constraints or hurdles across provinces are gathered in Table 3.3. Results are according to a priori expectations. For instance, education (illiteracy) is a major hurdle in less developed Khyber Pakhtunkhwa and Balochistan, while employment opportunities or job creation through small scale agro-based industries are more pronounced in Punjab and Sindh. Similarly, a lack of infrastructure is recorded by a comparatively lower percentage of respondents in Punjab, while majority of respondents in Sindh and Balochistan declared this factor as a major constraint. However, it is surprising that cultural constraints as a hurdle to participate in non-farm income generation activities is not recorded by respondents in Khyber Pakhtunkhwa and very few (1 percent) in Balochistan.

Table 3.3
Perceptions of Respondents about Constraints Across Provinces

	Punjab		Sindh		Khyber Pakhtunkhwa		Balochistan	
	Female	Male	Female	Male	Female	Male	Female	Male
Employment Opportunities	58.6	74.6	44.6	61.4	6.6	7.9	15.7	14.0
Education	23.8	15.9	17.5	7.6	50.5	26.3	40.7	40.1
Infrastructure and Amenities	17.2	15.4	36.7	46.2	23.1	18.4	100.0	68.1
Capital	13.1	15.0	30.1	28.8	8.8	14.0	5.1	15.5
Vocational Training	7.0	9.7	-	-	9.9	12.3	0.9	0.5
Law and Order	-	-	-	0.8	15.4	44.7	4.2	19.3
Cultural Consent	0.5	-	9.6	-	-	-	1.0	-
Governance (economic)	6.1	12.1	5.4	1.5	-	5.3	13.9	19.3

Lack of financial resources as a constraint is recorded, irrespective of gender by a significant percentage in Sindh, while the lack of vocational training is considered a constraint mainly in Punjab and Khyber Pakhtunkhwa.

4. STATISTICAL EXPLANATION OF NON-FARM WORK PARTICIPATION

A number of 'push' and 'pull' factors¹⁴ may influence the decision to participate in non-farm income generation activities. Non-availability of agricultural land, relative stagnancy of agriculture, droughts and other natural disasters, household human and financial capital resources, employment opportunities and availability of infrastructure are important factors for labour supply to the rural non-farm economy. An attempt is made in this section to evaluate statistically the determinants (incentives and disincentives) of participation in non-farm work in the context of rural Pakistan.

Among various approaches of modeling non-farm work participation, a logistic regression is preferred¹⁵. The dichotomous (binary) dependent variable (1, if respondent is engaged in non-farm income generation activities either through wage or self employment, 0 otherwise) is a function of a vector of individual (respondent) characteristics, a vector of household characteristics, and an array of location characteristics. Variables across these categories or grouping, which turned out statistically significant¹⁶ are described in Table 3.4, while estimated results¹⁷ are presented in Table 3.5.

The estimated model has 0.484 Nagelkerke R-square and a statistically significant likelihood ratio. Both parameters indicate a good fit of the specification. Further, signs (directions) of all explanatory variables are consistent with theoretical considerations and earlier empirical research.

The table clearly indicates very low probability of female participation in rural non-farm work. Estimated probability of overall female participation is only 0.12 which is close to zero. To capture female participation due to cultural constraints in Khyber Pakhtunkhwa and Balochistan, two additional binary variables were introduced which turned out statistically significant, having a very low probability and are negatively correlated with the non-farm participation (dependent) variable.

The result suggests the quadratic effect of age on the level of non-farm work participation. Non-farm income generation activities increase with age as experience and job skill increase, but then subsequently decline. The findings are consistent with earlier empirical work. Elder family members do not want to commute and may prefer to work on-farm.

Table 3.4
Explanatory Variables to Determine Participation in Non-farm Income Generation Activities

Respondent Characteristics:

Female Participant	Binary Variable, 1 if respondent is female, 0 otherwise
Age	Age of Respondent
Schooling	Schooling of Respondent (Years)
Wife	Binary Variable, 1 if respondent is housewife, 0 otherwise
Head	Binary Variable, 1 if respondent is Head of Household, 0 otherwise

Household Characteristics:

Labour Force	Number if family members between 15 to 64 age cohorts
Assets Score	This variable is constructed by assigning equal weight to each of the thirty-six assets enquired in the survey. A constant 1 is assigned to each of the assets detained by the household, and the assets score is obtained by summing up across all assets at the household level. Of course uniform allocation of score irrespective of the asset characteristics tends to smooth out the distribution of assets across households. To the extent that these assets have different values and all exhibit different rates of depreciation, uniform allocation might even increase the distortion in the distribution of household assets. But, what actually matters in this construction is the ownership of assets by a household and not so much the values of the asset which are difficult to estimate accurately from surveys carried out on a single visit to the household.
Household having electricity	Binary Variable, 1 if household have electricity, 0 otherwise
Agriculture Land	Ownership of Agriculture Land (Acres)
Number of Crops	Number of crops cultivated
Tenant Household	Binary Variable, 1 if a tenant (share cropper) household , 0 otherwise
Non-Agriculture Household	Binary Variable, 1 if household have no land for cropping, 0 otherwise
Distance from Road	Distance of household from 'pacca' (carpeted) road

Location Characteristics:

Female (Khyber Pakhtunkhwa)	Binary Variable, 1 if respondent is female and belongs to Khyber Pakhtunkhwa province, 0 otherwise
Female (Balochistan)	Binary Variable, 1 if respondent is female and belongs to Balochistan province, 0 otherwise
Agro-Climatic Zones - 1 to 8	Eight binary variables representing household in 1 to 8 agriculture zones described in Appendix-A (Figure and Table A.1. Zone 9 is the reference category and thus is excluded from estimation due to econometrical reasons.

Table 3.5
Estimated Results of Logistic Regression
 [Binary Dependent Variable: 1=Member participating in non-farm Activities, 0=Otherwise]

	Estimated Coefficients	Wald Statistics	Statistical Significance	Estimated Probability
INDIVIDUAL CHARACTERISTICS:				
Female Participant	-1.964	226.572	0.000	0.123
Age	0.243	184.197	0.000	0.561
Age Square	-0.003	192.371	0.000	0.499
Schooling	0.015	2.885	0.089	0.504
Wife	-0.601	13.567	0.000	0.354
Head of Household	0.484	15.363	0.000	0.619
HOUSEHOLD CHARACTERISTICS:				
Family Members, 15-65 age cohort	0.648	12.948	0.000	0.656
Assets Score	-0.026	6.048	0.014	0.493
Household having electricity	0.282	2.717	0.099	0.570
Agriculture Land	-0.067	13.386	0.000	0.483
Number of Crops	-0.152	5.344	0.021	0.462
Tenant Household	-0.326	2.551	0.100	0.419
Non-Agriculture Household	0.491	12.850	0.000	0.620
Distance from Road	-0.003	4.606	0.032	0.499
LOCATION CHARACTERISTICS:				
Female (Khyber Pakhtunkhwa)	-1.457	26.365	0.000	0.189
Female (Balochistan)	-2.196	25.641	0.000	0.100
Agro-Climatic Zone - 1	0.523	10.701	0.001	0.628
Agro-Climatic Zone - 2	0.401	5.325	0.021	0.599
Agro-Climatic Zone - 3	0.647	16.125	0.000	0.656
Agro-Climatic Zone - 4	0.555	10.688	0.001	0.635
Agro-Climatic Zone - 5	0.501	8.904	0.003	0.623
Agro-Climatic Zone - 6	-0.638	11.767	0.001	0.346
Agro-Climatic Zone - 7	0.810	23.764	0.000	0.692
Agro-Climatic Zone - 8	0.651	23.677	0.000	0.657
Intercept	-5.423	275.362	0.000	
MODEL SUMMARY:				
-2 Log likelihood		4695.694		
Cox & Snell R ²		0.326		
Nagelkerke R ²		0.484		

The findings in Table 3.5 reveal a significant contribution by the head of household to non-farm work with a probability of 0.62, while conversely the probability of participation by wife is very low (0.35) and insignificant.

A positive and significant impact of education on the probability to participate in non-farm work is expected. The results confirm that years of schooling, which is a proxy for the level of human capital is statistically significant and positively correlated with the non-farm labour supply. This phenomenon is consistent with the results of other empirical research done in developing countries including Pakistan (Shand and Teck-ann (1986), Robinson et al. (1982), Jamal H. (1995) etc.). However, the estimated magnitude of probability which indicates relative importance of the variable is not so high (0.5) with low level of significance.

To control for the variations in terms of extent of labour force across households, number of household members between 15 to 65 years of age are included as an explanatory variable in the equation. The variable turned out significant and has a high probability (0.66). Thus, higher the labour force pool, higher would be the probability to participate in non-farm work.

Electricity is included as an explanatory variable to proxy the household (and thus village) modernisation. Positive and significant correlation is expected between household electrification and non-farm work participation. The variable behaves as expected with a positive sign and a probability of 0.57.

Household non-productive¹⁸ asset score is used in the analysis to proxy household wealth. It is expected that wealth of a household increases the demand for leisure and thus negatively affects the participation rate. As expected, the estimated coefficient associated with asset-score is negative.

Land endowment and cropping patterns are the major determinants of allocation of time between farm and non-farm activities. It is assumed that the smaller the size of land ownership and the number of crops, the higher will be the probability to join non-farm income generation activities. Hence, an inverse relationship exists between the decision to participate and the size of land holding. The results in Table 5 confirm this comprehension as the coefficients associated with agriculture land and number of crops are negative and highly statistically significant. Similar reasoning may be argued with respect to non-farm household with no land (owned as well as leased). The results confirm the phenomenon as coefficient corresponding to non-agriculture household is positive and significant. It is also evident from the table that an inverse relationship exists between tenant household and non-farm labour supply.

The distance from household to 'pacca' road is a proxy for the opportunity for labour utilisation available to the household as well as a proxy for ease in commuting. Thus, a priori expectation is that the farther the road, the less will be the probability of non-farm work participation. The coefficient corresponding to the variable representing distance is negative and thus consistent with findings of other relevant empirical research.

Binary variables representing agro-climatic zones are included in the statistical model of logistic regression to control for the differences across zones with respect to land endowment, soil fertility, cropping pattern, crop management, extent of mechanisation, level of development in terms of financial and human resources and other socio-cultural variables. Differences in these variables may affect the probability to participate in non-farm income work. The results of logistic regression clearly indicate that all agro-zones are distinct to offer opportunities for non-farm income generation activities. The coefficients associated with all agro-climatic zones are statistically significant. This finding is vastly consistent with the empirical findings in other developing countries. For instance, Davis (2004) concluded that the patterns in access to rural non-farm opportunities are significantly diverse across countries and even in regions in a particular country.

5. SUMMARY AND CONCLUSION

The role of non-farm income generation activities in rural areas is of special significance, not only because of landlessness but also because of the highly seasonal nature of agricultural employment, water shortage and droughts. The rural non-farm economy provides employment, security in terms of resources and market linkage for agriculture. Thus this sector has immense potential to contribute to overall economic growth and poverty alleviation.

This study focuses on rural households in Pakistan in an effort to understand the economic, social and behavioral aspects that affect non-farm work participation. Exclusively, gender role is investigated in non-farm rural sector by evaluating gender differences in terms of patterns, determinants and the extent of participation in rural non-farm income generation activities.

A primary household survey of about 1200 rural households in the four provinces of Pakistan was conducted for this study. These households were randomly selected from different agro-climatic and cropping zones and were enumerated using comprehensive set of living standard measurement and employment modules.

Major findings from the rural household survey are highlighted below:

- Overall, about 32 to 35 percent of the rural male labour force is participating in non-farm wage employment sector in three provinces, whereas the percentage in Khyber Pakhtunkhwa is quite high (48 percent). Conversely, 4 percent of the rural female labour force is reportedly working as wage employees in the non-farm economy. The incidence of female employment is highest in Punjab (5.37) province and the lowest (0.59) in Balochistan. About 3 percent of female wage employment each is observed in Sindh and Khyber Pakhtunkhwa.
- Almost 83 and 63 percent of male and female wage employees respectively are working in private sector (manufacturing, construction, trade and services); whereas about 15 percent of wage workers, irrespective of gender are in public sector. Female employees are also reported working as domestic employees.
- According to survey estimates, overall 8 and 3 percent of male and female rural labour force respectively is engaged in non-farm income generation activities through self-employment. Highest (11.45) incidence in rural male labour force is observed in Punjab, while highest (6.75) female incidence of rural self-employment is found in Sindh province. The incidences of self-employment activities in Khyber Pakhtunkhwa and Balochistan are minimal.
- Almost 90 percent of women, among those who reported non-farm work participation through self employment are involved in the production and sales of home-made products. In contrast, male participants are engaged in diverse activities such as wholesale and retail trade, personal and household services and transport.
- The survey estimates an incidence of 6 percent (2 percent girls and 9 percent boys) child labour participation in non-farm wage employment. Highest incidence is reported in Khyber Pakhtunkhwa, while surprisingly incidence is relatively low in Sindh and Balochistan. Keeping high poverty level in rural Sindh and Balochistan, it is plausible to argue that child (boys and girls) are working on-farm in these provinces. Participation by girls in Khyber Pakhtunkhwa is also high and noticeable as compared with low and no incidence of girls' participation in non-farm activities in Sindh and Balochistan respectively.
- According to survey estimates, women generally either are underpaid or involved in low-paid (unskilled) rural non-farm activities through wage employment. The gap is relatively low in case of public sector employment, while in other sectors, average wages of male employees are three or four times higher. However, the gap in wages is considerably narrow in case of agricultural labourers.
- The measurement of women empowerment in household decision making process is

not an easy and straightforward task. Nonetheless, an attempt is made to develop women (wife) empowerment score with the help of a series of decisions. It is revealed that average score is significantly higher for women who are participating in non-farm activities either through wage or through self employment. Participating women are more empowered, according to their perceptions and opinions in decisions related to economic, social and other aspects. Out of 45 maximum score, participating women have obtained 26 points as against 16 in the case of non-participating wives.

- Major constraints and obstacles in non-farm work participation, according to the perceptions of respondents, are lack of employment opportunities and lack of infrastructure (roads to market and to district/tehsil headquarter) and amenities (water, electricity, public transport etc.) Especially female respondents were vocal with respect to lack or inadequate infrastructure. Other constraints include illiteracy, lack of vocational training, lack of financial resources and bad economic governance. Surprisingly, cultural constraints or restrictions, as a barrier to enter into non-farm rural income generation activity, were recorded by very few female respondents.
- To explore incentives of and barriers to non-farm work participation, an econometric model is also estimated for this study. Factors which are positively correlated with participation include; age, schooling, head of household, electricity and landlessness. Contrary, factors which have negative association with the decision to participate are; female, land ownership, tenant household, number of crops and distance from 'pacca' road. Results of econometric regression also indicate that all agro-zones are distinct (statistically different) to offer opportunities for non-farm income generation activities. The coefficients associated with all agro-climatic zones are statistically significant indicating the absence of commonalities among zones in terms of supply of labour to non-farm rural economy.

On the basis of findings from household survey, following prototype actions are recommended to enhance the role of non-farm work participation to augment or diversify household income in rural areas:

- The study clearly indicates that distinct policies for accelerating the rate of participation should be made for each agro-climatic zone. These policies should consider the available agriculture endowments, human resources and extent of dynamism and commercialisation of agriculture.
- One of the important findings is that generally, 'push' or distress factors are dominant in the decision to participate in non-farm work activities. Therefore, providing employment opportunities in terms of small or cottage industries in rural neighbourhood would boost

the size of non-farm rural economy. Tax and other incentives may attract small entrepreneurs to establish labour intensive agro-based industries in rural areas.

- In dynamic and developed agriculture zones of Punjab, policies should be made to attract farm households to enter self-employment activities. Providing financial resources and vocational training may facilitate income diversification in these areas.
- In Sindh, Khyber Pakhtunkhwa and Balochistan, problem in commuting due to lack of infrastructure and roads is a major constraint, especially for female to enter in non-farm work activities.
- Illiteracy and lack of vocational training both for male and female should be addressed, especially in rural Sindh and Balochistan to increase the demand for rural non-farm wage or self employment activities. Moreover, it should be coupled with establishment of bank branches in rural areas.
- Problems which are also faced by urban industries, such as load-shedding, water shortage, corruption and law and order problems were also quoted by rural entrepreneurs as constraints in establishing business or industry.

NOTES:

1. The term 'non-farm' should not be confused with 'off-farm'. The latter generally refers to activities undertaken away from the household's own farm, and some authors use it to refer exclusively to agricultural labouring on someone else's land, so 'off-farm' used in this sense would not fall within the normal definition of 'non-farm' (Gordon and Catherine, 2001). Further, terms 'non-farm' and 'non-agriculture' are used interchangeably in this document.
2. The detail of household survey methodology is provided in the Appendix-A.
3. There is no comparison between the study survey and the national representative Pakistan Labour Force Survey (LFS) due to small sample size, sample stratification, scope and coverage. However, the comparative figures are not so off. According to LFS, refined activity rate (participation of 10 years and above population) in rural Pakistan was 49.1 during 2010-11, whereas the survey conducted for this study estimates refined activity rate as 48 percent. Nonetheless, the small sample size and hence large sampling errors should be kept in mind while interpreting the results follow.
4. In dynamic, modern or commercialized agriculture areas, new technologies and modern farm inputs stimulates agricultural growth which promotes in turn expansion of the rural non farm economy. Increased labour productivity on the farm increases the available food supplies, releasing farm family workers to undertake non-farm activities. Furthermore, increased farm income makes capital available for investment in the non-farm sector. On the demand side, modern agriculture increasingly requires inputs and services provided by the non farm sector. Also, farm households use their larger income to buy non-farm foods and services, further stimulating the demand of this sector. This increased demand provides incentives for rural households to diversify and start producing rural non-farm goods and services.
5. An attempt is also made to estimate poverty incidence of rural households. Pakistan official poverty line of 2005-06 after adjusting with CPI for the year 2010-11 and household monthly expenditures are used to estimate household poverty status. Highest poverty incidence of 24.57 percent is estimated for non-agriculture non-farm households as against 14.71, which is estimated for agriculture households. While about 20.38 percent 'Mixed households' which are involved in both agriculture and non-agriculture income generation activities were designated as poor households. These findings support the argument that mainly 'push' factors determine the supply of labour in non-farm economy in Pakistan.
6. The district classification according to the agro-climatic zone is provided in the Appendix-A (Table - A.1).
7. It is worth noting that participation is recorded if female is getting returns from the business, irrespective of ownership of business/activity. Thus unpaid family labour is not considered as a part of labour force.
8. Horse driven two-wheelers cart used for transportation purposes.
9. The gap in wages is considerably narrow in case of agricultural labourers. The data reveals that average monthly earning of male agriculture labour is rupees 4800 per month, while women gets rupees 3000.
10. For detail, see Hashemi et.al. (1996). List of empowerment indicators by type of decision-making is provided in the Appendix-B.
11. It is, however, should be kept in mind that answers of the sets of questions are opinions and perceptions of the respondents and thus the exercise gives just a rough idea of women empowerment through non-farm activities.
12. The t-test compares sample means by calculating Student's t and displays the two-tailed probability of the difference between the means. A statistically significant t-value indicates that the difference between two groups/categories is significant and the groups or categories may be distinguished in terms of average characteristics (here, average empowerment score).

13. This may be due to sampling error or biases in selecting districts in Balochistan province. Due to logistic (law and order) problems, strict objectivity was not feasible in Balochistan.
14. The distinction between push and pull factors suggests that there are different prerequisites, constraints, motivations and outcomes for households engaging in the rural non-farm employment. Davis and Bezemer (2004) reported six factors which determine access to rural non-farm employment and income: (i) education and skills; (ii) social capital; (iii) ethnicity and caste; (iv) gender dynamics; (v) financial capital; and (vi) physical infrastructure and information. Davis (2004) also observed that the patterns in access to rural non-farm opportunities are significantly diverse across countries and regions.
15. For binary or categorical variables, logit, probit or tobit specifications are used. Due to very low level of participation and non-normality of distribution, logit specification is preferred which uses logistic distribution.
16. Many other variables/factor were also tried but dropped from final estimates due to non-significance. For instance, household status with respect to consumption poverty, distance from Bank, value of agriculture produce, highest education in family, value of agriculture land, livestock ownership etc. Statistical non-significance indicates that no significant difference exists with respect to these variables in farm and non-farm households.
17. Ideally, gender disaggregated separate logistic regressions should be estimated to infer incentives and disincentives associated with male and female labour force. However, due to very low percentage of female labour force in non-farm economy (3 percent) separate logistic regression for female was not preferred. Alternatively, female labour force is represented through a binary variable (see Table-4) to control female participation.
18. Productive assets are not used due to econometrical (endogeneity) reasons. Similarly, own agriculture land is used in the analysis instead of operational land holding.

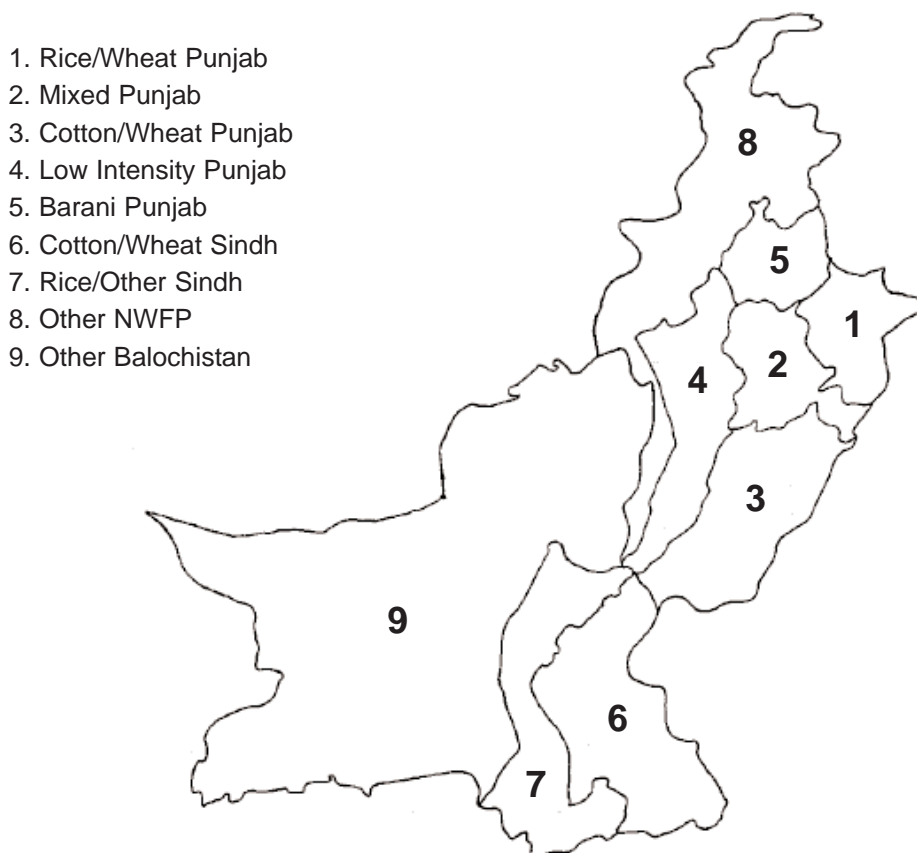
APPENDICES

APPENDIX A RURAL HOUSEHOLD SURVEY METHODOLOGY

The widespread and diverse nature of rural non-farm activities has been recognised, along with the multifarious factors which facilitate and drive rural income diversification. Therefore, careful selection of clusters is essential to capture variation in key factors which affect the size of the rural non-farm sector. The cautiously selected sample facilitates to draw generalizable lessons about what works or what determine in particular situations.

A three-stage stratified sample design was adopted for rural household survey. One district from each agro-climatic zone of Punjab and Sindh was selected for enumeration. According to classification of Pakistan agro-climatic zones (Figure A.1), Khyber Pakhtunkhwa and Balochistan contain one zone each. Therefore, it was decided to select two districts from these provinces. Thus at the first stage of sampling, overall 11 districts of Pakistan were selected for the survey. District selection is based on two important considerations, viz., rural deprivation (a 'push' factor

Figure A.1
Pakistan Agro-Climatic Zones



Source: Source: Pickney, Thomas C. 1989. "The Demand for Public Storage of Wheat in Pakistan", Research Report 77, International Food Policy Research Institute (IFPRI)

for rural non-farm employment) and proportion of non-farm employed labour force (a 'pull' factor for non-farm employment). The information regarding the non-farm sector is obtained from Pakistan Social & Living Standards Measurement Survey (PSLM, 2008-09), while district rankings in term of rural deprivations was obtained from Jamal and Khan (2007). The distribution of districts across agro-climatic zones and the selected districts for the rural household survey are displayed in Table-A.1.

Table A.1
Selected Districts for Household Survey across Agro-Climatic Zones
[Districts surveyed are presented in bold and larger font]

Agro-climatic Zones	Districts
1 Rice/Wheat Punjab	Sialkot, Gujrat, Gujranwala, Sheikhupura, Lahore, Kasur, Narowal , Mandi Bahauddin, Hafizabad
2 Mixed Punjab	Sargodha, Khushab, Jhang , Faisalabad, Toba Tek Singh, Okara
3 Cotton/Wheat Punjab	Sahiwal, Bahawalnagar, Bahawalpur , Rahimyar Khan, Multan,
4 Low Intensity Punjab	Dera Ghazi Khan, Rajanpur, Muzaffargarh , Layyah, Mianwali, Bhakkar and Dera Ismail Khan of Khyber Pakhtunkhwa
5 Barani Punjab	Attock, Jhelum, Rawalpindi, Islamabad, Chakwal
6 Cotton/Wheat Sindh	Sukkur, Khairpur, Nawabshah, Hyderabad, Tharparkar, Nowshero Feroz, Ghotki, Umerkot, Mirpur Khas , Sanghar
7 Rice/Other Sindh	Jacobabad, Larkana , Dadu, Thatta, Badin, Shikarpur, Karachi
8 Khyber Pakhtunkhwa	All Khyber Pakhtunkhwa except Dera Ismail Khan [Peshawar, Haripur]
9 Balochistan ^a	All Balochistan [Quetta and Ziarat]

^a On the basis of selection criteria, initially districts Khusdar and Quetta were selected for the survey in Balochistan province. However, due to the law and order situation in the province, it was not feasible to conduct survey in Khusdar. Therefore, the survey was carried out in district Ziarat

The next step was to determine appropriate sample size for each selected district given the cost and time constraints. Two important parameters are vital for deciding the statistically desirable sample size, viz., the confidence level (Z) and sampling error (e). The confidence level is expressed as a percentage and represents how often the true percentage of the population lies within the confidence level. On the other hand, all samples are subject to sampling error, which is the difference between the results obtained from the survey sample and those that would have been obtained had the entire area surveyed. For a fairly homogenous cluster, a tolerated sampling error of 10 percent with 95 percent confidence level is considered acceptable. According to the formula^b, a sample size of 100 (96 to be exact) for each district is yielded using the above values of sampling error and confidence level.

^b Optimal Sample Size = $Z^2 [p(1-p)] e^2$. The p in the formula depicts estimated proportion of indicators of interest. The proportion value of 0.5 is normally used which gives maximum sample size.

Seven Primary Sampling Units (villages) in each district were randomly selected from the list given in the District reports of Population Census, 1998. Sixteen households^c (Secondary Sampling Units) were chosen from different starting points. Households were selected by systematic sampling procedure with a random start^d. Thus from each district, 112 households were enumerated. Provincial distribution of realised sample is furnished in Table A.2.

Province	Household Surveyed	Error Margin (%) [95% Confidence Level]
Punjab	560	4.14
Sindh	224	6.6
Khyber Pakhtunkhwa	224	6.6
Balochistan	224	6.6
Total	1232	2.8

Sampling weights are needed to correct for imperfections in the sample that might lead to bias and other departures between the sample and the reference population. Therefore, to compensate for unequal probabilities of selection due to sample design, analysis should be carried out after applying probability weights. Probability weights are simply the ratio of population proportions to the sample proportion. These

Province	Un-Weighted Count [Sample Design]	Weighted Count [Corrected Sample]
Punjab	560	702
Sindh	224	296
Khyber Pakhtunkhwa	224	173
Balochistan	224	61
Pakistan	1232	1232

weights are computed at provincial level and entire statistical analysis is performed on the adjusted sample. Table A.3 provides information regarding weighted and un-weighted sample.

Structured questionnaires (male and female) were administered to head as well as spouse of the selected sample households. The modules covered in the survey include: demography, employment, education, housing quality, housing services, income, expenditure patterns, asset ownership, food consumption, women empowerment, land ownership, land tenure status, crop output, livestock, mechanisation, time use patterns etc.

The survey was administered with the help of local enumerators during the year 2011. SPDC staff supervised the survey and provided in-depth training (office as well as field) to the designated local staff before starting the field survey.

^c Federal Bureau of Statistics, now Pakistan Bureau of Statistics (PBS) generally conducts interviews of 16 households from each selected rural PSU.

^d For the selection of starting points, villages were divided into four hypothetical quarters. Four interviews were conducted in each quarter. A skipping of five households was made after one successful interview.

APPENDIX B WOMEN EMPOWERMENT VARIABLES

1. ECONOMIC ASPECTS

[Score: Yes =1, No =0]

INDICATORS:

- Do you take decisions on the aspects of purchase, construction, modification or repair of house?
- Do your husband discuss with you when decision on construction/modification/repair of house is made
- Do you take decisions on the purchase or sale of livestock?
- Did your husband discuss with you before sale or purchase of livestock?
- Do you purchase your dresses for the family?
- Do you purchase the utensils for your family?
- Do you purchase gold and jewellery for your family?
- Do you take decisions on borrowing money?
- Do your husband discuss with you on the issues of borrowing money?
- Do you spend money you have borrowed?
- Do you repay the money you have borrowed?
- Do you take decisions on transactions involving household Equipments?
- Do you have any debt in your name?
- Do your husband discuss with you when he has made the debt?

2. INCOME

[Score: Yes =1, No =0]

INDICATORS:

- Do you have your own income?
- Do you spend it for the family yourselves?
- Do you need the permission of your husband to spend your income?
- Do you get any part of your family income or husband's income to your hands regularly?
- Do your husband discuss with you when he spends income for the family or his own requirements?

3. ASSETS

[Score: Yes =1, No =0]

INDICATORS:

- Do you possess any household asset? [Record all assets owned by spouse]
- Do you have cash savings in your own name?
- Do you operate Bank account in your name?
- Do you need permission from your husband to sell, pledge, exchange any of the assets?
- Do you have purchased land in your own name?
- Is the house you stay registered in your name?

4. EDUCATION & HEALTH**[Score: Yes =1, No =0]****INDICATORS:**

- Do you take decisions on the issues of your children's education?
- Does your husband consult with you when he takes decision on the education of your children?
- Do you think you can decide on how many children you can have?
- Do you think you can decide on the spacing between children?
- Do you think that you can decide on the treatment of your illness or your family member's illness?
- Do you think you can decide on the method of treatment for your family members?
- Do you think you can decide on the type of contraceptive to be used?
- Do your husband discuss with you on the issues of health aspects of children?
- Do you have any choice of food prepared and served in your home?
- Are you able to take care of the nutritional requirements of yourself, family and children?

5. SOCIAL AND POLITICAL ASPECTS**[Score: Yes =1, No =0]****INDICATORS:**

- Are you free to go out and visit your friends and relatives without permission?
- Do you have the choice of the dresses you wear?
- Does your husband impose his religious beliefs on you and make you accept them?
- Do you have any association with political parties?
- Do you participate in voting and other democratic procedure?
- Does your husband impose her political ideas on you and make you accept them?
- Do you participate in the meetings of NGO's programmes (other social events) in your locality?
- Does your husband prevent you from participating in such programmes?
- Do you take decisions on the marriage of your son/daughter?
- Does your husband discuss with you on the issues of the marriage of your son/daughter/close relative?

REFERENCES

- Davis, J. R. (2004), *The rural non-farm economy, livelihoods and their diversification: Issues and options*. Chatham, UK: Natural Resources Institute.
- Davis, J. R. and Bezemer, D. (2004), *The development of the rural non-farm economy in developing countries and transition economies: Key emerging and conceptual issues*, Chatham, UK: Natural Resources Institute.
- Gordon, Ann and Craig, Catherine (2001) *Rural non-farm activities and poverty alleviation in Sub-Saharan Africa*, Policy Series 14, Chatham, UK: Natural Resources Institute.
- Haggblade, S., P. Hazell and T. Reardon. 2005. *The rural non farm economy: pathway out of poverty of pathway in?* Paper presented for the research workshop "The future of small farms" organised by IFPRI, ODI and Imperial College, at Wye, United Kingdom. 26-29 June 2005
- Hashemi, S., Sidney R Schuler, S., and Ann P.Riley (1996) *Rural credit programmes and women's empowerment in Bangladesh*, *World Development*, 24 (4)
- Jamal H (1995), *Explanation of off-farm work participation in rural Pakistan*, *The Pakistan Development Review*, 34(2).
- Jamal H. and Khan A. J. (2007), *Indices of multiple deprivations 2005*, Research Report Number 72, Social Policy and Development Centre, Karachi
- Robinson, C et al. (1982), *Labour supply and off-farm work by farmers: Theory and estimation*, *Australian Journal of Agricultural Economics*
- Shand, R. T. and C. Teck-ann (1986), *The Off-farm labour supply of padi farmers in Kelantan, Malaysia*, *The Singapore Economic Review*

The Social Policy and Development Centre (SPDC)

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