

POVERTY

NATIONAL POVERTY REPORT

2015-16



MINISTRY OF PLANNING
DEVELOPMENT & REFORM

National Poverty Report 2015-16

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Foreword

Last half a century has witnessed a tremendous debate on poverty which led to frequent differences in understanding poverty across globe and over time. Many approaches exist for conceptual understanding and for practical measurement along with advance statistical tools. Besides this conceptual and theoretical debate, the 2030 Development Agenda in the form of Sustainable Development Goals recommends examination of multiple dimensions of poverty and vulnerability.

Considering these challenges, Planning Commission of Pakistan as leading think-tank of the country has been estimating national poverty line since 2001. Starting from 1990s till 2011-12, the national definition of poverty remained only linked with nutritional inadequacy. However, considering the changing development dimensions in the country, after a rigorous consultative process the national poverty definition was switched to cost of basic needs approach (CBN). After adopting this broader definition of poverty, from 2013-14 CBN is now considered as the national definition of poverty.

The report presents the national poverty number, along its disaggregation at rural-urban level. The method of estimation is described in an easy and understandable way for the public to understand. The process of estimation of poverty this year includes: (i) a training program on poverty estimation with the help of World Bank in which academia, relevant provincial departments and line ministries participated, (ii) a poverty estimation committee was formulated comprising representatives of academia, free-lance researchers, Federal Bureau of Statistics and BISP, (iii) the SDGs section of Planning Commission provided their assistance in estimating the poverty and leading the whole process from beginning till the end. Thus, after a well-articulated process of almost 7-8 months the report is now finalized. This report also explains few data issues that have been highlighted at different forums and were causing confusion during poverty debates. Furthermore, the details provided in this report show the high level of transparency and professionalism.

I hope this report will be useful for line departments, academia, other government and development organizations.

Dr Asma Hyder

Member Social Sector & Devolution
Planning Commission, Islamabad.

Acknowledgement

Ministry of Planning, Development and Reform is primarily responsible for giving growth strategy to the economy. It has mandate to collaborate sectoral policies and resource allocations in the right direction to get distribution mechanism. The estimation of poverty is therefore become crucially important for Pakistan. Ministry of Planning is doing the job through a Committee of experts since 1999-2000. The Household Integrated Income Consumption Survey 2015-16 was challenging in many ways and the Committee appointed by the Ministry had a very tough job for estimating poverty incidence and its intensity for 2015-16.

I am glad that my Section and the Committee under the able guidance of Dr. G.M Arif and quality contributions from Dr. Naeem-uz-Zafar, Dr Aliya H Khan, Dr Muhammad Idris, Rabia Awan and Dr Nasir was able to deliver the accurate poverty number using Cost of Basic Needs (CBN). I appreciate and acknowledge their hard work and amount of time dedicated to the exercise. Dr. Asma Hyder, Member (Social Sector) was also generous in providing technical and intellectual support to the Committee.

This exercise was not possible without hard work in estimation done by two officers of my Section, Dr. Haroon Sarwar and Muhammad Saleh. I want to acknowledge also the work of Naeem-uz-Zafar and Schanzah Khalid (formerly with SDG Unit) in providing initial impetus and motivation to the exercise. I also commend the good job done by Nigar Anjum Deputy Chief of the Section in providing support to the team in terms of convening and editing the draft.

Ministry of Planning, Development and Reform has broadened the scope of the poverty estimation and inequality by introducing some trainings for estimating poverty to the government and academia and more than 25 people in Pakistan are now able to do lot of work on Poverty and Inequality with the help of the World Bank which has helped in developing capacity in many government departments and far-flung universities of Pakistan.

Zafar Ul Hassan

Chief – SDGs Section

Ministry of Planning, Development & Reform

Team

Poverty Estimation Committee

| | |
|----------------------------------|------------------|
| Dr. G. M. Arif | Chairman |
| Dr. Naeem-uz-Zafar | Member |
| Dr. Aliya H. Khan | Member |
| Ms Rabia Awan | Member |
| Dr. Muhammad Idrees | Member |
| Dr. Nasir Iqbal | Member |
| Mr Zafar ul Hassan, Chief (SDGs) | Member/Secretary |

Sustainable Development Goals Section

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1. Introduction and background

Pakistan has a strong tradition of poverty estimation since early 1960s, mostly by independent researchers using the secondary published data of the household income and expenditure surveys (HIES). The estimation of poverty based on the micro-data of HIES was started in 1980s, and the Pakistan Bureau of Statistics (PBS) was the first public sector institution which estimated the poverty number from HIES in 1990s by applying Food Energy Intake (FEI) method on the micro datasets.

The official poverty line was notified for the first time in 2002 by the Planning Commission after getting mandate of estimating poverty statistics in 2001. The first official poverty line was based on the threshold level of 2350 kcal per day per adult equivalent and applied FEI method on the micro-data of 1998-99 HIES. For consistency, this line, after adjusting it with CPI, was used for poverty estimation in subsequent years when the HIES was carried out, notably in 2001-02, 2004-05, 2006-07, 2007-08, 2010-11 and 2011-12.

However, for poverty estimates of 2013-14, the Planning Commission adopted the cost of basic needs (CBN) methodology¹ and estimated the poverty line for this period as Rs 3030.32 per adult equivalent per month. After the release of Household Integrated Income and Consumption Survey (HIICS) 2015-16, the Ministry of Planning, Development & Reform constituted a Poverty Estimation Committee, representing academia, statistical agencies and practitioners. The committee was entrusted with the responsibility of estimating poverty from 2015-16 HIICS micro-data using the recently adopted CBN method.

The national level poverty estimates, approved by the committee, are given in this report, with necessary detail on both the data source, HIICS 2015-16, methodology applied for estimation and some recommendations. The rest of this report is organized as follows. The main features of the 2015-16 HIICS and data issues concerning poverty estimation are reported in the next section followed by a discussion on methodology in section 3 which includes updating of the poverty line for 2015-16 period and aggregation of consumption expenditure. Poverty estimates are reported in section 4, followed by a discussion on trends in poverty gap and severity, the two commonly used measures to understand the depth of poverty. Section 6 reports bands of poverty, estimated from the HIICS 2015-16 micro-data. Changes in consumption pattern are discussed in the penultimate section, while conclusions and some recommendations for future work on poverty are given in the final section.

¹The reasons for this adoption or switching from FEI method to CBN is outlined in Pakistan Economic Survey 2014-15.

2. Source of data: The Household Integrated Income and Consumption Survey (HIICS) 2015-16

2.1 HIICS 2015-16: a merger of HIES with Family Budget Survey (FBS)

In the money-metric approach, poverty is assessed based on income or consumption. The official poverty estimates in Pakistan are based on the consumption data, and HIES, as noted above, has historically been the major or even the sole data source for poverty estimation. In 2015-16 period, for the purpose of Rebasing of Price Statistics and computation of weights, the HIES was merged with Family Budget Survey (FBS) and named as the Household Integrated Income and Consumption Survey (HIICS) 2015-16. The primary objective of the FBS is to derive weights for rebasing of Price Statistics. The last rebasing was carried out in the year 2007-08. The FBS collects information on consumption of items of predetermined basket of goods and services for deriving weights for Price Statistics.

In the past, the FBS survey was only conducted in urban areas as the CPI was supposed to cover only urban consumers. In 2015-16 round, the PBS planned to include rural areas in the scope of FBS to derive separate weights for urban and rural areas. Like FBS, HIES also collects information on consumption of items according to Classification of Individual Consumption of Purpose (COICOP) along with income and other social indicators by covering both urban and rural areas of all four provinces. The PBS decided to merge both the surveys to collect data by team approach. This was done to eliminate duplication of efforts and also enhance data quality. It is pertinent to mention here that the HIICS was only planned for 2015-16 period to meet the requirements of rebasing and also to provide all the information which is essentially required for the HIES, but the information on health, population welfare was not collected through the HIICS. In future the PSLM/HIES activities will be continued as per previous practice.

2.2 HIICS 2015-16 sample size and data issues

The sample size of the 2015-16 HIICS consists of 24238 households; 16155 households from urban areas and 8083 households from rural areas of the country. There are three important data issues in HIICS dataset for poverty estimation, to be discussed in detail here; First, the urban share (66.7%) in the total HIICS sample is much higher than its usual share in previously carried out Household Income Expenditure Surveys. More representation to urban areas in the HIICS 2015-16 is given for the representativeness of CPI rebasing and to control the variation in consumption which is usually more prevalent in urban areas. However, it is pertinent to mention here that this over-representation is adjusted through weights and results are comparable and in line with the previous surveys. The Committee examined carefully the distribution of total sample between rural and urban areas and found it suitable for poverty estimation mainly because the given samples are representative for rural and urban domains.

The second issue is that 63 Primary Sampling Units (PSUs), mainly from Balochistan (60 out of the total 63 dropped PSUs), were dropped from the HIICS because of bad law and order situation. This issue was tested through the sensitivity analysis and it emerged that it hardly impacted national poverty numbers in a significant way, overall the poverty estimates are broadly representative at the national as well as for rural and urban areas.

Third, the HIICS 2015-16 sample was drawn from the old population census (1998) frame, the urban part of which was updated in 2013 through quick count record; however, rural part was first updated in 2011 through House listing operations and then updated till 2016 through updation of rural area frame. The preliminary results of the 2017 Population Census show low to modest changes in distribution of population between rural and urban areas or across the provinces. These changes might have an impact on the poverty estimation, primarily through the selection of sample for different geographical units. However, the 2017 population census has not shown any major shift in the geographical distribution of population.

3. Methodology

3.1 Poverty line

As noted earlier, the Planning Commission adopted the CBN method to estimate poverty for the 2013-14 period when the last HIES was carried out. For the CBN poverty, first a food poverty line (FPL) was estimated by taking the average spending on food of households in the reference group - 10th to the 40th percentile of the expenditure distribution. The CBN then considered non-food expenditures (clothing, shelter, education etc.) that are necessary for households, focusing on households who are able to fully meet the FPL at their current level of food expenditures. The FPL was then scaled up to reflect the total expenditure of these households to obtain the CBN poverty line.² The poverty line was estimated at Rs. 3030.32 per adult equivalent per month, based on the HIES survey (2013-14). For the HIICS 2015-16, this poverty line is updated using CPI based inflation. The updated poverty line for 2015-16 is Rs. 3250.28 per adult equivalent per month. The CBN poverty lines for early surveys years, adjusted by CPI, are reported in Table 1.

Table 1: CBN Poverty Lines 2005-06 to 2015-16

| Year | Poverty Line (Rs per adult equivalent per month) |
|-------------|--|
| 2005-06 | 1277.74 |
| 2007-08 | 1543.51 |
| 2010-11 | 2333.35 |
| 2011-12 | 2600.15 |
| 2013-14 | 3030.32 |
| 2015-16 | 3250.28 |

²For more detail on CBN method applied on HIES 2013-14 micro-data, see Annex I.

Source: Planning Commission

3.2 Aggregation of consumption expenditure

The updated poverty line was applied on the aggregate consumption expenditure obtained from the HIICS 2015-16 micro-data to estimate poverty levels. The consumption aggregate has three main components: (i) the aggregate nominal consumption expenditure: which includes all food and non-food expenditures of the household converted into the same time unit, for instance annual, monthly or weekly expenditures, (ii) the spatial price index: to adjust for the cost of living differences across space or regions, and (iii) the equivalence scale: to adjust for differences in household size and age composition across households. The consumption aggregate includes all food and non-food expenditures that are incurred on a recurrent basis.

The HIICS 2015-16 elicits both cash and in-kind expenditures for items directly purchased in the market, received as wages or salaries, or received as gifts or assistance. In the first step, the monetary value of all these expenditure categories is aggregated for each item. In the next step, these item level expenditures are converted into the same time unit to get at the aggregate nominal consumption expenditure. In case of Pakistan, the key non-food items included in the consumption aggregate include expenditures on clothing, footwear, housing, education, health, fuel, utilities, transport, recreation and communication. The rental value of the dwelling occupied by the household is also included in the consumption aggregate. HIICS elicits information on rent from renters and non-renters/owners. For both these categories of households, self-reported rent is included in the consumption aggregate.³ House and property taxes and fees, and infrequent repairs and maintenance expenses are not included. Expenditures on durable goods are also not included in the consumption aggregate.

HIICS elicits expenditure information on a fortnightly, monthly or a yearly basis. All these expenditures have to be converted to a common base. As Pakistan uses a monthly consumption aggregate, all these expenditures are converted accordingly. This requires a decision on how fortnightly expenditures are treated. In Pakistan, fortnightly expenditures are taken to represent purchases made over a 14-day period, and are therefore, multiplied by a factor of 2.17 (an approximation for $30.5/14$).

As the cost of basic food and non-food needs varies across regions within a country, the aggregate nominal expenditure needs to be adjusted for spatial price differences. The more diverse and vast a country is, the more important these spatial adjustments tend to be. A common way to do this is to construct a spatial price index.

For the spatial price index, this report uses a Passche formula and is estimated at the level of a primary sampling unit (PSU). This PSU-level Paasche index is based on a set of items for which both the quantity and the expenditure information is available in the HIICS. This spatial price index has three components:

³ In some countries where either the expenditure on rent is not elicited from 'owners' or 'non-renters' or the reported data is unreliable, hedonic models are used to impute rent for owners and all the households that do not pay any rent for the dwelling they reside in.

- Budget share of each consumption item (bs_i^k) at the psu-level
- Where bs_i^k is the weighted average budget shares of item i in psu k , and the weights are the psu-level population estimates.
- Median unit value (implicit price) for each item at the PSU-level $(p)_i^k$

Unit values are price proxies equal to the total expenditure on each item divided by the quantity consumed of that item. These price proxies can only be estimated for items where both expenditure and quantity information is available. In case of the HIICS, this is true for a majority of food items, tobacco and chewing products and some fuel and lighting items. Once the item level prices (unit-values) are estimated, the median of these prices at the PSU-level is used in the spatial price index.

- Median unit value (implicit price) for each item at the national level p_i

Similar to (b), unit values by each item are taken as price proxies, and median price of each item at the national level serves as the reference price for the estimation of the PSU-level Paasche index.

In the estimation of the price index, all the item budget shares and median prices are PSU-population weighted. Items that do not have quantities are automatically excluded. Grouped item categories are also excluded. In case of grouped items, the variability of unit values usually results due to the grouping of different items and not necessarily due to spatial price differences.⁴

The final set of items used to estimate the spatial price index is based only on items with non-missing quantity and expenditure information. In addition, we make sure that a household contributes to the price index only if it consumes at least 5 of the included items.⁵

The price index PI_k for each psu k takes the following form:

$$PI_k = \sum_i e^{bs_i^k * \ln \left[\frac{p_i^k}{p_i} \right]}$$

This gives one price index per PSU. In the last step, the index is normalized by its mean.

Households of different sizes and age composition have differing consumption needs. In order to reflect these differences, adjustments are made to the welfare aggregate to reflect the age, and sometimes the gender distribution of the household members. This is also done to account for the fact that larger households may be able to purchase

⁴ Grouping of items also results in a bi-modal distribution of unit values for such item categories.

⁵ This is done to make sure that households that contribute to the price index have indeed participated in providing information for a majority of the consumption items included in the HIES consumption module. As a robustness check, we also estimate the price index without this restriction and find that the ultimate poverty profile of the households is robust to this decision.

goods in bulk at cheaper rates and may be able to economize on the purchase of certain items. Adjusting the welfare aggregate using equivalence scales can address these concerns. Pakistan uses a basic adult equivalence scale which assigns a weight of 0.8 to each individual below the age of 18, and a weight of 1 to each individual age 18 and above.

The final welfare aggregate used for poverty measurement in Pakistan is the *spatially adjusted monthly per-adult equivalent consumption expenditure*.

4. Poverty estimates: magnitude and trends

Table 2 presents poverty estimates for the 2015-16 period, based on the CBN method, are reported in Table 2, at the national level as well as for rural and urban areas. For comparison, the corresponding estimates for the previous survey year 2013-14 are also given in this table. Overall poverty declined by 5.2 percentage point from 29.5 percent in 2013-14 to 24.3 percent in 2015-16. The decline in poverty occurred in urban as well as rural areas of the country. However, it is more pronounced in the former than in the latter.

Table 2: Poverty Incidence

| National/rural-urban areas | 2015-16 | 2013-14 | Change in poverty headcount (%age point) |
|-----------------------------------|----------------|----------------|---|
| National | 24.3 | 29.5 | 5.2 |
| Rural areas | 30.7 | 35.6 | 4.9 |
| Urban areas | 12.5 | 18.2 | 5.7 |

*Source: Planning Commission; *Poverty Committee estimations*

Over the last decade Pakistan's poverty headcount has witnessed a persistent decline both at national and regional levels. Table 3 presents poverty estimates, based on the CBN poverty lines adjusted by CPI, for all survey years of the last decade. Percentage of people living below poverty line has declined from 50.4% in 2005-06 to 24.3% in 2015-16. Poverty in both rural and urban areas has also been on the declining trend with poverty headcount of 12.5% in Urban and 30.7% in rural areas in 2015-16. The decline in poverty is more pronounced in urban areas than rural areas.

Targeted poverty reduction programmes like BISP, relative political stability, peace and tranquillity, strong recovery from low GDP growth rate of 1.7% in 2008-09 to 4.5% in 2015-16, continued higher inflows of remittances especially from middle east which are destined to relatively poor families and above all a more inclusive characteristics of economic growth; are some of the important causes that can be attributed to a significant decline in the poverty headcount since 2005-06 [See Table-3].

Table 3: Poverty trends, 2005-06 to 2015-16

| Year | National | | |
|----------|----------|-------|-------|
| | | Urban | Rural |
| 2005-06 | 50.4 | 36.6 | 57.4 |
| 2007-08 | 44.1 | 32.7 | 49.7 |
| 2010-11 | 36.8 | 26.2 | 42.1 |
| 2011-12 | 36.3 | 22.8 | 43.1 |
| 2013-14 | 29.5 | 18.2 | 35.6 |
| 2015-16* | 24.3 | 12.5 | 30.7 |

*Source: Planning Commission; *Poverty Committee estimations*

Table 4 presents data on change in poverty by percentage point between two consecutive surveys at the national level as well as for rural and urban areas. While comparing with 2011-12, largest percentage decline in poverty headcount was observed in year 2013-14 when national poverty headcount declined by 6.8 percentage points with 6.2 percentage points decline in urban and 7.5 percentage points in rural areas. Poverty headcount has declined by 5.7 percentage points in urban areas and 4.9 percentage points in rural areas between 2014 and 2016, thereby leading to an overall decline of 5.2 percentage points decline in incidence of national poverty headcount.

| Table-4: Change in Poverty Headcount (%age Points) | | | |
|---|----------|-------|-------|
| Year | National | Urban | Rural |
| 2007-08 | 6.3 | 3.9 | 7.7 |
| 2010-11 | 7.3 | 6.5 | 7.6 |
| 2011-12 | 0.5 | 3.4 | -1.0 |
| 2013-14 | 6.8 | 4.6 | 7.5 |
| 2015-16 | 5.2 | 5.7 | 4.9 |

*Source: Planning Commission; *Poverty Committee estimations*

The decline in poverty incidence is phenomenal in Pakistan since 2007-08 and normal inter-survey decline is around 7 percentage points with 2010-11 as the only exception. The inter-survey decline in poverty headcount was insignificant in 2011-12 compared to 2010-11 survey. There can be two possible undertones for this low performance. First, inter-survey period may not be a period sufficient enough to observe meaningful decline in poverty both at national and regional levels. Two, catastrophic floods of 2010-11 hit a significant blow to rural populace whose income and livelihoods were severely affected by these floods. This is substantiated by an increase in rural poverty headcount by one percentage point whereas poverty incidence followed the trend of

decreasing by 3.4 percentage points in urban area. National poverty headcount in this period has decreased marginally by half a percentage point.

Overall, despite floods of 2010 and chronic energy shortages, aggravated security situation and government's limited capacity to mobilize and channelize its own resources exclusively for social welfare and poverty eradication programmes, the declining trend in Poverty headcount in Pakistan is both promising and encouraging. Strong resurgence of economic growth, more provincial autonomy to shape and spearhead their own social welfare and poverty eradication programmes and targeted social safety nets programme of BISP have all been the main drivers of poverty decline in the past. Moving forward, one can vouch that upsurge in global commodity prices, likely increase in agriculture exports to China and ASEAN region due to tariff concessions, infrastructure and SEZs projects under CPEC and improved supply of energy for industry and better employment opportunities are some of the salient developments that may help country achieve its global commitment of ending poverty in all its forms by 2030.

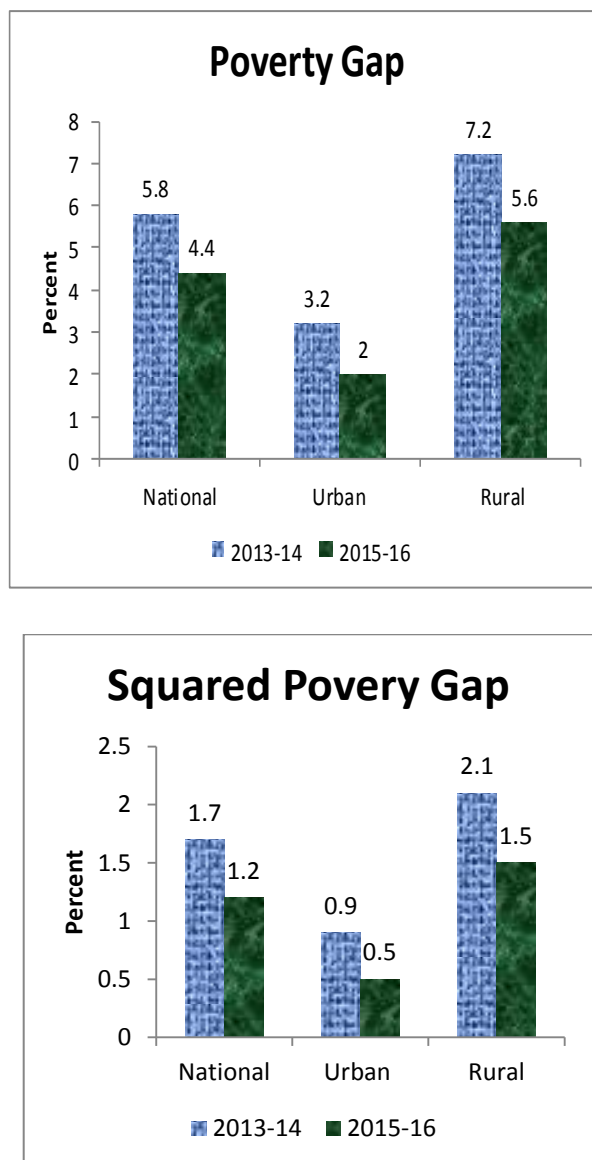
5. Trends in Poverty Gap and Severity

Although measuring absolute poverty through cost of basic needs is by far the most widely used method for determining the poverty incidence and differentiating the poor from the non-poor. However, one can analyse neither the intensity nor the severity of poverty by merely looking at the poverty incidence in Pakistan. Like how poor the poor are while living below the poverty line, and what amount of resources one may need to bring how many people out of poverty in a particular region?

To look into such kind of facets a moderately popular measures of poverty, and for sure the better measures of the headcount index, are the depth of poverty or poverty gap index coupled with squared poverty index. These measures add up the extent to which individuals on average fall below the poverty line. Depth of poverty and squared poverty index are important supplements of the incidence of poverty.

In case of Pakistan, looking at the trends of poverty and squared poverty gap for 2013-14 and 2015-16, one can see number of people living farther from the poverty line has declined in 2015-16 compared to those in 2013-14 (See Figure 1 below). However, poverty gap in rural areas is higher than those in the urban areas in Pakistan which is plausible. Moreover, there is a possibility that some areas particularly in urban centres have a high poverty incidence but low poverty gap (when numerous members are clustered around the poverty line), while other rural areas have a low poverty incidence but a high poverty gap.

Figure 1: Poverty Gap & Squared Poverty Gap (2013-14 and 2015-16)



Source: Poverty Committee Estimations

There could be multiple policy responses to these trends in poverty gap and squared poverty gap in Pakistan. Policy makers need to make a choice between either of the two: first, a policy or program could be shaped for reducing the number of poor (the incidence of poverty) by targeting those who are closest to the poverty line and get them out of poverty (low impact on the poverty gap). Second, some other interventions could better address the situation of severity and the case of the very poor but have a low impact and weak influence on the overall incidence. For example, it might bring the very poor closer to the poverty line but not above it. The choice in the end will mainly be determined by the political necessity, economic viability and nature of poverty incidence and severity in a given region or province of the country.

6. Bands of Poverty

The poverty profile in terms of poverty bands is very insightful for policy formulation as it strikes out the population into different bands which need different policy initiatives. The poverty bands given in the Table 5 below show that almost 6.4 % of population (12.56 million) population needs social safety net coverage as this population falls in the category of extreme and ultra-poor. On the other hand, 17.9% poor (35 million) are the border line cases and a little effort can push them up the poverty line, but at the same time almost 19.9% vulnerable population (38.83 million) is a potential threat because a negative shock can push them below the poverty line. These two groups (comprising almost 74 million population) have special policy significance and can be very helpful in formulation of a sustainable poverty reduction policy.

Table 5: Poverty Bands at National and Regional Level in Pakistan

| Poverty Bands | Percentage of Population | | | Estimated Headcount (Millions) | | |
|---|--------------------------|-------|-------|--------------------------------|--------|-------|
| | National | Urban | Rural | National | Urban | Rural |
| Extreme Poor (< 50% of Poverty Line) | 0.42 | 0.21 | 0.54 | 0.83 | 0.24 | 0.42 |
| Ultra Poor (> 50% and < 75% of Poverty Line) | 6.00 | 2.39 | 7.95 | 11.73 | 2.81 | 6.19 |
| Poor (> 75% and < 100% of Poverty Line) | 17.89 | 9.93 | 22.18 | 34.96 | 11.66 | 17.29 |
| Vulnerable (> 100% and < 125% of Poverty Line) | 19.87 | 14.46 | 22.78 | 38.83 | 16.99 | 17.75 |
| Quasi Non-Poor (> 125% and < 200% of Poverty Line) | 34.77 | 37.68 | 33.21 | 67.95 | 44.27 | 25.88 |
| Non-Poor (> 200% of Poverty Line) | 21.04 | 35.33 | 13.34 | 41.10 | 41.50 | 10.40 |
| Total Population | 100 | 100 | 100 | 195.4** | 117.48 | 77.93 |

** Population number is for 2015-16 and is taken from Economic Survey 2016-17

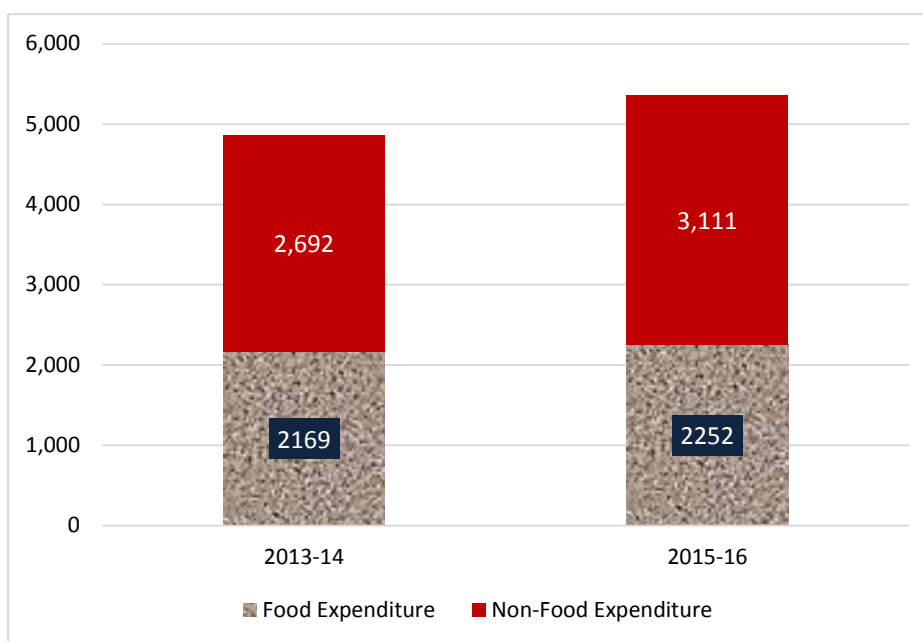
Source: Poverty Committee Estimations

7. Changes in Consumption Pattern

The changes in consumption pattern are forward indicators of welfare. A comparison of HIICS 2015-16 with HIES 2013-14 in consumption pattern indicates that overall consumption expenditure (PAE) at national level has increased by 10 percent. This

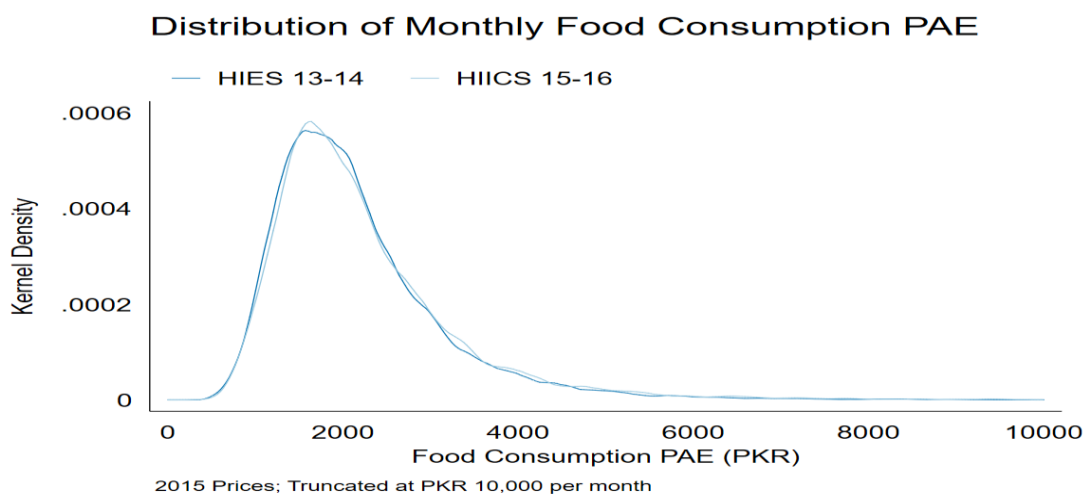
increase in consumption is more pronounced in non-food expenditure, which increased by 15.6 percent as compared with food expenditures, which inched up only 3 percent during 2014 to 2016. As a result, the share of food in total expenditure has declined from 48.1 percent to 45 percent, while that of non-food has increased from 51.9% to 55% during inter-survey period.

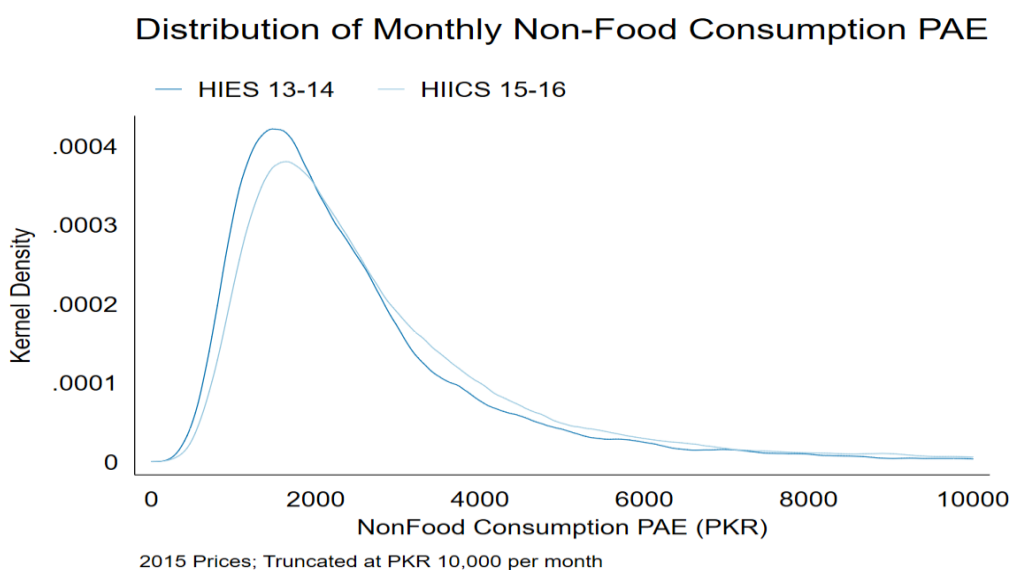
Figure 2: Changes in Average Consumption Expenditures at 2015-16 Prices



This change in consumption expenditure is evident from the shift in distributions of food and non-food expenditures given below:

Figure 3: Probability Distribution of Monthly Food & Non Food Consumption

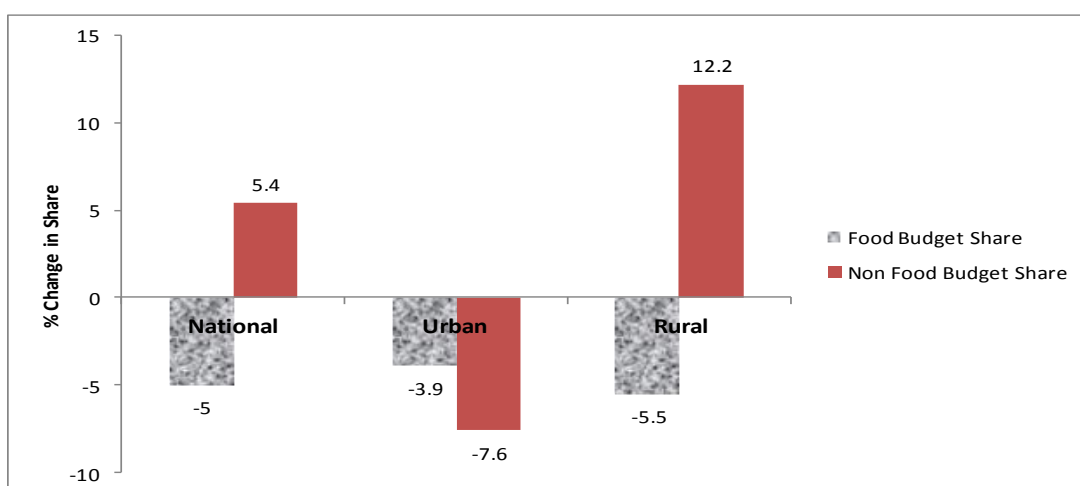




Source: Poverty Committee Estimations

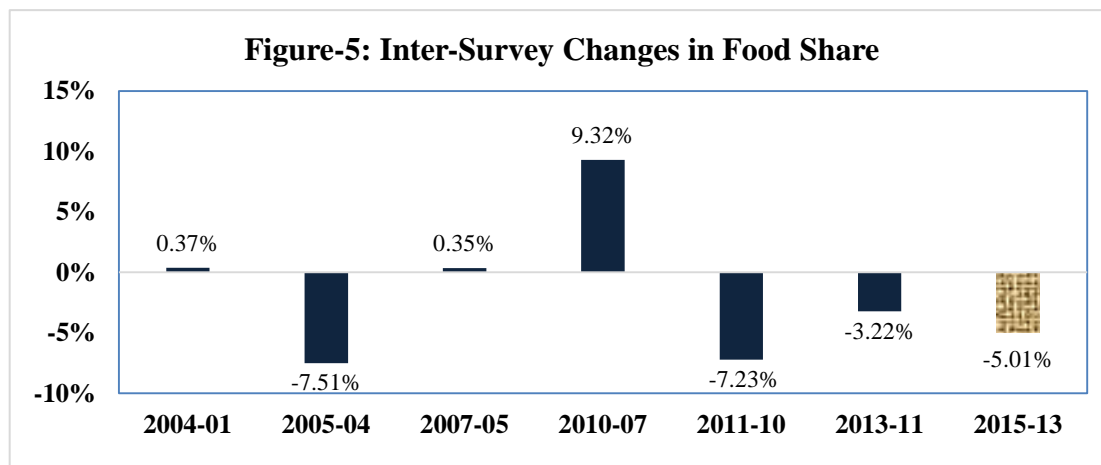
These changes in food and non-food expenditures have many implications from the policy planning perspective, therefore it is important to dig deeper into the composition of this change. The estimates indicate that reduction in food share is evident at all levels; however, there is lesser reduction in food share in urban areas as compared with rural areas. In economic theory, change in food share has particular importance from the point of view of Engel Law – which states that “as income rises, the proportion of income spent on food falls, even if absolute expenditure on food rises”. It is therefore, a positive sign that people have greater proportion of their income available for education, health and other non-food consumption.

Figure 4: Change in Food & Non-Food Budget Share from 2013-14 to 2015-16



Source: Poverty Committee Estimations based on HIES & HIICS datasets

This overall decline of 5% in food share is not unprecedented; rather decline during inter-survey period 2004-05 and 2005-06 was 7.5%, while decline during inter-survey period 2010-11 and 2011-12 was 7.2%. Although, decline in food share is a rough indicator of improved welfare/poverty reduction, yet historical trend of inter-survey period changes shown in chart below and changes in poverty during these periods are not in conformity of the Engle law. It is obvious from simultaneous increase in food share and poverty reduction between 2007-08 and 2010-11 survey periods.



Source: Poverty Committee Estimations based on HIES & HIICS datasets

8. Conclusions and recommendations for future work of poverty

Poverty in Pakistan has declined steadily during last one and a half decade. Foreign remittances, growth of informal sector associated with rising urbanization, and expansion in social protection initiatives seem to be the major contributing factors in the declining poverty trends. But, the declining trends in poverty are not supported by the progress in social sector indicators. The drivers of poverty reduction need to be explored. Moreover, the Household Income Expenditure Surveys including the HIICS 2015-16 generate data on consumption expenditures representative at the national level as well as for four provinces of the country. Poverty may vary across the provinces.

The Poverty Estimation Committee recommends that:

- **Firstly**, the Planning Commission should actively co-opt with academia and think tanks to explore drivers of poverty reduction in Pakistan and define future policy discourse based on the nature and sustainability of observed decline in poverty.
- **Secondly**, a committee with due provincial representation may be formed to estimate provincial poverty numbers, based on recently adopted CBN methodology, for all survey years carried out since 2002 when the official poverty line was notified and adopted by the Planning Commission.

- **Thirdly**, inequalities may be explored because of its high relevance with redistributive policies.

CBN Methodology Used for Estimation of 2013-14 Poverty Line

The CBN method defines a poverty line as the cost of a basket of goods deemed to be sufficient for satisfying basic food and non-food needs. It first determines the cost of basic food needs, aligns them to the normative minimum standard of well-being determined in Step II, and then adds a provision for basic non-food needs. The CBN method is most commonly used in majority of the developing countries. This is because in comparison to the FEI, it is both more transparent and captures non-food needs better. Owing to this, the 2014 poverty line in Pakistan is estimated using the CBN methodology.

In the estimation of the 2014 poverty line, the method is implemented in two steps. In the first step, we estimate the food poverty line. Here we take the average quantities of all food items consumed by the reference group. These quantities represent the ‘basic’ food basket.⁶ These quantities are then priced to arrive at the total expenditure needed to attain the ‘basic’ food basket—as represented by the average basket of the reference group. Put more simply, we take the average quantity of each food item consumed by the reference group and multiply it by the median price of that item, also obtained from households within the reference group.⁷ This gives the item-level expenditures required to attain each item in the ‘basic’ food basket. We then aggregate these item-level expenditures to arrive at the total expenditure (TE) required to purchase the ‘reference’ food basket. The next step is to ensure that the ‘chosen’ food basket also satisfies the minimum daily caloric requirement set for the country. To do this, we first convert the average quantity of each food item in the reference basket to the average calories consumed from that item using a calorie conversion table. We then aggregate the item-level calories to arrive at the total caloric intake represented by the reference basket (Cal_{refgrp}). As Cal_{refgrp} is lower than the minimum required threshold of 2350 calories, the expenditure required to purchase the reference basket (TE) is scaled up to ensure that all households at the poverty line can attain the minimum caloric threshold of 2350 calories per adult equivalent per day. This is done by scaling-up the total expenditure (TE) by the ratio of the minimum caloric threshold (2350) to the aggregate caloric intake in the reference basket (Cal_{refgrp}). The scaled up version of the total expenditure is called the Food Poverty Line (FPL). Thus $FPL = TE * \frac{2350}{Cal_{refgrp}}$.⁸

⁶ Taking quantities directly from the survey implies that the ‘basket of goods’ used for the estimation of the poverty line is guided by household preferences and consumption patterns. A basket is not normatively defined by some policy maker who decides what ‘should’ be the minimum requirement for each food item in the country.

⁷ Using a uniform measure to ‘price’ the ‘basic food basket’ implicitly assumes that all households within the reference group face the same price for fulfilling their basic food needs. As noted earlier, the reference group used for the 2014 poverty line includes households in the second, third and fourth decile of the distribution of consumption expenditure.

⁸ Similar to the FEI estimation, CBN estimation also assumes the cost per calorie for food items with no quantity and therefore calorie information is equal to the average cost per calorie estimated using the items with non-missing quantity and calorie information.

The next step is to account for non-food basic needs. In theory, the provision for non-food needs is guided by the expenditure pattern of households for which the average food expenditure is equal to the food poverty line. In practice, the non-food component of the poverty line is indirectly accounted for by taking the food budget share, s_f , of households whose food expenditure is ‘close’ to the food poverty line and scaling up the FPL by this food budget share.

Thus, the Total Poverty Line, $TPL = \frac{FPL}{s_f}$. The key decision here is to determine the ‘group’ which provides the food budget share, s_f . In the estimation of the 2014 poverty line, s_f is estimated using the expenditure patterns of households within the reference group only. In the first step, we estimate the average food budget share for the set of households whose food expenditures lie within a 1 percent band around the FPL. In the next step, we estimate the same food budget share for the set of households whose food expenditure lies within a 2 percent band around the FPL. In each subsequent step, we increase the bandwidth by 1 percentage point, until we reach the maximum bandwidth of 10 percent in the 10th iteration. This gives us a set of 10 values for s_f , which are then averaged to get at the final food budget share used to estimate the TPL. This way of non-parametrically estimating s_f —by successively increasing the bandwidth around the FPL—gives a higher weight to households that are ‘close’ to the FPL in terms of their average food expenditure. This is also the reason behind non-food needs being more adequately captured through the CBN method as compared to the FEI method.

Using the 10th to the 40th percentile of the distribution of expenditure as the reference group, a minimum caloric threshold of 2350 calories per adult equivalent per day, and the CBN methodology, the 2014 poverty line is estimated at Rs. 3030.32 rupees per adult equivalent per month, which gives a national poverty headcount rate of 29.5 percent.

Poverty Measures

After obtaining the welfare measure and poverty line, for a meaningful analysis an aggregate poverty measure is required. For poverty measures, we have a number of options available in literature:

- Incidence, depth and severity of poverty – FGT class
- Sen’s Poverty Index
- Watt’s Index

‘Poverty Measure’ aggregates the information and is the function of individual income and poverty line. In practice Foster, Greer, Thorbecke (FGT) poverty measure holds the centre stage – which includes three measures i.e.

- Headcount Ratio
- Poverty Gap Index, and
- Poverty Gap Squared Index

Headcount Ratio (H) is the most widely used poverty measure – which gives the proportion of population living below poverty line (Number of poor divided by total population). It is a very simple measure to calculate and easy to understand but theoretically has few shortcomings. It does not describe the degree of poverty (cut the income of poor by half but H will not change). Moreover, Headcount is insensitive to the distribution of income among the poor in most of the cases.

In terms of policy, a transfer to a very poor household will probably leave the headcount unchanged (if the poor remains below poverty line). Therefore, the easiest way to reduce the headcount ratio is to target the people just below the poverty line. But the policies based on headcount index might be sub-optimal. Therefore, it can be concluded that Headcount Index records only poverty eliminating policies and not the poverty alleviation policies.

Poverty Gap Index (PG) accounts for the intensity/depth of the poverty. It tells how poor the poor are. The contribution of *ith* individual to PG is larger, the poorest he/she is, that his/her poverty gap will be higher ($Z - X_i$). Poverty Gap combines the incidence and depth of the poverty.

The policy implication of the PG is that it gives the minimum cost of perfect poverty targeting i.e. The minimum cost of eliminating poverty is achieved when every poverty gap is filled up to Z. In simple words, it shows how much would have to be transferred to the poor to bring their incomes or expenditures up to the poverty line.

The **Squared Poverty Gap Index (PG2)** attributes more weight to the poorest among the poor. PG2 is simply a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves. It takes into account the inequality among the poor, therefore, is sensitive to both depth and severity of poverty. This measure lacks intuitive appeal, and because it is not easy to interpret it is not used very widely.