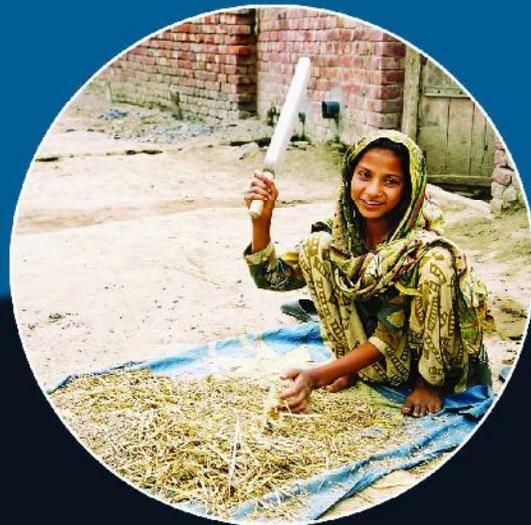


Profiling Rural Pakistan for Poverty, Inequality and Social Exclusion

Research Report No.91

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Profiling Rural Pakistan for Poverty, Inequality and Social Exclusion

ABSTRACT

The study documents the extent and spread of poverty in rural Pakistan using two different approaches to define and measure population living in distress and deprivation. In addition, social exclusion is assessed by developing the geographical Indices of Multiple Deprivations.

Income inequality and poverty affect each other directly and indirectly through their link with economic growth. Therefore, the study presents various summary measures of inequalities in rural per capita income and in ownership of land.

A brief description of social protection for the rural population is also supplemented to comprehend the response to rural poverty.

JEL Classification: I32, I31, D3, D6

Keywords: Rural Pakistan, Consumption Poverty, Multidimensional Poverty, Indices of Multiple Deprivation, Income Inequality, Social Protection

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1. THE CONTEXT

Although poverty in urban areas is substantial and increasing, global poverty is still predominantly a rural phenomenon. According to IFAD (2011), about 70 per cent of the world's very poor people – around one billion – are rural, and a large proportion of the poor and hungry amongst them are children and youth. The report specifies that *“Neither of these facts is likely to change in the immediate future, despite widespread urbanisation and ongoing or approaching demographic transitions across regions. Now and for the foreseeable future, it is thus critical to direct greater attention and resources to creating new economic opportunities in the rural areas for tomorrow's generations”*.

The empirical literature suggests that rural areas require specific policies for poverty alleviation and rural development due to the distinctive characteristics of rural life: unfavorable demographic situation, remoteness, poor infrastructure, meagre labour market opportunities, low education level and inferior quality of institutions. These 'rural' characteristics may interact and generate 'vicious circles' which ultimately amplify the phenomenon of rural poverty.

In contrast, it is observed in the context of developing countries that national economic and social policies are generally urban biased which may contribute to rural poverty by excluding the rural poor from the benefits of growth and development. According to Khan (2000), policy biases that generally work against the rural poor include:

- Urban bias in public investment for infrastructure and provision of safety nets;
- Implicit taxation of agricultural products through so-called support prices and an overvalued exchange rate;
- Direct taxation of agricultural exports and import subsidies;
- Subsidies for capital-intensive technologies;
- Favouring export crops over food crops; and
- Bias in favour of large landowners and commercial producers with respect to rights of land ownership and tenancy, publicly provided extension services, and access to (subsidised) credit.

Moreover, social and economic deprivations of rural populations have been neglected, and often remain invisible in official statistics, documents and policy analyses. Two examples may be mentioned in the context of Pakistan. To determine the poverty incidence, the official poverty line is estimated at the national level instead of using separate urban and rural poverty lines. Second, the targeting of the largest social

assistance programme (BISP) is based on the poverty score card. Here also, a unique score card is used for identification of both urban and rural poor, despite the distinct characteristics of each population segment. This situation indicates a lack of public awareness as well as unconsciousness of policy makers around the understanding of sources and drivers of poverty and social exclusion of the rural population.

The present study partly fills the gap in the context of rural Pakistan by profiling special features of consumption and multidimensional poverty. The study also evaluates the extent of social exclusion in terms of multiple deprivations. A brief description of social protection of the rural population is also added to comprehend the response to rural poverty.

The rest of the paper proceeds as follows. The next section provides the specifics of consumption poverty. The incidences, trends and socio-economic correlates are encapsulated in this section. This section also highlights the nature and extent of micronutrient deprivations. The special features of multidimensional poverty are summarised in Section 3, while section 4 explores the extent of social exclusion by furnishing the geographical indices of multiple deprivations. Income distribution and inequality in land ownership, which also directly and indirectly influence the poverty level, are evaluated in Section 5. The subsequent section is reserved to recapitulate the specifics of social protection for the rural population of Pakistan, while a bulleted summary of major findings concludes the report.

Box-1

What is Rural?

Globally, there is no one agreed-upon definition for what constitutes 'rural'. There are two main methods to define rural in practice. One methodology is to use a geopolitical definition that defines specific administrative units as urban and by exclusion defines all of the rest as rural. The second methodology uses population agglomerations to define rural. Populations that live within an area where populations are larger than for example 5,000 inhabitants are considered urban, while by exclusion the rest is defined as rural. Since it establishes a clear threshold, this method seems more feasible. There is another less often used methodology which is nonetheless worth mentioning in view of its relevance for social protection and rural poverty analysis. This method considers the availability of municipal services to define rural/urban localities.

In the context of Pakistan, the 1951, 1961 and 1972 population censuses defined urban as areas with a minimum population base of 5,000 people, though exceptions were made for some localities with less than 5,000 people that had urban characteristics. In the 1981 and 1998 censuses, urban areas were defined according to an administrative definition.

According to Population Census 1998, "All localities which were metropolitan corporations, municipal corporations, municipal committees, town committees or cantonment at the time of the Census were treated as Urban". The Census does not actually define "rural." "Rural" encompasses all population, housing, and territory not included within an urban area. Whatever is not urban is considered rural. The territory of the lowest tier of urban settlement is the "Town Committee" which is defined in terms of population scale as "population exceeding 10,000 but not exceeding 30,000".

This research is primarily based on household surveys conducted by the Pakistan Bureau of Statistics (PBS). The sample of these surveys is derived from the framework of Population Census. According to the PBS, "With regard to the rural areas, the lists of villages/mouzas/deh according to Population Census 1998 have been used as sampling frame. In this frame, each village/mouzas/deh is identifiable by its Name, HAD BAST Number, CADASTRAL map etc. This frame comprises of 50590 villages/mouzas across Pakistan.

2. CONSUMPTION POVERTY IN THE RURAL CONTEXT

Traditionally, Household Integrated Economic Surveys (HIES) are used to estimate poverty in Pakistan. These nationally representative surveys are carried out by the Pakistan Bureau of Statistics (PBS) with a sample of around 16,000 to 18,000 households across the country. Individual household level (unit record) data of HIES are used to estimate consumption poverty for rural areas.

2.1 Estimation of Consumption Poverty Line

Among the various approaches of defining income/consumption or traditional poverty, 'calorific approach' is the most popular in developing countries due to its practicality. Almost in all studies of poverty in LDCs including Pakistan, the poverty level is defined in terms of food inadequacy which is typically measured by the lack of nutritional (calorie) requirements. Correspondingly, the Government of Pakistan adopted this approach for estimating the official poverty line. According to the Poverty Reduction Strategy Paper (PRSP-I, GOP, 2003), the Planning Commission described the following definition for estimating the poverty line.

"Calorific requirement approach wherein all those households (or individuals) are classified as poor who do not have income sufficient to allow a consumption pattern consistent with minimum calorie requirements (2350 calories per adult equivalent per day). It is also assumed that the households earning incomes equivalent to poverty line not only have sufficient food to meet the minimum nutrition requirements but also the non-food requirements".

However, the Government of Pakistan does not estimate separate urban and rural poverty lines. As the rural lifestyle in general requires a greater consumption of calories than the urban lifestyle, then for any given level of income, rural households are likely to consume more calories, on average, than their urban counterparts. Thus poverty estimates derived from official methodology using a unique poverty line for both urban and rural households underestimate rural poverty and overestimate urban poverty.

To get rid of this deficiency, the Poverty Research Unit of Social Policy and Development Centre (SPDC) estimates separate urban and rural poverty lines using 2,230 and 2,550 calories per day per adult as the minimum calorie requirement¹ for

¹ The justifications of taking these minimum requirements are described in Jamal (2002). The paper also provides other technical details in term of methodological choices and options available to estimate the consumption poverty line.

urban and rural areas respectively. Thus the rural calorie norm (minimum calorie requirement) recommended in SPDC research on poverty is used here to estimate the rural consumption poverty line.

To estimate household expenditures, which are required for obtaining the minimum required calories, the Calorie-Consumption Function (CCF)² is estimated. The poverty line is then computed by combining calorie norms and estimated coefficients of the CCF. Poverty can then be used to define the poor by total expenditure falling short of the poverty line; by the average dietary pattern, the expenditure would translate into fewer calories than required.

Once a poverty line is defined, and hence the individual/household poverty status determined through relating the poverty line and household expenditure, the question is how to aggregate this information into a single index to

proxy the status of a group of individuals. The most popular measure, namely the Headcount Index (incidence) assigns equal weight to all poor regardless of the extent of poverty. However, there are other measures which are sensitive to distribution among the poor and combine both the incidence and intensity of poverty. Three aggregate measures/indices are estimated: headcount, poverty gap and poverty severity. The formulae and the weights assigned to these indices are described in Box-2.

² Household food consumption is translated into calories using Food Consumption Tables for Pakistan (GoP, 2001).

Box 2 FGT Poverty Aggregates

Various poverty aggregates (indices) are used to proxy the status of a group of individuals. A class of functional forms, which has been suggested by Foster, Greer, and Thorbecke (FGT), uses various powers of the proportional gap between the observed and the required expenditure as the weights to indicate the extent of and level of intensity of poverty. The higher the power the greater the weight assigned to a given level of poverty. Therefore, it combines both incidence and intensity. The following formula is used for measuring various poverty aggregates.

$$P^\alpha = (1/N) \sum [(Z - EXP)/Z]^\alpha$$

Where;

P^α	=	Aggregation measure
N	=	Total number of households
EXP	=	Observed household total expenditure
Z	=	Poverty line
\sum	=	Summation for all individuals who are below the poverty line

Putting $\alpha = 0$, the formula shows the proportion of households whose consumption falls below the poverty line. This poverty **incidence or headcount** is the most popularly used in poverty empirics. The formula assigns equal weights to all of the poor regardless of the extent of poverty.

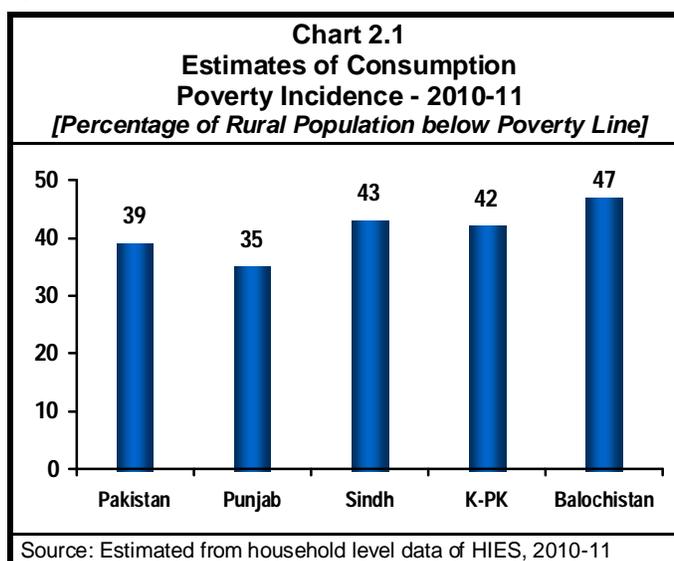
Putting $\alpha = 1$, the Proportionate Gap Index or **Poverty Gap** (PG) is calculated. The PG measures the average distance from the poverty line. Although the PG shows the depth of poverty, it is insensitive to distribution among the poor.

Putting $\alpha = 2$, FGT2 index is calculated. This index takes into account inequality amongst the poor and shows the **poverty severity** by assigning greater weights to those households who are far below the poverty line.

Thus, these three aggregate indices (**Headcount, Poverty Gap, and Poverty Severity**) are computed to give a picture of the extent and severity of poverty.

2.2 Latest Estimates of Rural Poverty

The estimated rural poverty line (Rs. 2298 per adult equivalent or Rs. 1,926 per capita per month) from the latest available HIES data for the year 2010-11 is mapped on household per capita total expenditure for computing various poverty measures or aggregates. Chart 2.1 displays the estimated statistics of poverty incidence (headcounts).



It is estimated that overall about 39 percent of the rural population of Pakistan was poor during the year 2011. As expected rural poverty is the lowest in the Punjab province and highest in Balochistan province. The magnitude of rural poverty is almost equal in Sind and Khyber Pakhtunkhwa, while poverty in Balochistan is relatively higher.

The information clearly conveys that the plight of the rural people is masked by ignoring the analysis of poverty and deprivation separately for the rural context. This is very much evident in the case of rural Sindh.

Table 2.1 summarises the famous FGT aggregate measures of rural poverty. Besides incidence or headcount, no significant differences are observed across provinces in the Poverty Gap Index (PGI) or poverty depth. The PGI informs the required per capita contribution to lift poor people out of poverty (as a proportion of the poverty line). Nonetheless, here too the magnitude is highest for Balochistan. Similar trends are evident in the measure of poverty severity. It is, however, worthy to note that poverty depth and severity indices are notional and are generally used to rank regions or territories or to track changes over time.

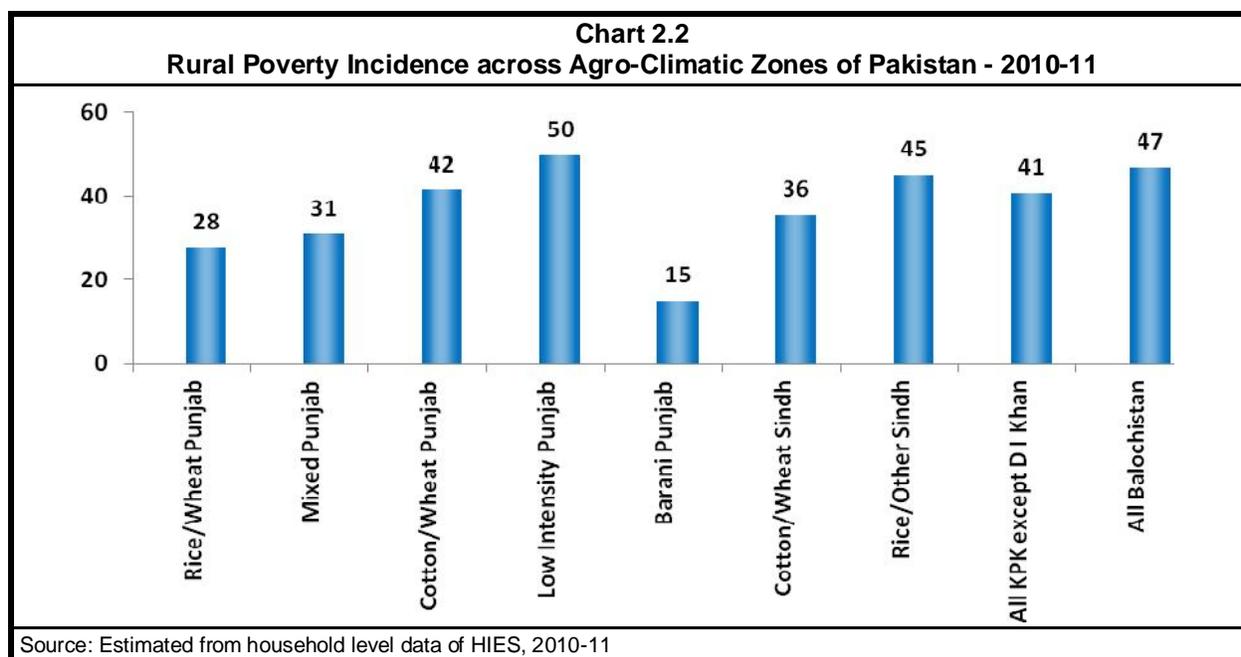
Table 2.1
Estimated Rural Poverty Measures - 2010-11

	Head Count Index [Incidence]	Poverty Gap Index [Depth]	FGT2 Index [Severity]
Pakistan	38.66	6.92	1.84
Punjab	35.49	6.21	1.60
Sindh	43.18	7.67	2.01
Khyber Pakhtunkhwa	41.79	8.04	2.40
Balochistan	46.85	8.27	2.06

Source: Estimated from household level data of HIES, 2010-11

Most of the analyses of poverty have been carried out at the aggregate rural level due to the sample design of HIES which provides statistically reliable estimates of poverty and other characteristics only at the national or regional (urban/rural) levels. Because of this obstacle very few studies have attempted to provide variation in poverty at disaggregated levels, especially in terms of agro-ecological differences³ in rural Pakistan. These studies found significant differences in poverty levels; nonetheless these estimates are not representative and not statistically reliable as they have not been derived from a district representative survey, and thus do not capture the inter-district differences in a particular agro-ecological or climatic zone.

The Poverty Research Unit of SPDC attempted, for the first time, to predict poverty with the help of non-income poverty correlates at sub-national levels by applying small area estimation technique in the context of Pakistan⁴. The technique employs two surveys: a small survey which is representative at national and regional levels (HIES) and a large district representative survey (PSLM). Both surveys are conducted by the PBS. This technique is used for this study to estimate consumption poverty at the levels of agro-climatic zones⁵ of Pakistan. Chart 2.2 highlights the estimated poverty headcount or incidence for the year 2010-11.



³ A summary of these studies is provided in Malik (2005).

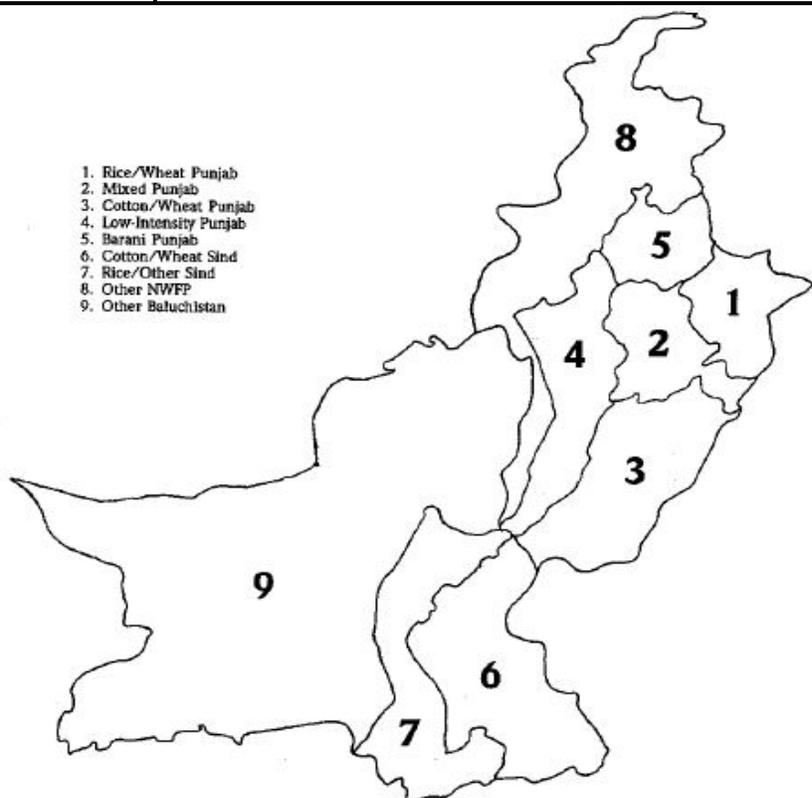
⁴ For technical details and poverty estimates at the sub-national levels, see Jamal (2007) and Jamal (2013).

⁵ Box-3 provides details in terms of boundaries and districts for each agro-climatic zone.

The highest incidence of consumption poverty is estimated for “Low-Intensity Punjab” (mostly South Punjab and D.I. Khan of Khyber Pakhtunkhwa) zone followed by “Rice-Other Sindh” zone. The estimated poverty incidence of “Cotton/Wheat-Punjab” zone is also high. Again this zone consists of districts of south Punjab.

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

1. Rice/Wheat Punjab
2. Mixed Punjab
3. Cotton/Wheat Punjab
4. Low-Intensity Punjab
5. Barani Punjab
6. Cotton/Wheat Sind
7. Rice/Other Sind
8. Other NWFP
9. Other Baluchistan



Source: Pickney, Thomas C. 1989. “The Demand for Public Storage of Wheat in Pakistan”, Research Report 77, International Food Policy Research Institute (IFPRI) | <http://www.ifpri.org/sites/default/files/publications/r77.pdf>

In contrast, lowest poverty (15 percent) incidence is estimated for “Barani” (rain-fed) zone of Punjab. Moreover, about 47 and 41 percent poverty incidence is estimated for Balochistan and Khyber Pakhtunkhwa provinces respectively. These provinces have a very small share in agriculture GDP.

Despite methodological differences and other inconsistencies, surprisingly, the poverty trends are very similar to earlier studies described in Malik (2005). High poverty levels are generally observed in Sindh and southern Punjab, while lowest level of poverty is observed in barani areas of the Punjab province.

2.3 Trends in Rural Poverty

There is consensus among researchers and analysts that economic growth may not always be a sufficient condition for poverty reduction, but it certainly is a necessary one. Chart 2.3 confirms this phenomenon by highlighting the inverse relationship between agriculture GDP and rural poverty incidence. A decline of 4 percentage points is observed during the periods 2001 and 2005. The principal factor for this decline in rural poverty was the remarkable growth of 7.5 percent in agriculture in 2004-05 as against 0.1 percent in the fiscal year 2000-01. In contrast, due to the decline in growth in agriculture GDP during 2005 and 2011, the poverty level is reverting back and showing an upward trend with an increase of 8 percentage points during 2005-2011 periods.

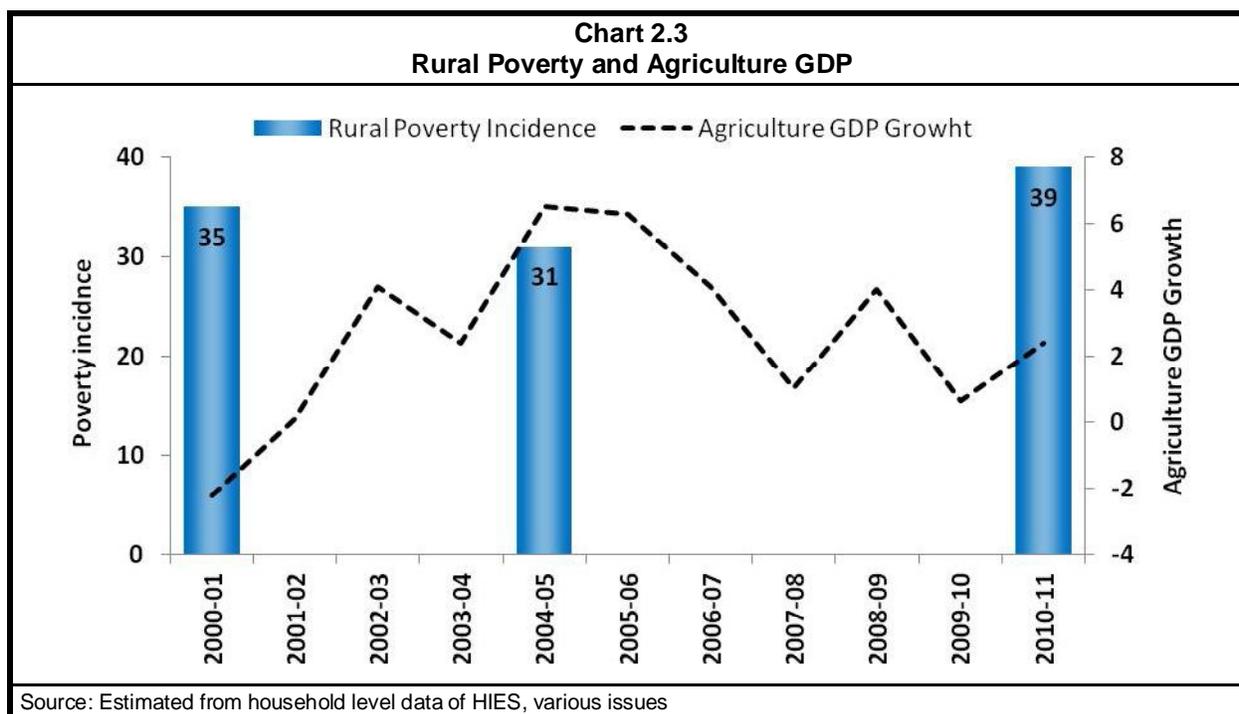
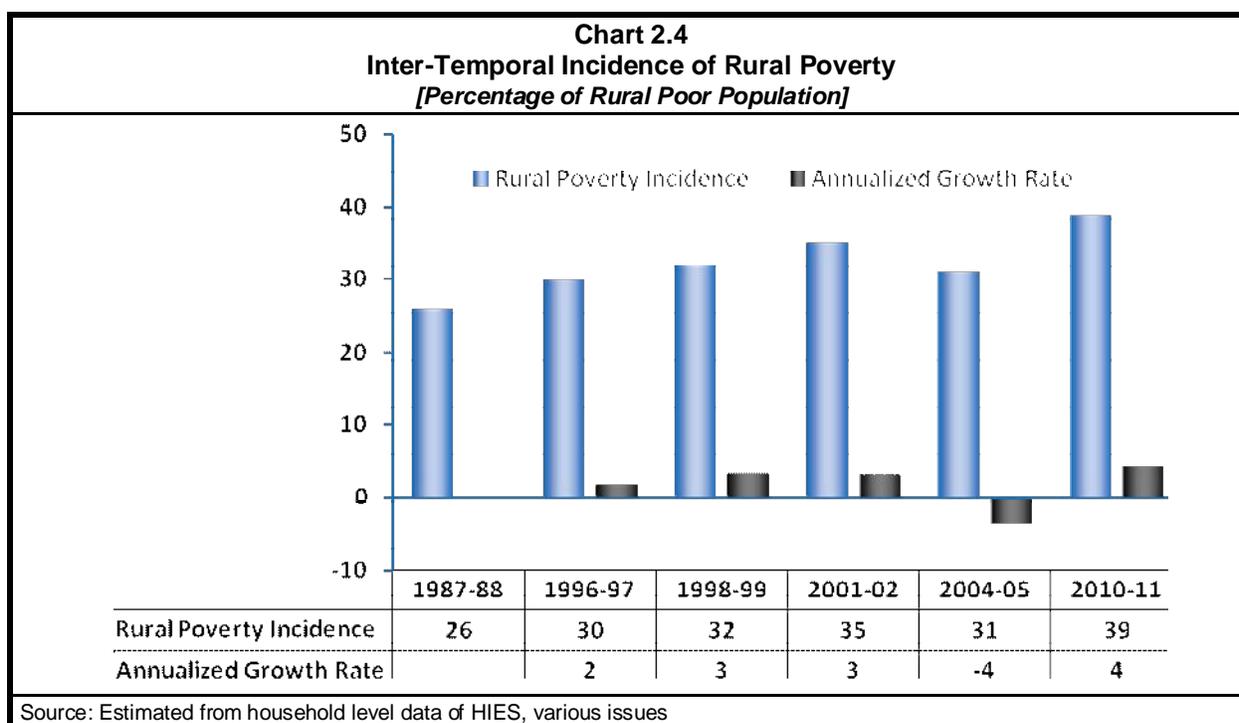


Chart 2.4 portrays the trend in poverty incidence from 1987-88. All these poverty numbers are estimated using unit record household level data of HIES and by applying throughout a consistent and identical methodology for estimating poverty lines and poverty indices. The chart indicates a rising trend in rural poverty incidence up to the period 2000-01. However, rural poverty has dropped with an annual growth rate of 4 percent during 2001-2005. Again, during 2004-05 and 2010-11, estimated poverty incidence has gone up with an annualised growth of 4 percent.



2.4 Socio-Economic Correlates of Consumption Poverty

Understanding the key demographic and socio-economic characteristics of the poor is an essential prerequisite for the formulation of an effective and meaningful poverty alleviation strategy. An attempt is made to establish links between consumption poverty and social, demographic and economic attributes of households. The demographic characteristics include household size, dependency ratio, age and gender of the head of the household. Access to asset endowments is assessed based on ownership of land and livestock, as well as the educational attainment of the head and spouse of the household. Impact of remittances on poverty is evaluated by estimating separate poverty incidence for households which receive domestic or foreign remittances, and which do not. To establish the link between poverty and the nature of work in the rural context, occupational characteristics are also considered.

The analysis is carried out by applying two different methods. First, poverty incidences are estimated for various categories of household characteristics. For instance, what would be the poverty level of households with less than five family members as compared with households with family size of more than nine? This bi-variate analysis, although it provides useful insights in terms of poverty determinants, fails to present the net impact of an attribute on poverty status after controlling the other characteristics. Thus a multivariate analysis is supplemented by estimating logistic regression function. The summary statistics of the logistic regression indicate a good-fit of the model with a high percentage of correct predictions and expected signs of all coefficients. The findings of these exercises are collated in Tables 2.2 and 2.3.

Family size and dependency ratio are important determinants of rural poverty. The incidence of poverty is increasing significantly with the increase in family size. About 19 percent households with a family size less than five are designated poor, while the incidence is 47 percent of those households which have a family of more than 9 members. Similar differences are observed in the categories of dependency ratio. Very low magnitude of poverty incidence (10 percent) is evident in Table 2.2 for households which have less than 50 percent dependency ratio. Highly statistically significant coefficients of these two characteristics in the logistic regression (Table 2.3) corroborate the importance of population welfare programs in alleviating rural poverty.

Female headship of households is considered a positive correlate of poverty. The experience of developing countries shows that, as heads of households, women face all kinds of cultural, social, legal and economic obstacles that men, even poor men, do not. However, to understand the true impact of female headship on poverty, it is essential to integrate the role of transfers and remittances into the analysis. By and large, women in Pakistan acquire the status of head of a household in two eventualities. First, when men migrate in search of better economic prospects and women temporarily take charge of the household. Such instances are particularly common in northern areas of Pakistan where the phenomenon of out-migration is prevalent. Second, when the male head of household dies or departs from the household and woman provides for her family. The results of poverty incidence (Table 2.2) show that in the latter case, the probability of the household being poor is high.

		Pakistan	Punjab	Sindh	Khyber Pakhtunkhwa	Balochistan
Overall	Rural Poor Households	34.14	30.06	37.79	37.59	42.30
Family Size	< 5	18.86	18.63	26.54	11.70	15.84
	6-9	43.10	43.86	50.44	34.12	39.01
	> 9 Members	47.13	43.82	55.36	47.32	42.27
Dependency Ratio	<50%	9.66	5.38	18.48	19.91	15.07
	50%-100%	35.94	35.64	44.57	28.83	32.75
	More than 100%	46.99	46.78	49.93	46.19	42.59
Headship	Male Headship	35.25	34.08	42.65	31.71	32.51
	Female Headship - No Remittance	41.62	43.20	45.56	34.58	42.40
	- Domestic Remittance	24.01	24.58	56.15	20.53	.
	- Overseas Remittance	8.46	6.80	67.99	8.46	.
Age of Head	< 25	27.21	27.22	36.64	14.93	22.52
	25-45	35.83	35.53	41.81	31.16	30.44
	46-65	34.39	32.29	45.58	31.68	35.96
	Above 65 Years	28.32	28.93	37.91	19.23	32.50
Schooling of Head	Illiterate	41.67	42.14	51.49	32.67	36.46
	1-5	34.33	32.29	44.73	25.58	34.61
	6-10	25.01	22.63	34.62	28.60	19.97
	11-12	13.03	8.15	17.88	16.56	22.46
	>12 Years	8.16	2.12	13.01	17.05	6.49
Schooling of Spouse	Illiterate	36.86	36.47	45.12	30.93	33.05
	1-5	24.09	24.09	29.56	15.46	12.08
	6-10	16.43	15.32	22.65	19.24	.
	>10 Years	3.36	2.02	7.46	8.74	.
Household Type	Land Ownership	21.12	21.49	18.44	21.41	20.66
	Share Cropper (Hari)	33.59	28.10	45.62	39.43	40.67
	Non-Farm	42.26	42.39	50.65	34.34	34.47
Farm Size	Landless	41.57	41.14	50.25	34.74	34.58
	Small Farm (<13 Acres)	22.38	22.61	20.90	22.18	23.13
	Large Farm (>13 Acres)	8.70	8.31	9.22	9.14	9.82
Livestock	No Livestock	38.79	37.96	50.99	31.64	34.34
	Livestock Ownership	29.61	28.62	35.46	27.60	25.89
Remittances	No Remittances	37.09	35.83	42.65	36.33	32.48
	Domestic Remittances	26.78	28.51	50.99	19.23	16.10
	Overseas Remittances	10.82	7.85	48.76	13.03	29.09

Source: Estimated from household level data of HIES, 2010-11

Table 2.3
Results of Logistic Regression
[Dependent Variable Poor = 1, Non-Poor = 0]

	Estimated Coefficients	Level of Significance
Family Size	.319	.000
Dependency Ratio	-.012	.000
Head – Unemployed	.536	.095
Head – Wage Employed	.324	.000
Non-farm Household	.514	.000
Number of Earners	-.213	.000
Age of Head	.005	.036
Education Level of Head	-.044	.000
Education Level of Spouse	-.030	.029
Large Farm Households [More than 13 Acres]	.181	.612
Agriculture Land [Acres]	-.056	.000
Household ASSET SCORE	-.279	.000
Ownership of Non-Residential Building	-.179	.250
Livestock Ownership	-.708	.000
Household Structure – Pucca	-.110	.271
Landline phone [PTCL]	-.138	.032
SIND Province	.610	.000
Khyber Pakhtunkhwa Province	.661	.000
Balochistan Province	1.344	.000
Intercept [Constant]	-1.853	.000
<p>Notes: The signs of all coefficients are according to a priori expectation. Except spouse education, unemployed head, large farm households and ownership of non-residential building, all coefficients are statistically significant at least at 5 percent level.</p> <p>The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0. The value of Chi-Square strongly rejects the null hypothesis.</p>		
Model Summary:		
Chi-Square		3363
	Cox & Snell R-Square	0.29
	Nagelkerke R-Square	0.40
Percentage of Correct Prediction:		
	Non-Poor	86.5
	Poor	59.2
	Overall	77.0
Source: Estimated from household level data of HIES, 2010-11		

In the rural context, it is assumed that the education of head or spouse does not play an influential role in the income generating activities and hence is not as important as the endowment of physical capital (land, livestock, machinery etc.). However, the findings clearly demonstrate that education of the family head directly or indirectly influences poverty levels. The poverty incidence of households with illiterate head is 42, while it is as low as 8 in cases of households where the head has intermediate or higher level of schooling. The findings of multivariate analysis also confirm the role of education of head as the coefficient associated with schooling is negative and statistically significant.

Ownership of land, livestock and non-residential property are all negatively correlated with poverty incidence. Further, medium and large farmers (ownership of land greater than 13 acres) play a dominant role in distinguishing non-poor from poor households. Poverty incidences for landless households, small farmers and large farm households are estimated at 42, 22 and 7 percent respectively. With respect to type of rural households, highest incidence is observed for non-farm households, while about 34 and 21 percent share-cropper and landowner households respectively are designated poor.

Table 2.2 also reveals that remittances, especially from overseas, are instrumental in improving the standard of living of recipient households. It is evident from the table that poverty incidence is only 11 for those rural households which receive overseas remittances as against 37 percent households which do not receive such remittances. Nonetheless, the remittance variable did not work in the logistic regression model and appeared statistically insignificant with wrong sign, perhaps due to the multicollinearity problem.

An important determinant of poverty status is the stock of household assets. This variable is constructed by assigning equal weight⁶ to each of the twenty assets⁷ listed in

⁶ A constant 1 is assigned to each of the assets owned 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. The maximum asset score is 20 and the minimum is 0; for poorest households which possess none of the assets listed.

the HIES questionnaire. In the logistic regression 'asset-score' appears highly correlated with poverty status of households. The coefficient associated with 'asset score' is negative and highly significant.

2.5 Consumption Poverty and Micronutrient Deprivation

Consumption poverty is based on the premise of food inadequacy in terms of minimum calorie (energy) requirements. To estimate the consumption poverty line or poverty cutoff point, average dietary pattern is translated into calories and statistically correlated with household consumption. Nonetheless, the impact of other micronutrient deprivations on health, and especially on labour productivity, cannot be overlooked. Moreover, micronutrient deficiency is an important factor which contributes to the poverty trap, besides other factors such as no access to credit, environmental degradation, bad governance, poor education system, inadequate infrastructure and lack of public health care. Below is an average picture of malnourishment in rural households, portrayed by highlighting the extent of deficiency with respect to protein, vitamin A, iron, iodine and zinc. The intakes of these micronutrients are derived from the dietary pattern of rural households as evident from HIES 2010-11 data on food consumption.

Table 2.4 compares the average nutrient intake with the recommended daily allowance. The calorie intake in rural Pakistan is higher than the recommended requirement (2625 Kcal versus 2550 Kcal) in all provinces except in Sindh. Due to the differences in the climatic, work and living environment, it is not surprising that the average calorie intake is highest in Khyber Pakhtunkhwa province. On average, no significant protein intake deficiency is observed in rural population except for Sindh province. However, an unpleasant picture emerges with respect to other micronutrient intakes. Average daily intake of vitamin A, Iron, Iodine and Zinc are far off the mark as compared to the recommended daily allowance.

⁷ These assets are; iron, fans, sewing machine, video/cassette player, tables/chairs, clocks, TV, VCR/VCP,VCD, refrigerator, air-conditioner, air cooler, computer, bicycle, motor cycle, car, tractor, mobile, Cooking Range, Stove/Burner and Washing machine.

	Calorie [Kcal]	Protein [g]	Vitamin-A [RE]	Iron [mg]	Iodine [ppm]	Zinc [mg]
Punjab	2636	59	558	16	52	10
Sindh	2490	51	338	14	50	9
Khyber Pakhtunkhwa	2703	55	426	17	47	10
Balochistan	2700	57	332	17	68	11
Overall	2625	57	487	16	52	10
Recommended Daily Allowance	2550	57	750	20	150	15

Sources: Estimated from household level data of HIES, 2010-11.

Note: Nutrient values of various food items and Recommended Daily Allowance are taken from "Food Consumption Tables for Pakistan" (GoP, 2001).

All Households	Calorie	Protein	Vitamin-A	Iron	Iodine	Zinc
Punjab	52.41	49.00	76.72	84.93	98.01	92.74
Sindh	57.99	60.43	95.22	92.02	99.44	97.24
Khyber Pakhtunkhwa	50.74	54.43	87.48	78.92	98.41	91.81
Balochistan	48.47	50.28	92.64	75.29	96.67	88.53
Overall	52.89	51.88	82.46	84.67	98.24	93.14
Poor Households						
Punjab	90.34	82.92	92.70	97.95	99.78	99.14
Sindh	93.16	90.51	99.58	99.91	99.76	100.00
Khyber Pakhtunkhwa	89.09	88.67	97.06	97.48	100.00	99.31
Balochistan	85.71	82.46	99.50	97.54	100.00	99.10
Overall	90.53	85.31	95.12	98.28	99.82	99.35
Non-Poor Households						
Punjab	33.68	32.25	68.84	78.51	97.13	89.58
Sindh	31.84	38.05	91.98	86.15	99.20	95.18
Khyber Pakhtunkhwa	34.63	40.04	83.45	71.12	97.74	88.67
Balochistan	30.84	35.04	89.40	64.76	95.10	83.53
Overall	33.40	34.58	75.91	77.63	97.43	89.92

To further elaborate the phenomenon of severe deprivations of micronutrient intakes, Table 2.5 has been developed. The table reports the extent of nutrient intake deficiency with respect to recommended daily allowance in rural households. It is evident from the table that in more than 80 percent rural households, daily consumptions of vitamin A, Iron, Iodine and Zinc are below the recommended daily allowance. According to the disaggregated information with respect to household consumption poverty status, almost more than 95 percent poor households are deprived in terms of the above micronutrients. The phenomenon of severe deprivations of micronutrient intakes clearly necessitates direct nutritional intervention schemes for the poor to escape from the poverty trap. Simultaneously, the dietary trend in non-poor households calls for enhancing the level of awareness regarding knowledge as well as sources of micronutrients.

Although the above exercise of determining household status in terms of deprivation in micronutrient intake is useful⁸, the formulation of policy for nutritional interventions requires estimates of anthropometric measurement and clinical and core biochemical assessment of micronutrients, especially for target groups (children and women). Specialised nutrition surveys are useful tools that provide estimates of severity and geographical extent of malnutrition in terms of all important nutritional status indicators. These surveys assess the nutritional status of the individual or a representative sample of individuals within a population by measuring anthropometric, biochemical or physiological (functional) characteristics to determine the individual status in terms of nourishment.

The latest National Nutrition Survey (NNS) was conducted in 2011 by the Aga Khan University in association with the Pakistan Medical Research Council, Nutrition Wing-Cabinet Division (Government of Pakistan) and UNICEF (Pakistan). Table 2.6 furnishes the prevalence of malnutrition among children and women from the findings of NNS 2011 which have been made public⁹ recently. To compare the inter-temporal changes, the incidences of malnutrition are also collated from the previous National Nutrition survey of 2001-2002 (GoP, 2004).

⁸ According to UNICEF (1998), "there are two possible ways to assess the adequacy of food and nutrition and to detect the presence of inadequacy in food intake among individuals or population groups: the first measures nutritional intake and the second assess nutritional status".

⁹ Humanitarian Response, Pakistan (<http://www.pakresponse.info>)
http://pakresponse.info/LinkClick.aspx?fileticket=scqw_AUZ5Dw%3D&tabid=117&mid=752

According to the table, nearly 33 percent of children under five are underweight, 46 percent stunted, 18 percent wasted, 33 percent have iron deficiency anaemia and 36 percent have zinc deficiency in rural Pakistan during the survey year 2011. About 3 percent of the mothers had iodine deficiency with visible signs of goiter, while almost 21 percent mothers have iron deficiency anaemia. Moreover, about 36 percent school-going children still have iodine deficiency albeit significant improvement has been noted since 2002.

The NNS 2011 concludes that “very little has changed over the last decade in terms of core maternal and childhood nutrition indicators. The survey does point towards gains in iodine status nationally following the implementation of a universal salt iodization and promotion strategy, but is counterbalanced by substantial deterioration in vitamin A status and little to no gains in other areas of micronutrient deficiencies”.

Table 2.6					
Incidence of Malnutrition – Rural Pakistan					
		2011	2001		
Protein/Energy Malnutrition: [Anthropometric Measurement]					
Children Under Five	Underweight [Weight-for-Age]	33.1	42.3		
	Stunted [Height-for-Age]	45.9	32.5		
	Wasted [Weight-for-Height]	18.0	11.2		
Women					
	Normal BMI	56.6	56.2		
Nutritional Deficiencies: [Clinical and Bio-Chemical Assessment of Micronutrients]					
Mothers	Iron Deficiency	26.6	38.9		
	Iron Deficiency Anemia	20.5	28.6		
	Zinc Deficiency	43.2	44.9		
	Iodine Deficiency (Goiter Visible)	3.4	11.8		
Children Under Five	Iron Deficiency Anemia	33.0	36.8		
	Zinc Deficiency	36.4	40.2		
Children - School Age	Iodine Deficiency	35.9	64.0		
Source: National Nutrient Surveys, 2002 and 2011					

3. MULTIDIMENSIONAL POVERTY

The traditional uni-dimensional approach, which considers only one variable such as income or consumption, is popularly used due to its practicality. Nonetheless, it is extensively criticised in the literature on welfare and well-being. Critics argue that to understand the complex phenomenon of poverty, or to evaluate household or individual well-being holistically, a multidimensional exercise is imperative.

Although there has been progress in defining and measuring the multidimensional nature of poverty, and ample literature is now available on the conceptual and measurement issues, the "...challenges remain quite serious if the objective is to reach a degree of operationality (for multidimensional paradigm) comparable to that enjoyed by the income poverty paradigm" (Bourguignon, 2003).

Despite difficulties and arbitrariness in the measurement and aggregation of household multiple deprivations, a multidimensional approach to define poverty has been adopted in many developed and developing countries. The United Nations Development Programme (UNDP) has since 1990 challenged the primacy of GDP per capita as the measure of progress by proposing the Human Development Index (HDI), which combines income with life expectancy and educational achievement. Recently a global exercise was carried out by the Oxford Poverty and Human Development Initiative (OPHI) to develop Multidimensional Poverty Index (MPI) for more than 100 countries with the help of 10 non-income deprivation indicators of education, health and standard of living¹⁰. The results in terms of countries' ranking and magnitude of poverty have been published in UNDP's Human Development Report 2011. However, there are some concerns regarding the subjectivity in selecting cut-off points for individual indicators as well as for overall index. Moreover, weights to indicators and sectors are also arbitrarily assigned for developing a composite index.

Due to these shortcomings and subjectivity, the Poverty Research Unit of SPDC adopts a somewhat different methodology for estimating multidimensional poverty. Non-income deprivation indicators are combined through Categorical Principal Component Analysis (CATPCA) multivariate statistical technique. Consequently, this research follows the methodology¹¹ adopted in Jamal (2012b) to estimate rural multidimensional poverty

¹⁰ For detail see Alkire and Santos (2010) and Alkire and Foster (2007).

¹¹ The methodology is very briefly described in Box-4. For details, see Jamal (2012b).

aggregates. These estimates are derived from PSLM survey data enumerated during 2010-11, 2008-09 and 2004-05.

3.1 Components of Multidimensional Poverty

The selection of dimensions or components to derive multidimensional poverty is purely based on the appropriate data available in the household surveys. Table 3.1 provides a schematic view of the dimensions and component variables integrated for the estimation of indices of multidimensional poverty. All these variables are binary. A value of 1 is assigned to poor households and 2 to non-poor households.

Table 3.1 Variables Used to Assess Multidimensional Poverty	
Dimensions	Variables
Human Poverty	
	Illiterate Head of Household Illiterate Spouse No child of primary age (5-9 cohort) is in school No household member has completed five years of schooling
Poor Housing	
	Congested Household (Households with only one room) Congested Household (Person per room greater 2) Household with Inadequate Roof Structure Household with Inadequate Wall Structure Households with no electricity Households using unsafe (not covered) water Households with no telephone connection (landline or mobile) Households using inadequate fuel for cooking (wood, coal, etc.) Households without latrine facility
Economic and household Assets Poverty	
	Households with no home ownership Households with no physical household assets Unemployed Head of Household

Box 4
Methodology for Measuring Multidimensional Poverty

The multidimensional nature of poverty refers to the situation when an individual or household experiences a number of cumulative deprivations. These multiple deprivations represent different dimensions (economic well-being, education, health, social exclusion etc.) of human life. To develop a composite indicator or index from the selected deprivation dimensions or variables, two important decisions have to be made. The first decision concerns the weights of the indicators in the composite index, and the second concerns defining the threshold value of the composite indicator used to distinguish between poor and non-poor households.

The weighting problem can be approached in a number of different ways. Besides equal weighting or subjective judgment of experts regarding the importance of each variable, the weights may be computed using different multivariate statistical techniques. Use of Principal Components Analysis (PCA) for indexing multidimensional phenomena has been well established. Principal component analysis is simply a variable reduction procedure that (typically) results in a relatively small number of components that account for most of the variance in a set of observed variables. However, traditional PCA is best for continuous and normally distributed data as the technique assumes linear relationship between numeric variables. For category indicator variables, a team of Leiden University has developed Categorical Principal Components Analysis (CATPCA). This technique is now available in SPSS and is applied for this study for developing a composite index of multidimensional poverty.

Having a representation of the data in the component form, every household is ascribed a 'score' on each derived principal component/object using factor loading (variance in the individual attribute) as a weight and then multiplying this score with the standardised value of variables. The 'factor score' (FS) of the first component, which explains the maximum amount of variation in the data, is preferred for assessing household multidimensional poverty.

Once the composite indicator in terms of the factor score is obtained for each household, one still has to define a procedure to identify the poor. To determine threshold or poverty cut-off point, another multivariate statistical technique is used. Cluster Analysis allows the classification of similar objects into groups, or more precisely, the partitioning of an original population into subsets (clusters) according to some defined distance measure. On this basis, the score of two clusters representing household status (poor and non-poor) is developed. It is found that households are grouped around positive and negative values of the factor score. Therefore, mean value of the distribution of the composite index is chosen as the cut-off point, or as a poverty threshold.

After having a poverty threshold and the household status in terms of score with respect to multiple deprivations, three aggregate indices (see Box-2) are estimated to give a picture of the extent and severity of multidimensional poverty in rural Pakistan.

The extent of human poverty in the household is represented by current and future levels of education deprivations. Two measures, illiteracy (head of household and spouse) and children out of school are included in this dimension¹². Children between the ages of 5 to 9, who are not attending school, are taken to compute out-of-school children at the primary level. Moreover, another indicator of education deprivation is included. Households in which no household member has completed five years of schooling are considered poor.

¹² Literacy is defined as the "ability of a person to read and write in any language with understanding"

No information regarding infant or child mortality and malnourishment is available in PSLM surveys. The dimension of health deprivation is therefore missing from the multidimensional poverty analysis due to absence of required information.

The housing quality dimension identifies people living in unsatisfactory and inadequate housing structures. It is represented by a series of variables. The housing structure is treated as inadequate if un-baked bricks, earth bound materials, wood or bamboo are used in the construction of a wall or the roof. Housing congestion is represented by households with only one room and if the number of persons per room is greater than 2. Access to basic utilities is an important aspect of everyday lives of people. Deprivation in this respect includes households with no electricity, households using wood or kerosene oil as cooking fuel, households with no safe drinking water availability and households with no landline or mobile telephone facility. Households which are lacking essential facilities such as kitchens, bathrooms and toilets are also seen as an important poverty dimension. Due to data constraints, only households lacking a toilet facility are included in the 'poor housing' dimension of multidimensional poverty.

To capture the poverty in endowments, non-ownership of house and non-ownership of essential household assets¹³ are added to the list of variables used to assess the household multidimensional poverty. Further, category of households with unemployed head is also treated as poor and included in this dimension.

3.2 Estimates of Multidimensional Poverty

Table 3.2 presents national and provincial estimates of multidimensional poverty for the year 2010-11. Multidimensional poverty is estimated with the help of component/object scores. These scores are derived after adjusting with mean and standard deviation (standardising). Thus, the estimates reflect relative poverty (or inequality) with reference to mean, and should not be interpreted as an absolute poverty¹⁴.

According to the table, 44 percent of rural people of Pakistan were in a state of multiple deprivations in the year 2010-11 and living in desperate conditions, and eventually

¹³ These assets are Iron, Fan, Sewing Machine, Radio, TV, Chair/Table and Watch/Clock.

¹⁴ It is worth to highlight that due to change in reference point, the estimates of this study which are derived in the rural context are not comparable with the results of Jamal (2012) which are estimated in the national context.

being socially excluded. As expected, highest incidence is observed in Balochistan province, where about 75 percent rural population is multidimensionally poor, followed by rural Sindh with an estimate of 57 percent. It is, however, important to reiterate the phenomenon which is also observed in the case of consumption poverty. The table reveals that the level of multidimensional poverty of rural Sindh is significantly higher than the poverty estimated for rural Khyber Pakhtunkhwa province.

	Head Count Index [Incidence]	Poverty Gap Index [Depth]	FGT2 Index [Severity]
Pakistan	43.97	11.72	4.89
Punjab	36.77	9.82	4.23
Sindh	57.07	15.32	6.14
Khyber Pakhtunkhwa	44.05	9.59	3.28
Balochistan	75.17	26.04	12.61

Source: Estimated from household level data of PSLM, 2010-11

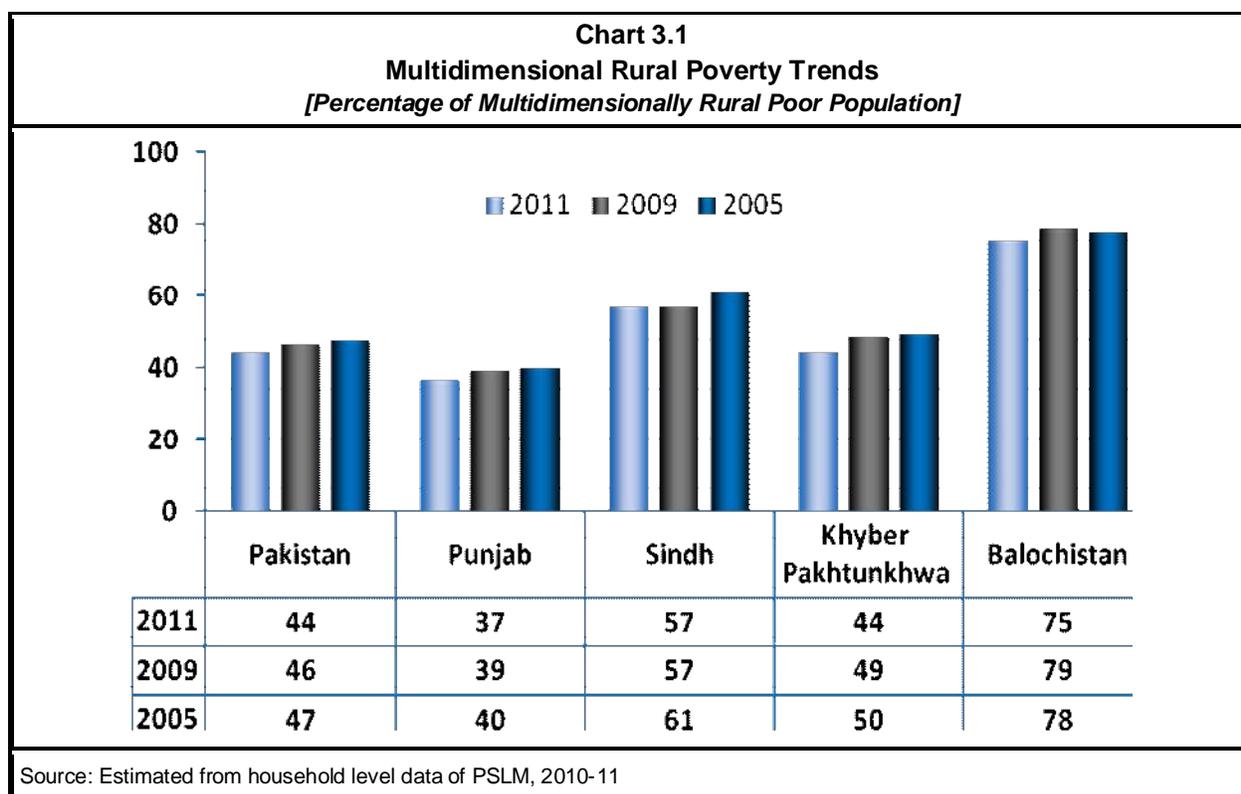


Chart 3.1 shows inter-temporal changes in the incidence of multidimensional poverty. The estimates show a slight decline (3 percentage points) in rural multidimensional poverty during 2005-2011 periods. Somewhat similar trends are evident in other provinces. The highest (6 percentage points) drop in rural multidimensional poverty is observed in Khyber Pakhtunkhwa province.

For policy perspectives, it is worth highlighting that consumption or income poverty measure only advocates the case for transfer policies and social safety-nets that alleviate poverty in the short run, whereas multidimensional deprivation measures (literacy, enrolment, household wealth, housing conditions, child mortality etc.) remain stagnant in the short-run, and document the recommendation of structural socio-economic policies that could alleviate intergenerational poverty in the long-term. Therefore, consumption poverty and multidimensional poverty are not a substitute to/for each other for policy formulation. Both provide different information in a differing context.

4. GEOGRAPHICAL INDICES OF MULTIPLE DEPRIVATIONS

One of the approaches¹⁵ of studying social exclusion is through the construction of deprivation indicators, often with the purpose of informing and guiding resource allocation among regions, or of supporting a case for resource targeting in a particular region. In the context of Pakistan empirics on poverty, an additional tool referred to as Index of Multiple Deprivations (IMD) is used for mapping spatial or geographical deprivations¹⁶. Unlike multidimensional or consumption poverty indices which first determine household status in terms of poverty before developing aggregate measures, the IMD is estimated by aggregating indicators at a particular geographical level. For instance, to arrive at the tehsil, district or provincial estimate of deprived or socially excluded population in terms of any specific indicator both numerator and denominator are correspondingly aggregated at tehsil, district or provincial levels. Moreover, multidimensional poverty described in the previous section provides an estimate of relative poverty¹⁷ and deprivations, whereas IMD provides the extent of absolute level of

¹⁵ Social exclusion is generally studied from one of three contrasting perspectives: a predominantly structuralist approach; an experiential approach informed particularly by cultural geography; and a more instrumental approach based on statistical indicators.

¹⁶ Various attempts to develop IMDs have been made. See Jamal, et al (2003), Jamal H. and Khan A. J. (2007) and Jamal (2012a)

¹⁷ A measure of relative poverty defines “poverty” as being below some relative poverty threshold. For example, the statement that “households with an accumulated income less than 50% of the median income are living in poverty” uses a relative measure to define income poverty.

multiple deprivations. In developing or underdeveloped countries, where both absolute and relative poverty (inequality) are prevalent, it is the absolute level of welfare which is preferred by development planners and policy makers because of the urgency associated with starvation, malnutrition, social exclusion and other afflictions.

4.1 Components of IMD

IMDs are made up of separate types or sectors of deprivation, each of which contains various indicators in order to give a broad measure of that type of deprivation. This exercise is based on the Pakistan Social and Living Standard Measurement (PSLM) survey datasets. Depending on the data availability in PSLM, the attempt is to choose indicators that reflect the poorest segment of society; thus, the IMD measures the extent of socially excluded population.

The selected sectors and indicators in constructing indices of multiple deprivations are schematized¹⁸ in Table 4.1, while a brief methodology for developing the composite index is furnished in Box-5. Following Jamal (2012a), this study considers 17 indicators to cover a range of social, housing and economic deprivations.

Education:	Illiteracy Rate (10 years and above) – Female
	Illiteracy Rate (10 years and above) – Male
	Out of School Children (5-9 Years) – Female
	Out of School Children (5-9 Years) – Male
Health:	Lack of Immunisation
	No Prenatal Health Care
	No Postnatal Health Care
	Did not Receive Tetanus Toxoid Injection
Housing Quality:	Household with Inadequate Roof Structure
	Household with Inadequate Wall Structure
	Congested Household (Households with only one room)
	Households without latrine facility
Housing Services:	Households with no electricity
	Households using unsafe (not covered) water
	Households with no telephone connection (landline or mobile)
	Households using inadequate fuel for cooking (wood, coal, etc.)
Economic Deprivation:	Below Average Household Assets Score

¹⁸ For detail description of selected variables, see Jamal (2012a).

Box 5
Method for Composite Indexing

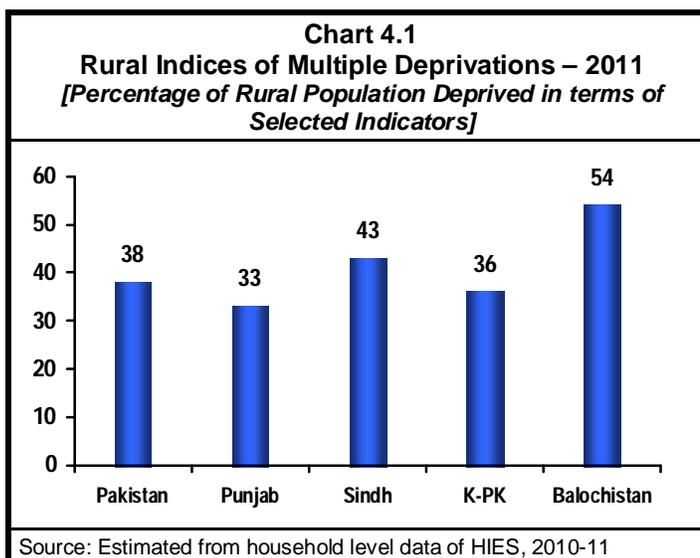
Composite indices represent the aggregate measure of a combination of complex development phenomena, and summarize multidimensional issues to support policy decisions. One of the issues in the context of composite indexing is the substitutability among component indicators. High deprivation, for instance in one sector, may be fully compensated for or counterweighted with the low deprivation in the other sector. This situation is not suitable in most cases where a minimum of all components are required for a combined index. The issue of substitutability may be resolved to some extent by taking the geometric mean of deprivation indicators instead of combining indicators using simple average. Following the UNDP methodology for combining HDI components and also for simplicity, geometric mean is preferred to develop composite index of multiple deprivation

Thus variables in each sector/domain are combined first, using the formulae of geometric mean which is simply the n th root of the product of n numbers. More generally, if the numbers are x_1, \dots, x_n , the geometric mean G satisfies $G = \sqrt[n]{x_1 x_2 \dots x_n}$.

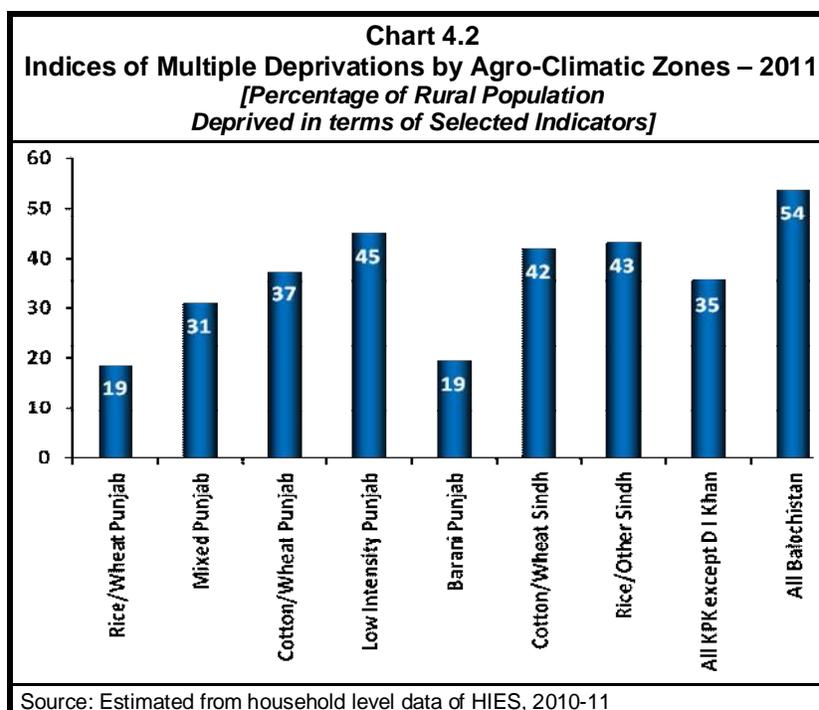
All variables are simple rates (percentage of the population affected by the type of deprivation) and may easily be combined. At the second stage, the overall index of multiple deprivations is developed by combining sectoral indices, developed at stage 1. Again for the sake of simplicity and keeping uniformity with the UNDP-HDI methodology, geometric mean is preferred to combine the various sectors. Thus overall IMD in this study is the geometric mean of five sectors/domains.

4.2 Estimated Indices of Multiple Deprivations

According to Chart 4.1 which displays the extent of rural deprivations, overall 38 percent population of rural Pakistan is deprived or multidimensionally poor in terms of selected indicators and dimensions (education, health, housing quality, housing services and economic). The provincial phenomenon is very much similar to the trends observed in consumption and multidimensional poverty. About 33 percent rural population of Punjab is deprived, followed by Khyber Pakhtunkhwa where the level of deprivation is 36 percent. The highest 54 percent deprived population is estimated for Balochistan province.



The extent of rural deprivation across agro-climatic zones is displayed in Chart 4.2. Similar to multidimensional poverty, the lowest deprivation is estimated for rain-fed (Barani) Punjab. Across agro-climatic zones of Punjab, the highest magnitude of IMD is observed in 'low-intensity', followed by 'cotton/wheat' Punjab. Major parts of both zones consist of districts of



south Punjab. Almost equivalent magnitude (42-43 percent) is estimated for two agro zones of Sindh. The phenomenon indicates that cropping patterns and other agricultural practices in different zones do not impact the standard of living in Sindh province. Again, the level of multiple deprivations in Khyber Pakhtunkhwa is less than the levels of deprivation observed in Sindh and Balochistan provinces.

Indices of Multiple Deprivations are also derived from PSLM datasets for the year 2009 and 2005. Table 4.2 furnishes the estimated IMDs for these years. A declining trend is evident throughout the period in the table. It is also evident that the inter-provincial gap in terms of rural

Table 4.2
Inter-Temporal Trends in Rural Deprivations

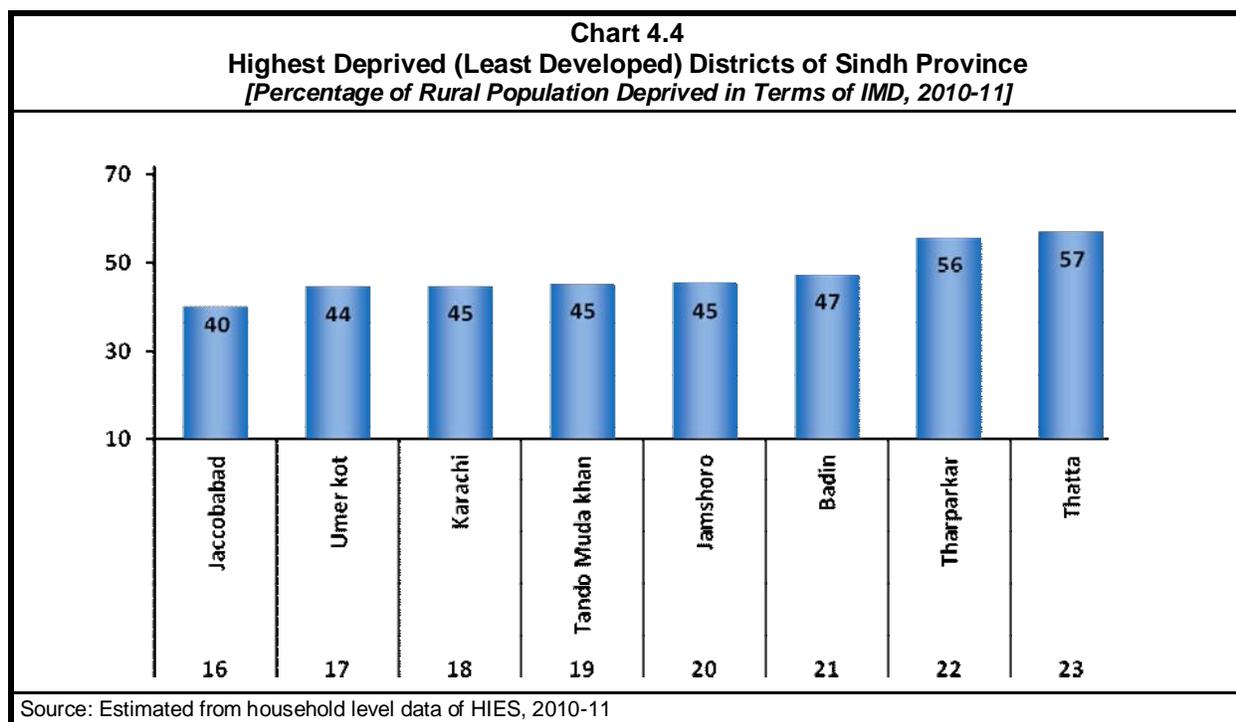
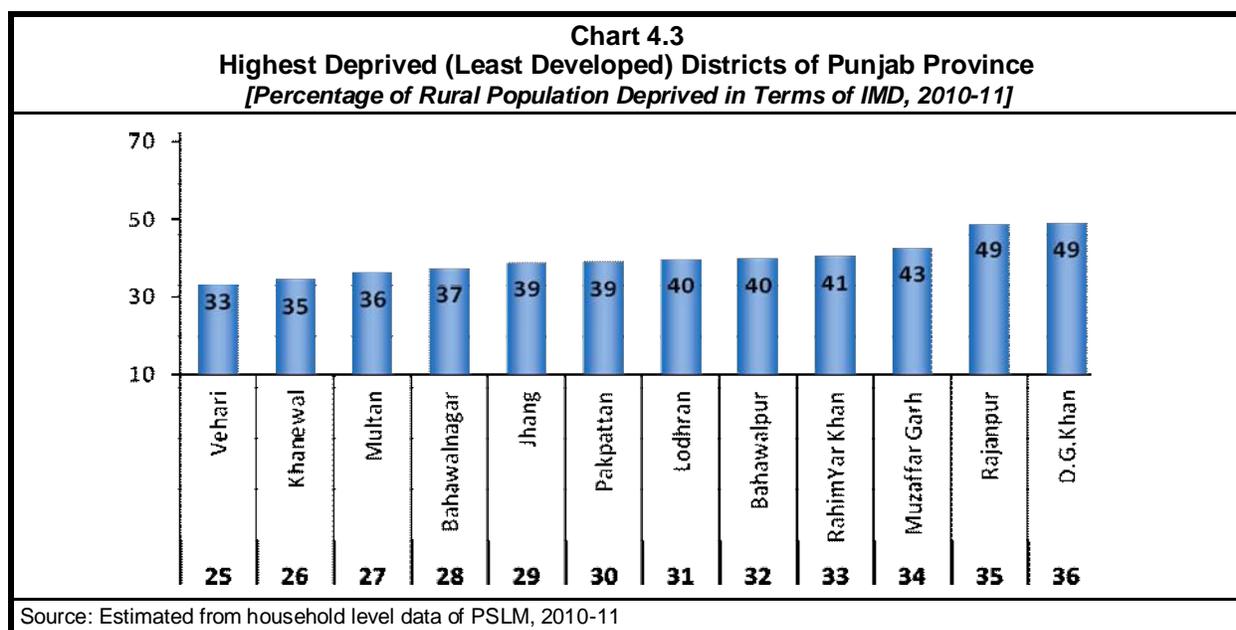
	2011	2009	2005
Pakistan	37.7	39.3	48.2
Punjab	32.7	33.5	40.8
Sindh	42.6	46.6	57.7
Khyber Pakhtunkhwa	35.9	38.3	48.4
Balochistan	53.6	56.6	67.6

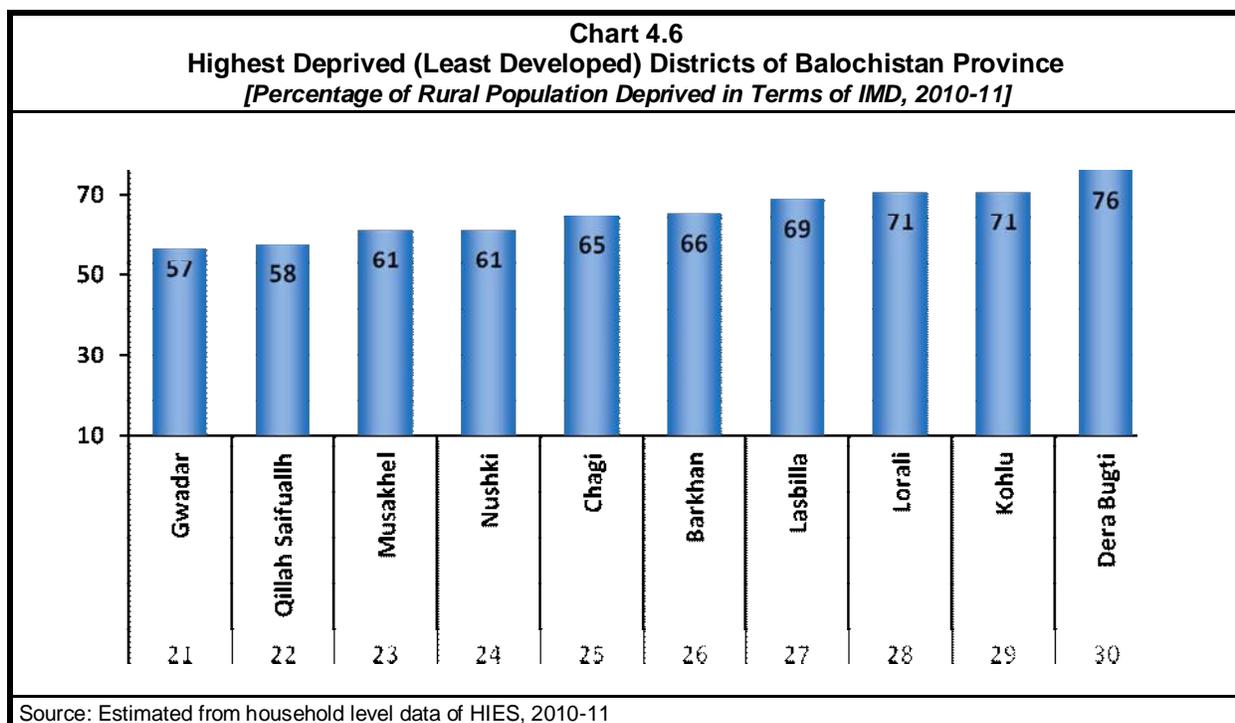
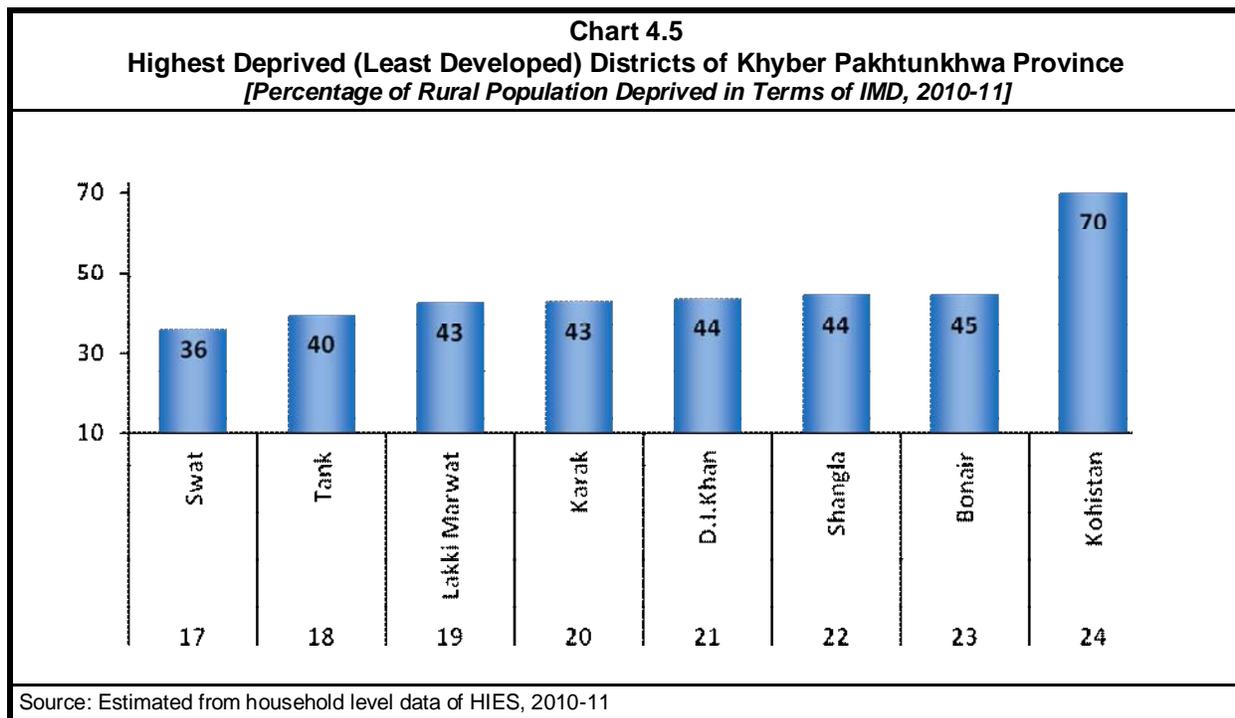
Source: Estimated from household level data of PSLM, various issues.

IMDs has declined somewhat, mainly due to the fact that the rate of decline in Punjab IMDs is lower than that of other provinces, especially in the period 2009-2011.

Highest deprived or least developed districts according to the rural Index of Multiple Deprivations are presented in Charts 4.3 through 4.6 for Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan provinces respectively for the year 2011.

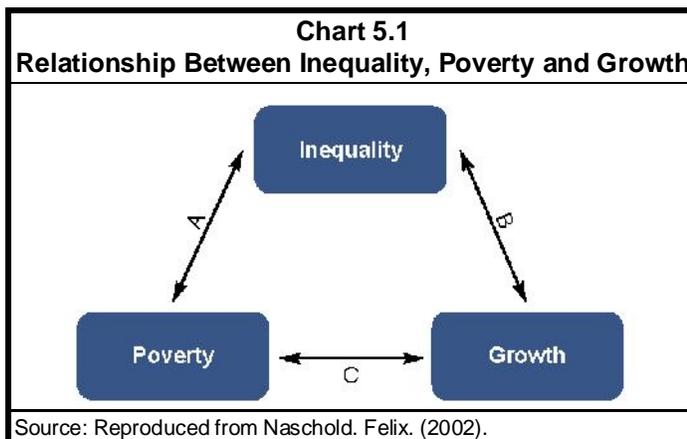
Instead of subjective or arbitrary classification, districts are distributed into three percentile groups after provincial ranking (low to high) with respect to magnitude of overall Index of Multiple Deprivations. These charts show districts that appeared in the third percentile group, which reveals the high level of deprivations. Provincial District ranking is indicated with the name of district, while the magnitude of IMD is shown just inside the vertical bar.





5. INCOME INEQUALITY

Income inequality and poverty affect each other directly and indirectly through their link with economic growth. These interact with one another through a set of two-way links (see Chart 5.1). Some of these links can be explored separately, but often one influences another causing indirect effects. For instance inequality can indirectly influence poverty, as inequality affects growth, and growth in turn influences poverty¹⁹.



Small changes in income distribution can have a large effect on poverty. A simple arithmetic example can help visualize this. Imagine that the share of national income that goes to the poorest 20 percent of Pakistan's population increases from 7 percent to 7.25 percent. A change in income distribution of one quarter of one percent would barely affect the Gini coefficient, but for the poor this represents about 4 percent increase in their total income. Such a small redistribution would have the same effect on poverty as doubling the annual growth (distribution neutral) of national income from 4 percent to 8 percent.

Various summary measures of inequality are furnished in Table 5.1 in order to describe the extent and nature of inequality in rural Pakistan. The Gini concentration ratio is the most widely used measure of inequality. The *Gini* provides an estimate of resource inequality within a population. It is the most popular and well-known measure of inequality, and summarises the extent to which actual distribution of resource differs from a hypothetical distribution, in which each person/unit receives an identical share. *Gini* is a dimensionless index scaled to vary from a minimum of zero to a maximum of one – zero representing no inequality and one representing the maximum possible degree of inequality.

¹⁹ In the context of Pakistan, the relationship is empirically examined in terms of poverty elasticity with respect to growth and income in equality by Jamal (2006).

The Gini coefficient for rural Pakistan is 0.37 for the year 2010-11, indicating a high level of income inequality. Provincially, Punjab has the most unequal distribution of rural income, followed by Khyber Pakhtunkhwa. Interestingly, Baluchistan – the province with the lowest income level in the country – has comparatively the most equal income distribution.

The high level of income inequality in Punjab is apparently a consequence of regional contrasts within the province. Middle Punjab has long been regarded as the first region to have adopted agricultural innovations, and was the site of the beginning of the 1960s green revolution in Pakistan. It is, however, also a region characterised by high population density and declining land-labour ratios. It has the lowest proportion of the workforce involved in agriculture, with relatively high landlessness -- the workforce is primarily absorbed in the industrial sector (both large and small scale). Lower Punjab is mainly agricultural, however, unlike middle Punjab, there continues to be a presence of powerful landlords with high unequal distribution of land. Land distribution patterns and non-agricultural development in lower (south) Punjab are similar to that of rural Sindh.

Between 2002 and 2005, the *Gini* coefficient for rural Pakistan shows no change in rural income inequality. However, a significant deterioration in rural income inequality is observed during the period 2005-2011. The rural *Gini* coefficient for per capita income has increased approximately 10 percent from 0.35 to 0.37. It is worth noting that consumption poverty has also significantly increased during this period. The provincial trend is somewhat different. Barring Punjab provinces, a downward trend in income inequality is observed during the period 2002-2005. For the period 2005-2011, the *Gini* shows an upward trend in Punjab and Khyber Pakhtunkhwa provinces, while a slight decline is observed in Sindh and Balochistan Provinces.

A limitation of the *Gini* coefficient as a measure of inequality is that it is most sensitive to the middle part of income distribution, rather than to that of extremes, because it depends on the rank order weights of income recipients and on the number of recipients within a given range. Thus, to capture small changes in extreme parts of income distribution, the lowest and highest quintile income shares are also computed to supplement the estimates of the *Gini* coefficient.

Table 5.1 also provides information regarding the share of income accruing to the lowest 20 percent (i.e. the lowest quintile) and to the highest 20 percent (i.e. the highest

quintile) of the population. Statistics with respect to income shares show that in 2004-05, the lowest quintile obtained just about 8.5 percent of the national income while the highest quintile obtained 43.4 percent of the income. By 2010-11, the share of the lowest quintile had declined to 8.1 percent and that of the highest quintile increased to 45.8 percent. As a result, the ratio of the highest to the lowest quintile has increased from 5.2 to 5.7. Like the *Gini*, the increase in the ratio of highest to lowest overall rural income share clearly indicates deterioration in the rural income distribution during the period 2005-11.

	2001-02	2004-05	2010-11
<i>Gini Coefficients</i>			
Pakistan	0.357	0.347	0.373
Punjab	0.365	0.373	0.403
Sindh	0.325	0.284	0.278
Khyber Pakhtunkhwa	0.349	0.300	0.347
Balochistan	0.295	0.287	0.230
<i>Income Share of the Lowest 20% of the Population</i>			
Pakistan	8.0	8.5	8.1
Punjab	7.2	7.5	7.2
Sindh	8.9	9.3	10.1
Khyber Pakhtunkhwa	8.1	9.0	8.1
Balochistan	9.4	9.5	10.3
<i>Income of the Highest 20% of the Population</i>			
Pakistan	43.2	43.4	45.8
Punjab	44.5	45.4	48.3
Sindh	41.9	38.0	38.5
Khyber Pakhtunkhwa	44.1	39.4	43.6
Balochistan	38.8	38.8	34.3
<i>Ratio of the Highest to the Lowest</i>			
Pakistan	5.5	5.2	5.7
Punjab	6.2	6.1	6.7
Sindh	4.7	4.1	3.8
Khyber Pakhtunkhwa	5.5	4.4	5.4
Balochistan	4.1	4.1	3.3
Source: Estimated from unit record household level data of HIES, various issues.			

5.1 Income Inequality across Farm and Non-farm Households

Rural households are generally distinguished in accordance with their access to agricultural land. According to the latest Pakistan Agriculture Census 2010, only 34 percent of rural households are engaged in the crop sector.

However, this percentage is somewhat higher in Khyber Pakhtunkhwa and Balochistan provinces; the lowest proportion is observed in Sindh province (Table 5.2). Thus it is worth estimating separate levels of income inequality across farm and non-farm households. The inequality coefficients for diverse sources of income associated with the nature of primary activities will provide some clue regarding the sources of overall income inequality in rural Pakistan.

	Pakistan	Punjab	Sindh	K-PK	Balochistan
Non-Agriculture	49	50	54	39	23
Agriculture	51	50	46	61	77
Livestock	17	14	26	11	24
Farm	34	36	20	50	53

Source: Agriculture Census 2010, (Estimated from Table 8.1)

Table 5.3 furnishes per capita income inequality in terms of Gini coefficients for farm and non-farm rural households. Interesting observations emerge from the table. High magnitudes of Gini are observed in farm households except in Khyber Pakhtunkhwa province. The difference in the level of

	Farm Household	Non-farm Households
Pakistan	0.419	0.313
Punjab	0.451	0.319
Sindh	0.315	0.247
Khyber Pakhtunkhwa	0.326	0.363
Balochistan	0.244	0.244

Source: Estimated from household level data of HIES (2010)

inequality is quite significant in Punjab and Sindh provinces – the agriculture heartland of the country. In contrast, insignificant differences with respect to Gini coefficients are observed in the provinces which have a tiny share in national agriculture value added.

The significant disparities in the magnitude of income inequality, as evident in Table 5.3 clearly indicate the necessity for formulating a different set of policies for farm and non-farm households to alleviate poverty as well as to improve income distribution.

5.2 Land Distribution Profile

Among the various sources and determinants, skewed land distribution is a major constituent part of rural income inequality. According to Adams and He (1995), “agricultural income makes the largest contribution to overall inequality. Depending on the year, agricultural income accounts for between 35 and 45 percent of overall income

inequality. This is largely because agricultural income is strongly correlated with landownership, which is distributed quite unevenly both in the area of the report and in rural Pakistan as a whole". Their study was based on a rich panel of data of rural households of four districts of Pakistan. Naschold (2009), who also worked on the above panel dataset, concluded that "land ownership is a key to explaining the level of inequality, but not its (inter-temporal) changes". Therefore to observe the level as well as changes in the pattern of distribution of land ownership in rural Pakistan, Tables 5.4 and 5.5 have been developed from agriculture census data.

Table 5.4 which furnishes the size analysis of farm holdings on top and bottom tails of land distribution, points towards a highly unequal distribution of land. On the lower tail, 68 percent of farms are holdings of less than five acres and the total area under such farms comprises 21 percent of total farm area. In comparison, only one percent farms have 50 acres or more: they hold 21 percent of total farm area. The land distribution in Punjab province seems relatively better than that of Sind Province, as one percent farms with 50 acres or more hold 8 percent of total farm areas of the province. As expected, the distribution is quite different in

	Less Than 5 Acres		50 Acres and More	
	Farms	Area	Farms	Area
Pakistan				
1990	54	13	2	28
2000	62	17	2	23
2010	68	21	1	21
Punjab				
1990	53	14	2	27
2000	62	19	1	15
2010	68	27	1	8
Sindh				
1990	36	8	5	41
2000	43	10	4	29
2010	51	12	3	23
Khyber Pakhtunkhwa				
1990	72	25	1	16
2000	81	33	1	17
2010	83	37	1	11
Balochistan				
1990	26	3	10	57
2000	30	4	8	49
2010	40	4	7	63

Sources: Agricultural Censuses (1990, 2000 and 2010)

Khyber Pakhtunkhwa and Balochistan provinces which possess more or less a phenomenon of subsistence agriculture. The Khyber Pakhtunkhwa province has the highest percentage (83 percent) of farm holdings of less than 5 acres, while in Balochistan only 7 percent farms hold 63 percent of total farm area of the province.

Although the size analysis of farm holdings presented in Table 5.4 gives useful insights, a summary measure of inequality in land ownership facilitates a quick comparison of distribution across regions and over time. The famous and widely used Gini coefficient

of inequality²⁰ is applied to the data on proportion of farms and land area owned. The estimated magnitudes of Gini are furnished in Table 5.5. Although the estimated Gini for Pakistan is stagnant at the level of 0.63 since 1990, significant variations across provinces are evident. The table also reveals a decreasing trend in Punjab and increasing trends in Sindh and Khyber Pakhtunkhwa provinces. The highest inequality in land ownership in terms of Gini coefficient is observed in Balochistan province.

	Pakistan	Punjab	Sindh	K-PK	Balochistan
1990	0.63	0.59	0.57	0.61	0.66
2000	0.63	0.58	0.59	0.63	0.65
2010	0.63	0.55	0.60	0.62	0.75

Sources: Agricultural Censuses (1990, 2000 and 2010)

5.3 Impact of Agriculture Prices on Income Distribution

Although government involvement in the market for important food and cash crops has changed substantially over time, it still intervenes to stabilise prices of major crops and agriculture inputs. Recently, during the last five years a spike in the commodity prices, especially cotton and rice has been observed with the government claiming that it will not only boost production but will also improve the income of growers. It is also argued that subsequently the increase in rural income will not only support the industrial and service sectors through higher consumption, but will also benefit the poor through trickle-down phenomenon.

The higher commodity prices provide incentive to growers to bring more acreage under cultivation; generally there exists a direct and positive correlation between procurement, support or expected crop prices and the supply. A rough picture²¹ of the relationship

²⁰ *Gini* coefficients for this exercise are computed from the grouped data of Agricultural Censuses and hence the magnitudes of coefficients might be different if compared with the *Gini* computed from individual farm-level data. Due to aggregation bias, the estimates from grouped data, in general are higher. The standard formula for computing *Gini* for grouped data is furnished below.

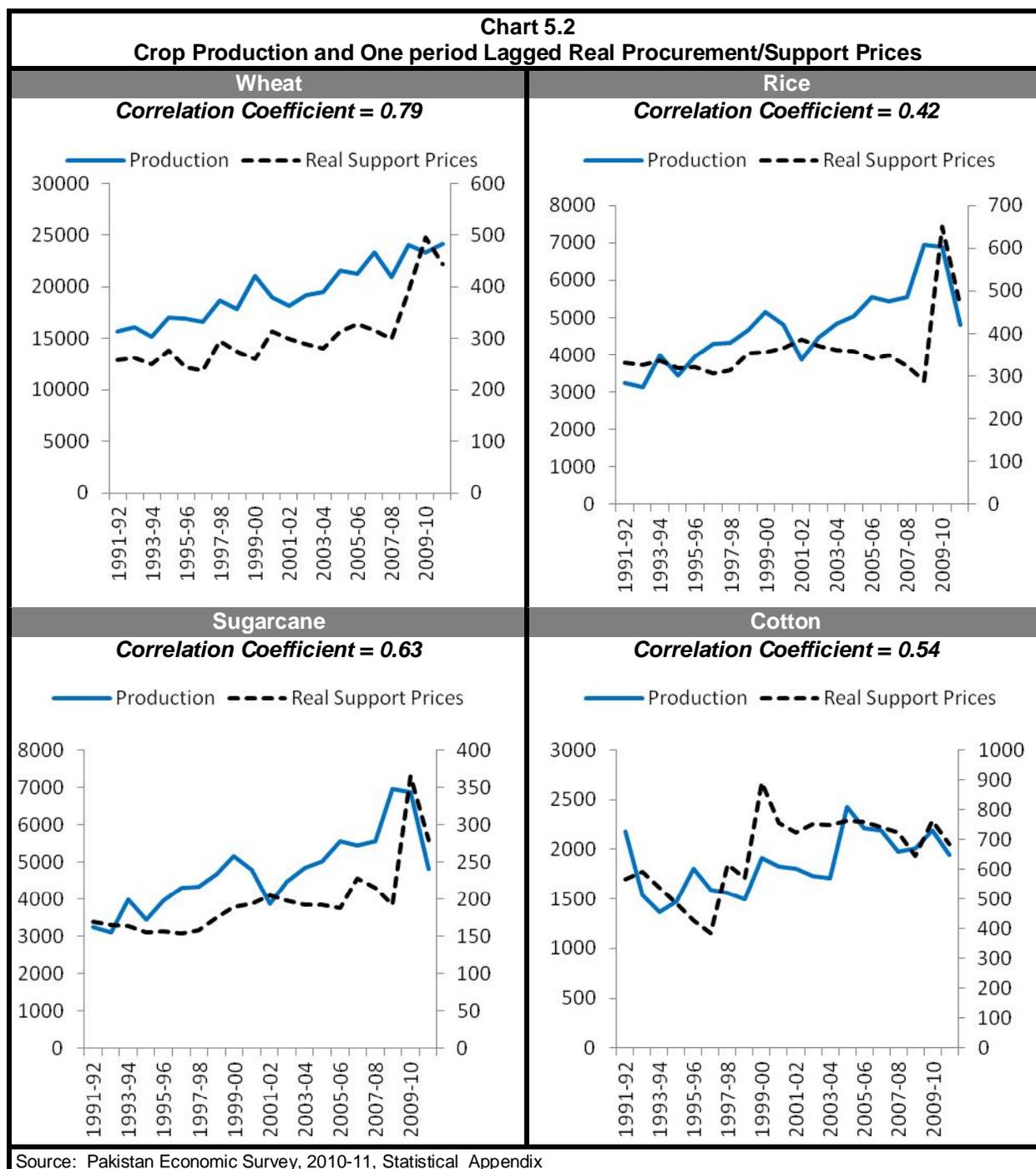
$$Gini = \left| 1 - \frac{\sum_{i=1}^N (\sigma Y_{i-1} + \sigma Y_i)(\sigma X_{i-1} + \sigma X_i)}{2N} \right|$$

where;

- N = Number of Categories
- σ = Cumulative Distribution of Values
- Y, X = Proportion of farms and land area owned respectively

²¹ Usually, an econometric model of price responsiveness is estimate to determine the supply elasticity. However, it is beyond the scope of this study. In the context of Pakistan, the short-run supply elasticities with respect to prices were estimated at 0.228, 0.715, 0.407 and 0.524 for wheat, cotton, rice and sugarcane respectively by employing traditional econometric technique. However, the study is quite outdated and has used the relevant data upto 1986 (See Mubarik, 1988).

between support/procurement prices and crop production is portrayed in Chart 5.2 by plotting crop production and one year lagged real support prices. The correlation coefficients are also computed to provide a summary of the statistical relationship. The highest price responsiveness with the correlation coefficient of 0.79 is observed in case of wheat crop, while the lowest (0.42) is estimated for rice crop.



Nonetheless, the pertinent concern here is to explore how benefits of rising crop prices are distributed among rural households. Due to the paucity of relevant panel micro-level farm data, no systematic study is available to verify the general perception that the policy of support price improves rural income distribution; eventually income disparity in rural areas has widened as a result of rising crop prices. It is argued that:

- Incomes from the crop sector are roughly proportional to the distribution of land which is quite skewed and as such any favour to the crop sector would help large landlords more than small farmers.
- Only 34 per cent of the rural population is engaged in the crop sector, and a vast majority of them are small landholders. This means that only a small proportion of population in the rural areas stands to gain from increasing crop prices.
- The transfer of additional cash has widened income disparity in rural society even if many small farmers have also benefited from the soaring crop prices because the “trickle-down” has been uneven and limited.

In the case of the wheat crop the contention of ‘marketable surplus’ is often cited to strengthen the argument of worsening rural income distribution due to the rising prices. The Pakistan Agricultural Prices Commission (APCOM) has conducted a survey in the major wheat surplus districts in Sindh in

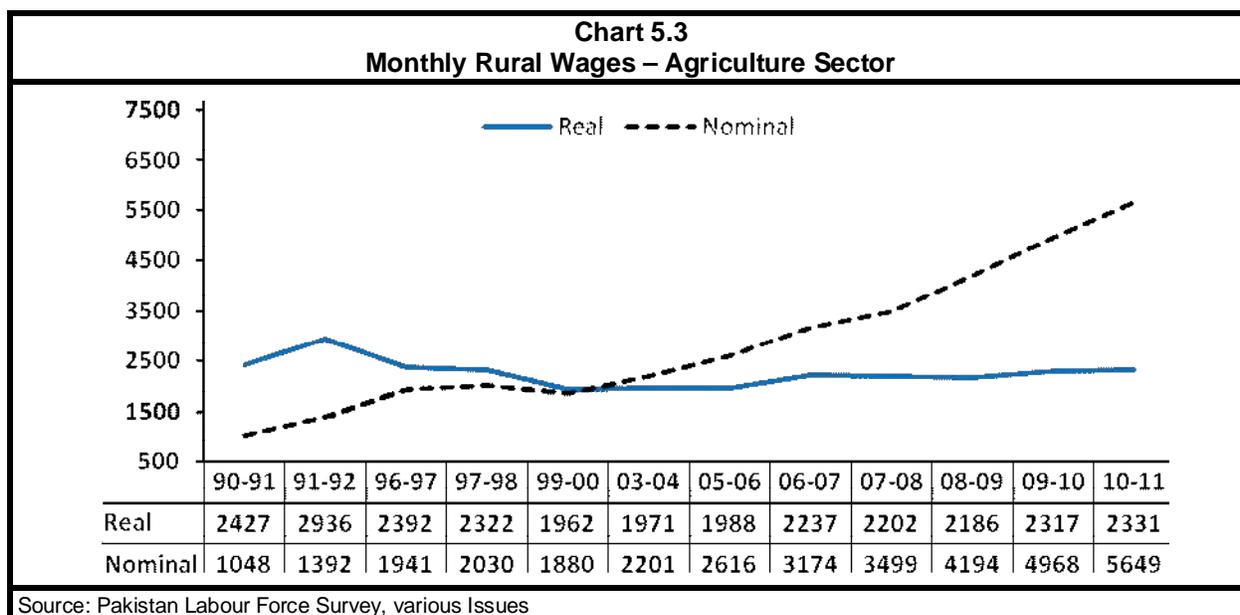
Farm Size	Percentage Share in Total Sale of Wheat Crop	
	Sindh	Punjab
< 12.5 Acres	8	11
12 to 25 Acres	11	22
25 to 50 Acres	16	23
More than 50 Acres	65	44

Source: Dorosh and Salam (2006). They calculated these estimates using APCOM survey data from Salam, et al (2002)

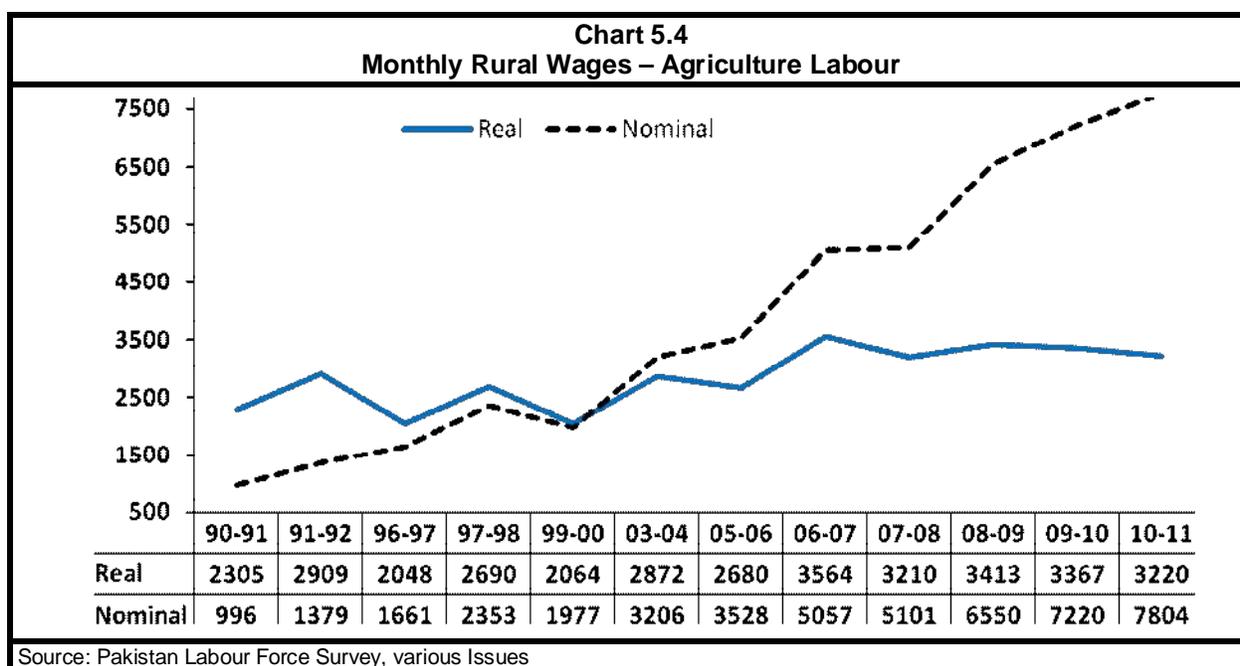
1997 and in Punjab in 1998. According to this study (Dorosh and Salam 2006), only 8 and 11 percent share in total sale of wheat crop goes to small farmers (< 12.5 Acres) in Sindh and Punjab provinces respectively. Table 5.6 highlights the share in sale of wheat across farm size. Dorosh and Salam (2006) did not disaggregate the share of farmers with land up to 5 acres, which is in fact the target group for poverty reduction strategies.

An attempt is also made to explore the trickle down phenomenon in terms of rural wages. Pakistan Labour Force Surveys (LFS) report wages in overall agriculture (agriculture, livestock, hunting, forestry, logging and fishing) sector as well as wages of market oriented skilled and subsistence agricultural and fishery workers. To monitor the trend in rural wages since 1991, LFS data is used for plotting monthly nominal and real

(adjusted with CPI) wages. Charts 5.3 and 5.4 furnish the trend for overall agriculture sector and for skilled workers respectively.



According to these charts, real wages for overall agriculture sector have declined in the 90s and since then are almost stagnant. However, an upward trend is observed in the case of skilled agriculture workers in the first half decade of 2000s, while in the later half a slight declining trend is evident. Thus the initial analysis of trends in rural wages apparently does not indicate the existence of the trickle down phenomenon.



6. SOCIAL PROTECTION FOR POOR

The rural poor are not a homogeneous group and are generally distinguished according to their access to agricultural land: cultivators have access to land as small landowners and tenants, and non-cultivators who are landless and unskilled workers. Thus, besides the standard household risks of sickness, mortality, fire, theft, and unemployment, rural households, most of which derive their livelihoods from the land, face the additional risks of droughts, floods, pests and diseases affecting their crops and livestock. A summary of a variety of risks is furnished below (Box-6) to comprehend the source, nature and vulnerability of the rural population. Nonetheless, rural dwellers regularly face multiple risks and very large proportion of the rural population in developing countries, including Pakistan, still does not enjoy social protection.

Box 6 Risks Facing the Rural Poor	
Nature of Risks	People at Risks
Crop production risks (drought etc.)	Smallholders with little income diversification and limited access to improved technology (HYVs) Landless farm labourers
Agricultural trade risks (disruption of exports or imports)	Smallholders who specialise in an export crop Small-scale pastoralists Poor Households that depend on imported foods
Food price risks (sudden price rises)	Poor, net food-purchasing households, including deficit food producers in rural area
Employment risks	Wage-earning households and informal sector employees (in peri-urban areas and, when there is a sudden crop production failure, in rural areas)
Health risks (infectious diseases resulting in labour-productivity decline)	Entire communities, but especially households that cannot afford preventive or curative care, and vulnerable members of these households
Political and policy failure risks	Households in war zones and areas of civil unrest Households in low-potential areas not connected to growth centres via infrastructures
Demographical risks (individual risks affecting large groups)	Women, especially those without education Female-headed households Children at weaning age The aged
Source: Reproduced from Wermer (2008)	

Social protection initiatives, which generally transfer income or assets to the poor, are designed to protect vulnerable people against livelihood risks, and seek to enhance the social status and rights of the marginalised. Effectively administered and carefully targeted social protection policies and measures increase employment, reduce loss of

human capital, and prevent people from falling into poverty as a result of financial or economic shocks. Proficient protection measures form a key component of social policy and promote social cohesion. According to Barrientos (2010), the broader developmental role of social protection in developing countries involves three main functions: (i) to help protect basic levels of consumption among those in poverty or in danger of falling into poverty; (ii) to facilitate investment in human and other productive assets which alone can provide escape routes from persistent and intergenerational poverty; and (iii) to strengthen the agency of those in poverty so that they can overcome their predicament.

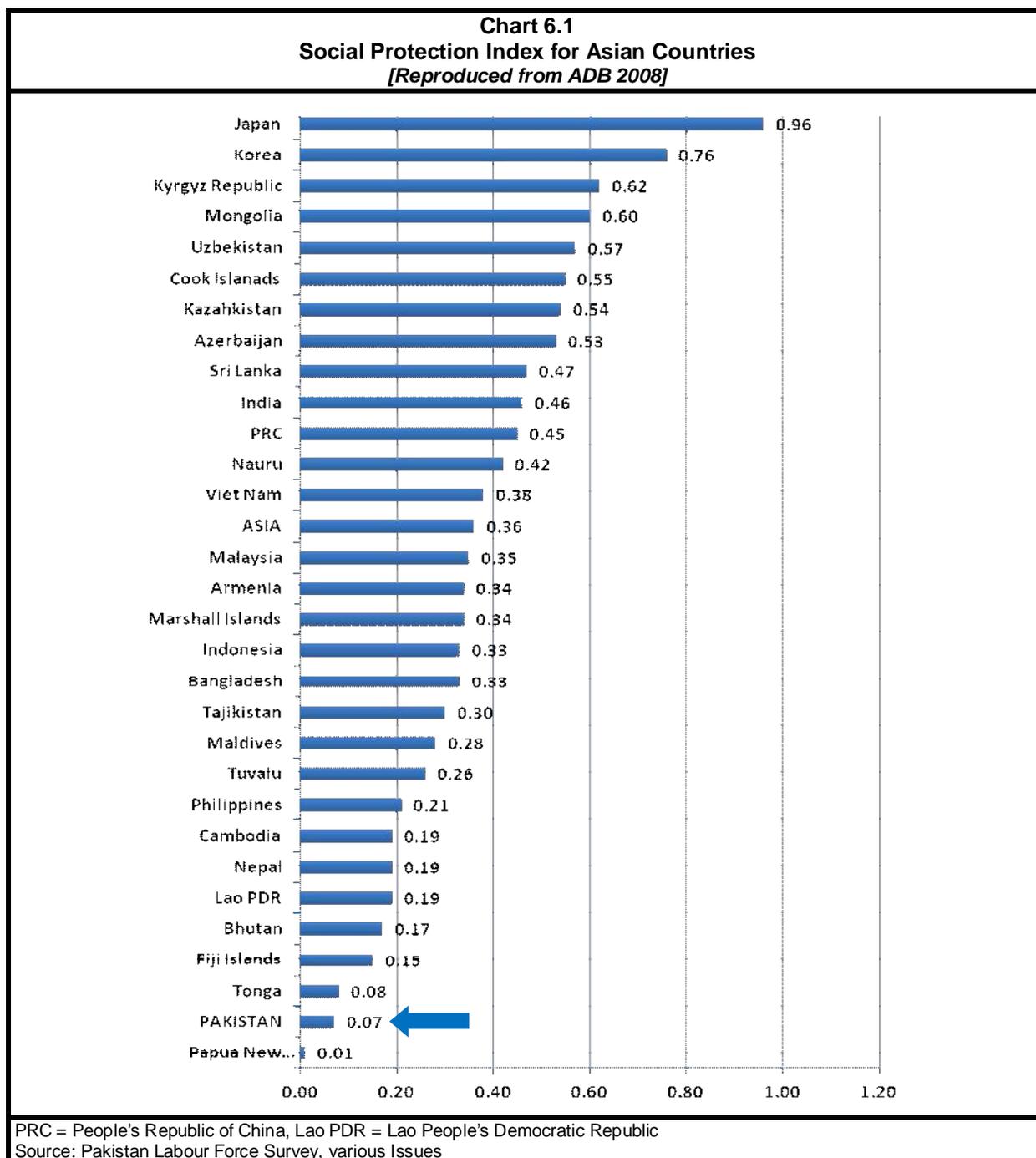
Unfortunately, in the context of Pakistan there is no clearly articulated government social protection framework. Various social security schemes and cash assistance programmes are developed largely as a series of ad-hoc responses to problems raised by particular circumstances or recommended by international donor agencies (Jamal, 2010). The Poverty Reduction Strategy Paper (PRSP) also highlights the fact that the “social protection framework contains duplication and overlapping programmes and recommends working towards an overall integrated and efficient social protection strategy”.

An effort was made to draft a comprehensive social protection strategy by the Planning Commission. Consequently, the National Social Protection Strategy (NSPS) was made public in 2008 (Government of Pakistan, 2008). It was the first comprehensive official statement with respect to social protection, and was based on detailed review of existing programmes and government interventions. Most of the programmes included in the NSPS were federal government programmes. Although the NSPS was formally adopted by the government, no progress was made towards its implementation. Apparently it is discarded due to the economic downturn and the new seventh National Financial Award.

Besides design failure and lack of consistency and coherency in various social protection programmes, the current coverage is also fairly low.

The Asian Development Bank (ADB) has developed a Social Protection Index (SPI) for Asian countries. The index is a composite measure of four summary social protection indicators (cost, coverage, distribution, Impact) and ranges from zero to one. According to ADB (2008), the overall range of SPI values is from .01 (Papua New Guinea) to 0.96 (Japan) with an average of 0.36 during 2007. Not surprisingly, Pakistan stands at the

lowest second position with a value of 0.07, just above the Papua New Guinea (see Chart 6.1) and far below the values for India and even Bangladesh. However, as pointed out by Gazdar (2011) Pakistan's social protection system has expanded quite dramatically since 2008; it may be possible that the magnitude of the index would be different now. Conversely, it is also a reality that the poverty incidence has also increased since the publication of the ADB report.



The coverage of public transfers and the extent of private philanthropy can also be ascertained from household data. Thus, the size of public transfers and philanthropy is estimated from the latest available Household Integrated Economic Survey (HIES, 2010-11). The estimates show that overall 1.2 percent households are receiving social assistance from public and private sources. Although the rural share is relatively large (0.4 urban and 1.6 rural), a minute percentage reveals extremely low coverage of poor households to the social assistance intervention.

According to Table 6.1, about 0.8 and 0.7 percent rural households affirmed the receipt from government institutions and from private sources respectively. The table also highlights the role of NGOs in Khyber Pakhtunkhwa and Balochistan provinces. About two percent households confirmed the receipt of private philanthropy including NGOs, against 0 and 0.4 percent in Sindh and Punjab provinces respectively. With respect to public transfers, Punjab's share is the largest (1.3 percent), while no household reported public transfers in Balochistan province. On average, rural households reported the receipt of Rupees eighteen and ten thousand per annum from public transfers and private philanthropy respectively.

	Percentage of Rural Households who Confirmed Receipt of Transfer Payment		Payment Received <i>[Average Rupees per annum per Household]</i>	
	Public Transfers	Private Philanthropy	Public Transfers	Private Philanthropy
Punjab	1.3	0.4	18027	11413
Sindh	0.2	0.0	21185	0.0
Khyber Pakhtunkhwa	0.5	2.3	14850	9730
Balochistan	0.0	1.8		9634
Total	0.8	0.7	17834	10438
Note: Public Transfers = Receipt from public sector (Federal/Provincial/District/Semi Governments) Private Philanthropy= Receipt from private sector ((Relatives/Non-relatives/NGOs/trust etc.) Source: Estimated from household level data of HIES, 2010-11.				

Box-7 which is reproduced from Jamal (2007) furnishes the inventory of programmes and instruments of social protection in Pakistan, while the salient features of broad categories are described below:

Box 7		
A Schematic View of Social Protection Instruments in Pakistan		
Category/Instruments	Benefits	Financing
1. Social Security		
Government Servants Pension Fund <i>[for Government Employees]</i>	<ul style="list-style-type: none"> ▪ Provident Fund ▪ Old Age Pension 	<ul style="list-style-type: none"> ▪ Employees contribution ▪ Budgetary Expenditure
Employees Social Security Institutions <i>[for Private Formal Sector Employees]</i>	<ul style="list-style-type: none"> • Health Services • Cash Support 	<ul style="list-style-type: none"> ▪ Employees contribution
Public Sector Benevolent Funds and Group Insurance <i>[for Public Sector Employees]</i>	<ul style="list-style-type: none"> • Benevolent Fund • Group Insurance 	<ul style="list-style-type: none"> ▪ Employees contribution
Workers Welfare Funds <i>[for workers of registered establishment]</i>	<ul style="list-style-type: none"> • Cash Support • In-Kind Support • Housing facilities 	<ul style="list-style-type: none"> ▪ Employees contribution ▪ Employers' contribution
Workers' Children Education Ordinance <i>[for workers of registered establishment]</i>	<ul style="list-style-type: none"> • Free education of children 	<ul style="list-style-type: none"> ▪ Employers' contribution
Employees Old-Age Benefits Institutions <i>[for workers of registered establishments]</i>	<ul style="list-style-type: none"> • Old age pension • Invalidity pension • Survivor's pension • Old age cash grant 	<ul style="list-style-type: none"> ▪ Employers' contribution ▪ Budgetary Expenditure
2. Social Assistance		
Zakat <i>[for poor, needy and destitute population]</i>	<ul style="list-style-type: none"> • Cash Support 	<ul style="list-style-type: none"> • Private contribution
Pakistan Bait-ul-Mall <i>[for poor, needy and destitute population]</i>	<ul style="list-style-type: none"> • Cash Support • In-Kind Support 	<ul style="list-style-type: none"> • Federal Budget • Private contribution
Benazir Income Support Program <i>[for poor, needy and destitute population]</i>	<ul style="list-style-type: none"> • Cash Support 	<ul style="list-style-type: none"> • Federal Budget
3. Labour Market Programs		
Peoples Works Program <i>[for unemployed labour, especially rural labour]</i>	<ul style="list-style-type: none"> • Wages 	<ul style="list-style-type: none"> • Federal Budget
People's Rozgar Program <i>[for unemployed population, especially youth]</i>	<ul style="list-style-type: none"> • Credit with subsidised interest rate 	<ul style="list-style-type: none"> • Federal Budget • National Bank
4. Micro and area-based safeguards		
Micro-Finance <i>[for poor]</i>	<ul style="list-style-type: none"> • Small Loans 	<ul style="list-style-type: none"> • Credit line by donors • NGOs and private sector
5. Child Protection		
Food Support Programme of Bait-ul-Mall <i>[for children in poorest households]</i>	<ul style="list-style-type: none"> • Conditional Cash grant 	<ul style="list-style-type: none"> • Federal Budget

6.1 Social Security Instruments

All existing social security schemes are in the formal sector of the economy and designed for the employed labour force and retirees. These schemes generally provide benefits regarding contingencies of sickness, invalidity, maternity, old age, and work-related injury. The programmes in this category include Government Servants Pension Fund, Provincial Employees Social Security Scheme or Employees Social Security Institutions, Public Sector Benevolent Funds, Workers Welfare Funds, Workers' Children Education Ordinance and Employees Old Age Benefits Institutions.

The major shortcoming of all social security schemes is that workers from the agriculture sector, the informal economy and those in the formal sector, who are either employed temporarily through contractors or in establishments with less than ten workers, are not covered through these programmes. The agriculture sector which constitutes about 61 percent of the labour force, is not only excluded from the social security net, but is virtually exempt from existing laws pertaining to protection of workers in terms of working conditions, conditions of employment, health, and safety at workplace. Similarly other sectors which are predominantly informal in character such as construction, transport, wholesale and retail trade sectors have no coverage in social security schemes. According to Bari et al (2005), it is estimated that less than 4 percent of the non-agriculture labour force actually benefits from the entitlement built into these programmes.

Thus the rural poor, who comprise the majority of the poor population, are not entitled to get protection against various risks through the social security instruments. The phenomenon clearly indicates a serious flaw in the design of social security schemes, and necessitates developing special schemes for the rural poor like social insurance, old age benefits and agriculture insurance²² along with risk management and disaster risk reduction measures.

6.2 Programmes of Social Assistance

Social assistance schemes of cash or in-kind transfers are especially aimed at those who are outside the ambit of the formal labour market, and are considered poor or destitute.

²² The role of crop insurance in Pakistan is very limited. Insurance cover is provided to only those farmers who take bank loans for their crops or livestock. Higher than normal interest rate are charged to cover premium. Thus the current role of agriculture or crop insurance is not conducive to avert humanitarian disaster by protecting very poor populations. Moreover, there is much evidence that traditional crop loan insurance cannot provide solutions or subsistence farmers. Box-8 briefly describes the features of agriculture insurance in Pakistan.

Unlike Social Security Schemes, programmes of social assistance provide more relief to rural poor. The Benazir Income Support Programme (BISP), Zakat and Pakistan Bait-ul-Mall (PBM) are three institutions which provide unconditional financial cash or in-kind assistance to the poor and also assist in rehabilitation of needy and destitute individuals. Although the *Zakat*, PBM and BISP share a similar objective of providing basic support to the poorest households, they have different histories, target groups and financing mechanisms. A brief introduction of these programmes is given below.

Box 8	
Overview of National Crop Loan Insurance Scheme	
Agricultural insurance is relatively undeveloped in Pakistan. Livestock insurance which includes livestock: cattle, buffalo, small ruminants and poultry insurance was first introduced on a pilot basis in 1983 and is now available on a limited scale. Crop insurance is new and was introduced in 2008 under a public private partnership for a National Crop Loan Insurance Scheme. Since <i>rabi</i> season 2008/09 a group of ten insurance companies in conjunction with 20 commercial banks have been involved in the implementation of the national crop loan insurance scheme. Salient features of Pakistan mandatory crop loan insurance scheme are as under:	
PARTICIPATION	ALL commercial & private banks and Insurers registered with SECP
ELIGIBILITY	All borrowers receiving agricultural loans from banks. Covers is mandatory for loanees.
CROPS COVERED	All field crops (wheat, rice, maize, cotton, sugar cane, sunflower).
PERIOD OF INSURANCE	From time of sowing a transplanting till harvesting.
INSURED PERILS	A. Natural calamities: Excessive rain, hail, frost, flood, drought B. Crop related diseases such as viral and bacterial attacks or damage by locusts.
SUM INSURED	Sum insured is based on the per acre borrowing limits prescribed by the State Bank subject to a maximum of Rs 2000 000 per farmer per crop reason.
PREMIUM	Maximum 2% of amount insured per crop per season plus applicable levies. Bank will be responsible for collection and payment of premium to the insurer.
BASIS OF INDEMNITY	Claims for damage directly caused by the insured risks to be based on declaration of calamity by the competent authority (provincial or federal) in the area where the insured risk is located and such declaration is notified in the Gazette AND the final yield of the subject risk is less than 50 percent of the reference of the area. Indemnity is also subject to the name of farmer/borrower and the insured crop has been earlier declared.
REFERENCE YIELD	Three-year average yield of the particular area. The three years will be from the five preceding years discounting the best and worst years.
CLAIMS PAYMENT	Claims shall be payable to the banks by the insurers for credit to the insured borrower loan account. The maximum amount payable is the outstanding loan or the assessed amount, whichever is the lesser amount.
SPECIAL CONDITIONS AGGREGATE LIMIT OF LIABILITY	The maximum annual aggregate limit of liability of the scheme would be limited to 300 percent of the total premium. Insurers reserve the right for review of terms annually.
EXCLUSIONS	War, civil war, strikers, riots, terrorism etc. <ul style="list-style-type: none"> • Non-utilization or wrong utilization of loan. • Earthquake or volcanic eruption. • Loss before risk declaration or after harvesting. • Price fluctuations and loss of market.
Source: SBP, 2008, SBP task force report on crop loan insurance framework. Agricultural Credit Departments, State Bank of Pakistan.	

The Benazir Income Support Programme: The BISP was launched in late 2008 as the government's flagship social safety net programme with the immediate objective of mitigating the impact of the food, fuel and financial crises of early 2008. According to the BISP website, "In the year 2007-08, the sharp rise in oil prices and primary products in the international as well as domestic market resulted in double digit inflation, which almost halved the purchasing power of the people. Hence, there was an urgent need for direct and speedy relief to the underprivileged sections of the society. The Benazir Income Support Programme (BISP) is the Government of Pakistan's response to the said compulsions". Funded through the federal budget, the BISP has been initiated with an initial allocation of Rs.34 billion for the year 2008-09 which is 0.3% of the GDP for the year 2008-09, to cover 3.5 million families. The selected families (women) are paid cash assistance of Rs.1000 per month on quarterly basis. BISP is the only cash transfer programme in any developing country that identifies women as its primary beneficiaries.

BISP has evolved over the past few years into the country's main social safety net. The allocation for the financial year 2012-13 is Rs. 70 billion to provide cash assistance to 5.5 million families, which constitutes almost 18 percent of the entire population. Thus the Programme aims at covering almost 40 percent of the population below the poverty line (<http://www.bisp.gov.pk/>). Apart from cash assistance, BISP has taken special initiatives and provides long term interest free returnable financial assistance (*Waseela-e-Haq*), vocational and technical training (*Waseela-e-Rozgar*), health insurance coverage (*Waseela-e-Sehet*) and support to primary education (*Waseela-e-Taleem*). The coverage and scope of these initiatives are however limited.

An important feature of BISP is the targeting mechanism for identifying poor households. According to the BISP institution, attempts are made to minimise the inclusion and exclusion errors; underprivileged households are identified through a transparent, impartial and objective mechanism which gives equal chance to each one for applying to the Programme for enrolment for cash and various other benefits. For this purpose, a survey has been conducted, initially in 16 poor districts of Pakistan to assign a welfare score to each household. On the basis of a cut-off point, household status is determined in terms of poverty. Nonetheless, there are a number of criticisms on the methodology, design and content of the poverty score card, which makes the exercise doubtful. Moreover, a unique poverty score card and poverty cut-off point is used for both urban and rural areas which may enhance the chances of inclusion or exclusion errors.

Although the BISP has received unprecedented support and assistance from multilateral and bilateral donor agencies, financial sustainability and political preference is a major concern. BISP has been criticised for its close association with a particular political party (with the name of Benazir Bhutto) and critics discount the initiative claiming it as a means of attracting votes for the PPP rather than alleviating poverty. Thus the future of the BISP initiative in coming years is uncertain due to change of political regime as well as worsening macroeconomic and growth outlook.

Zakat: The institution of *Zakat* is a well established form of cash transfer in Pakistan. The programme, which was introduced in 1980, is entirely based on private contributions and administered by the government. Under the Central *Zakat* Council, there are provincial councils and further councils at each level of government. The lowest level, which also decides eligibility, is the Local *Zakat* Committee (LZSc). About 25 percent of the *Zakat* budget is distributed through institutions while the remaining 75 percent is disbursed to individuals through LZCs. However after devolution of the subject of *Zakat*, the Provinces are directly managing the distribution of *Zakat* and the beneficiaries. *Zakat* is disbursed under different programs, such as: financial assistance (*Guzara* Allowance), educational stipends, healthcare, *Eid* grants, assistance to leprosy patients, national level health institutions, and marriage assistance.

Unlike the BISP initiative, *Zakat* distribution does not have any transparent and accountable method of targeting. It is aimed at targeting the 'deserving needy', but no objective targeting tool (e.g. proxy means testing) is used. According to the World Bank (2007), "around 27 percent of monthly cash (*Guzara*) allowance beneficiaries and 37 percent of those receiving rehabilitation grants are not poor, accounting for 32 and 45 percent of the resources distributed under each modality". The document also reports evidences of both corruption and patronage in the *Zakat* distribution system. Eligibility criteria or the process of selecting beneficiaries is not transparent and often, provision seems based on access to influential patrons or willingness to pay a bribe. Decisions regarding who receives benefits are mostly guided by local power relationships. Sayeed (2004) also emphasised that there is no documented, institutionalised mechanism for the distribution of *Zakat* funds. To identify the beneficiaries in villages and neighborhoods, the Local *Zakat* Councils rely on individuals known to them, who are better off, more articulate members of the community. Usually the beneficiaries are those who are already involved in patronage relationships with the committee members.

Besides poor targeting, other major issues of social assistance through *Zakat* are the inadequacy of payment and low coverage. The adequacy of support can be further affected by administrative problems resulting in late release of funds. Bari et al (2005) argue that the programmes currently in operation have had only a marginal impact in alleviating the poverty of households living below subsistence level. The coverage and size of grants disbursed as individual transfers inadequately addresses the needs of the poorest households.

Pakistan Bait-ul-Mall: PBM was established as an autonomous body in 1992 with the objective of providing assistance to those groups of people that for certain reasons have been excluded or are not eligible to receive *Zakat*. This includes the minorities and certain sects of Muslims (Sayeed, 2004). The programme is financed from the grants of the federal government. However, it also receives small grants from the central *Zakat* fund, provincial government, national organisations, NGOs, international agencies and voluntary private donations. The PBM disburses to the poor under a wide variety of programs that encompass Food Support Programs, Individual Financial Assistance, Child support through the National Centre for Rehabilitation, and used for orphans support, rehabilitation through vocational training, education stipends, out-reach programme for poor patients, Dowry (*Jahez*) package for orphan girls and supply of wheel chairs, hearing aids, white canes, and artificial limbs to needy persons. PBM also provided ration bags to those affected by natural disasters such as the floods of Sindh and of Khyber Pakhtunkhwa. Like *Zakat*, there is no specific criterion with regard to targeting for the programmes of the Bait-ul-Maal.

6.3 Labour Market Intervention

The Public Works Programme is an important intervention for labourers of rural and semi-urban areas. Currently known as the Peoples Works Programme, it was termed the *Khushal* Pakistan Programme (KPP) and *Tameer-e-Watan* Programme in the tenures of the Pervez Musharraf and PML governments respectively. Peoples Works Programme (PWP) are the welfare programmes comprising of small development schemes for provision of electricity, gas, farm to market roads, telephone, education, health, water supply, and sanitation facilities to the rural poor.

6.4 Microfinance

Although micro-credit or microfinance provides financial services to the poor to allow them to become economically active, it is often criticised, in that although it has

investment and income enhancing impacts, is not a good mechanism for ensuring insurance against adverse shocks; and a viable microcredit programme cannot give guaranteed access to poor and vulnerable clients (Barrientos, 2006). Further, credit is not advanced at concessionary rates of interest and there is no element of explicit or implicit subsidy. Nonetheless, the Government of Pakistan in its PRSP-II document considers it an important intervention for poverty reduction.

Currently, microfinance services in Pakistan are being provided by Microfinance Banks (MFBs); Commercial Banks; Rural Support programs (RSPs) and non-governmental organisations (NGOs) with the Pakistan Poverty Alleviation Fund (PPAF) being wholesale provider of credit to NGOs. The finance is provided for microenterprises, agricultural inputs and livestock. About 56 percent of microfinance clients reside in rural areas.

The Pakistan Microfinance Network (PMN) is a network for organisations engaged in microfinance and is dedicated to improving the outreach and sustainability of microfinance in the country. It also aims to establish performance measures, enhance the capacity of retail microfinance institutions through specialised training, and promoting the financial transparency of such institutions. The PMN is well positioned with 95 percent of the total microfinance coverage and with the 20 leading microfinance institutions and banks as its members. According to PMN website, the sector has 2.4 million borrowers with gross loan portfolio of rupees 38 billion as of December 2012.

The Government of Pakistan sponsors microcredit schemes through three different institutions – the national and provincial Rural Support Programmes (RSPs), the Pakistan Poverty Alleviation Fund (PPAF) and the Microcredit Banks. RSPs are running microfinance operation as part of multidimensional rural development programme.

The National Rural Support Programme (NRSP) is Pakistan's largest multi-sectoral rural development programme, established in 1991 by the Government of Pakistan. NRSP is also the largest Rural Support Programme in the country in terms of outreach, staff and development activities. At present, it is operational in 54 districts of all the four provinces of Pakistan and Azad Jammu and Kashmir through regional offices. Programme districts are selected according to district poverty ranking from data available from national level surveys conducted by government and international organisations, and distributed among other Rural Support Programmes. A summary of coverage and outreach of Rural Support Programmes is furnished in Box-9.

Box 9
Coverage and Outreach of Rural Support Programs

The National Rural Support Programme (NRSP) was established in 1991. It is the largest Rural Support Programme in the country in terms of outreach, staff and development activities. NRSP's mandate is to alleviate poverty by harnessing people's potential and by undertaking development activities in Pakistan. It has a presence in 54 districts of all the four provinces and Azad Jammu and Kashmir through Regional Offices. As of June 2012, it has **333,511** active borrowers with gross loan portfolio of rupees **4.2 billion**.

The Punjab Rural Support Programme (PRSP) was incorporated in 1997. It is currently operating in 28 districts of the Punjab and through other interventions in partnership with government and donors. It aims to alleviate poverty and enhance income, empowerment of women and general improvement in the quality of life of the poor in rural areas of Punjab. As of June 2012, it has **73,944** active borrowers with gross loan portfolio of rupees **896.9 million**. / Rs. 896.9 million

The Sarhad Rural Support Programme (SRSP) was established in 1989. It is working in Khyber Pakhtunkhwa and parts of FATA. At the heart of the SRSP approach is the belief that marginalised communities and disadvantaged people have within them the capacity for self-help. In recent years because of its vast outreach in the communities, SRSP has had to play a prominent role in disasters that have hit Khyber Pakhtunkhwa, and as a result humanitarian work along with development, it has become a core competency of the organisation. As of June 2012, it has **3,121** active borrowers with gross loan portfolio of rupees Rs. **22.9 million**.

The Sindh Rural Support Organisation (SRSO) was established in 2003. It is the major Rural Support Programme in northern Sindh. SRSO is present in 9 districts of Sindh which include some of the remote and impoverished areas. The mandate of SRSO is to alleviate poverty by harnessing the people's potential, and to undertake development activities in Sindh. As of June 2012, it has **63,340** active borrowers with gross loan portfolio of rupees **985.01** million.

Thardeep Rural Development Programme (TRDP) was established in 1998. It is a non-profit organisation working in the rural areas of Tharparkar, Mirpurkhas, Dadu and Khairpur districts of Sindh. The programme is aimed at facilitating the rural communities in a way that they can be empowered to secure their rights with command over resources and capabilities to manage the process of sustainable development. As of June 2012, it has **55404** active borrowers with gross loan portfolio of Rs. **547.4 million**.

Source: Information is taken from the Pakistan Microfinance Network website.
<http://www.microfinanceconnect.info/index.php>

The majority of the NRSP loans are used for agriculture and livestock purposes, with 60 percent of the loans for agriculture purposes, 19 percent for livestock and 21 percent for entrepreneur development. More than 50 percent of the NRSP programmes area comprises arid zones and rain fed areas of the country, taking in view the main mandate of the organisation to eradicate poverty. NRSP manages one of Pakistan's biggest microcredit portfolios, with 333,511 active loans as of December 2012 with gross loan portfolio of rupees 4.2 billion. As part of its holistic approach, NRSP also provides various financial services to the members of Community Organisations (Cos) in rural areas to help them implement their Micro Investment Plans (MIPs).

7. SUMMING UP

This research presents a situation analysis by profiling rural Pakistan for poverty, inequality and social exclusion. A brief profile of social protection for rural population is also supplemented. Major findings of the study are highlighted below:

- It is estimated that overall about 39 percent of the rural population of Pakistan was poor in terms of household consumption during the year 2011. As expected rural poverty is lowest in the Punjab province and highest in Balochistan province. The magnitude of rural poverty is almost equal in Sind and Khyber Pakhtunkhwa, while poverty in Balochistan province is relatively higher.
- According to the analysis of consumption poverty at the levels of agro-climatic zones, the highest incidence of consumption poverty is estimated for “Low-Intensity Punjab” (mostly South Punjab and D.I. Khan of Khyber Pakhtunkhwa) zone followed by “Rice-Other Sindh” (lower Sindh) zone. The estimated poverty incidence of “Cotton/Wheat-Punjab” zone is also high. Again this zone consists of districts of south Punjab.
- Rural poverty has dropped with an annual growth rate of 4 percent during 2001-2005. Again, during 2004-05 and 2010-11, estimated poverty incidence has gone up with an annualised growth of 4 percent.
- According to the result of multivariate logit analysis, family size, dependency ratio, wage employment of head and non-farm households are significant positive correlates of consumption poverty. In contrast, negative correlates of poverty include; education of head and spouse and household wealth (ownership of land, livestock, residential property, household assets etc.). However, livestock plays the most significant role in the poverty reduction.
- The analysis of micronutrient deprivations reveals that in more than 80 percent rural households, daily consumptions of vitamin A, Iron, Iodine and Zinc are below the recommended daily allowance. According to the disaggregated information with respect to household consumption poverty status, almost more than 95 percent poor households are deprived in terms of the above micronutrients. The phenomenon of severe deprivations of micronutrient intakes clearly necessitates direct nutritional intervention schemes for the poor to escape from the poverty trap.
- The National Nutrient Survey 2011 indicates that nearly 33 percent of children under five are underweight, 46 percent stunted, 18 percent wasted, 33 percent

have iron deficiency anaemia and 36 percent have zinc deficiency in rural Pakistan during the survey year 2011. About 3 percent of the mothers had iodine deficiency with visible signs of goiter, while almost 21 percent mothers have iron deficiency anaemia. Moreover, about 36 percent school-going children still have iodine deficiency albeit significant improvement has been noted since 2002.

- In contrast to consumption poverty which provides an estimate of absolute deprivation, the concept of relative poverty is applied to develop multidimensional poverty indices. The findings reveal that about 44 percent of rural people of Pakistan were in a state of multiple deprivations in the year 2010-11 and living in desperate conditions, and eventually being socially excluded. As expected, highest incidence is observed in Balochistan province, where about 75 percent rural population is multidimensionally poor, followed by rural Sindh with an estimate of 57 percent. The findings also reveal that the level of multidimensional poverty of rural Sindh is significantly higher than the poverty estimated for rural Khyber Pakhtunkhwa province.
- For policy perspectives, it is worth highlighting that consumption or income poverty measure only advocates the case for transfer policies and social safety-nets that alleviate poverty in the short-run, whereas multidimensional deprivation measures (literacy, enrolment, household wealth, housing conditions, child mortality etc.) remain stagnant in the short run, and document the recommendation of structural socio-economic policies that could alleviate the intergenerational poverty in the long term. Therefore, consumption poverty and multidimensional poverty are not a substitute to/for each other for policy formulation. Both provide different information in a differing contexts.
- Unlike multidimensional or consumption poverty indices which first determine household status in terms of poverty before developing aggregate measures, the IMD is estimated by aggregating indicators at a particular geographical level. For instance, to arrive at the tehsil, district or provincial estimate of deprived or socially excluded population in terms of any specific indicator, both numerator and denominator are correspondingly aggregated at tehsil, district or provincial levels.
- According to estimates of the geographical Indices of Multiple Deprivations, overall 38 percent population of rural Pakistan is deprived or multidimensionally poor in terms of selected indicators and dimensions (education, health, housing

quality, housing services and economic). The provincial phenomenon is very much similar to the trends observed in consumption and multidimensional poverty. About 33 percent rural population of Punjab is deprived, followed by Khyber Pakhtunkhwa where the level of deprivation is 36 percent. The highest 54 percent deprived population is estimated for Baluchistan province.

- Per capita income inequality for rural Pakistan as estimated through Gini coefficient is 0.37 for the year 2010-11, indicating a high level of income inequality. Provincially, Punjab has the most unequal distribution of rural income, followed by Khyber Pakhtunkhwa. Interestingly, Balochistan – the province with the lowest income level in the country–has comparatively the most equal income distribution.
- Among the various sources and determinants, skewed land distribution is a major constituent part of rural income inequality. The estimated Gini for Pakistan is stagnant at the level of 0.63 since 1990. However, significant variations across provinces are observed.
- The rural poor who comprise the majority of the poor population are not entitled to get protection against various risks through the social security instruments. The phenomenon clearly indicates a serious flaw in the design of social security schemes, and necessitates developing special schemes for the rural poor like social insurance, old age benefits and agriculture insurance along with risk management and disaster risk reduction measures.
- Among the social assistance programs, BISP has evolved over the past few years into the country's main social safety net. The allocation for the financial year 2012-13 is Rs. 70 billion to provide cash assistance to 5.5 million families, which constitutes almost 18 percent of the entire population. The Programme aims at covering almost 40 percent of the population below the poverty line .
- Although the BISP has received unprecedented support and assistance from multilateral and bilateral donor agencies, financial sustainability and political preference is a major concern. BISP has been criticised for its close association with a particular political party (with the name of Benazir Bhutto) and critics discount the initiative claiming it as a means of attracting votes for PPP rather than alleviating poverty. Thus the future of the BISP initiative in coming years is uncertain due to change of political regime as well as worsening macroeconomic and growth outlook.

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