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**Energy and Tax Reforms:  
Household Analysis from  
Pakistan**

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## List of Acronyms

DISCOs	Distribution Companies
ENERCON	National Energy Conservation Centre
FBR	Federal Board of Revenue
GDP	Gross Domestic Product
GoP	Government of Pakistan
GST	General Sales Tax
ICT	Information and Communications Technology
IMF	International Monetary Fund
KESC	Karachi Electric Supply Company
MDGs	Millennium Development Goals
NTN	National Tax Number
OLS	Ordinary Least Squares
PKR	Pakistani Rupee
PTA	Pakistan Telecommunication Authority
SDPI	Sustainable Development Policy Institute
SROs	Statutory Regulatory Orders
TARP	Tax Administration Reform Project
T&D	Transmission and Distribution
USD	US Dollar
VAT	Value Added Tax
WAPDA	Water and Power Development Authority

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## **Abstract**

This paper focuses on the household perceptions across Pakistan regarding the necessary taxation and energy sector reforms. The key objectives are to assess: a) the understanding of respondents regarding challenges and interventions under both reform programmes, and b) willingness to embrace the adjustment that may be required to implement reforms. The survey reached out to 3,800 households in certain districts, including Faisalabad, Hyderabad, Karachi, Multan, Peshawar, Rawalpindi, and Quetta. The timing of this survey is important, as it was carried out immediately after the 2013 general elections. This exercise, therefore, provides a good benchmark against which public expectations from the government can be traced as the tenure proceeds. The findings of this survey shows that, most respondents' ignorance about tax default results in an increase in fiscal deficit and government borrowing, which in turn create inflation and reduce purchasing power. Also, there is a lack of understanding about the fact that the rootcause of energy crisis is the continuous reliance on subsidies and power theft. This survey also provides two important entry points for the policy makers. First, a significant proportion of population is willing and has ability to pay a) increased taxes if decent utilization of their contributions is demonstrated, and b) higher power bills if given a certainty of reduction in unscheduled power cuts. Second, any painful future adjustment resulting from economic reforms will also require taking in to confidence those segments of population who do not trust the current tax administration machinery and energy sector governance.

## **1. Background**

Pakistan's economy has been confronted with low growth equilibrium since 2008. The national income has been growing at a dismal average annual rate of 2.9% since 2009. The investment to GDP ratio is one of the lowest across the Asian countries and was recorded at 14.8% in 2013. While there have been recent analyses on the binding constraints to economic growth, however most of these point out towards the country's inability to design and execute important structural reforms related to energy, taxation, loss making public sector enterprises, deregulation, and privatization (GoP 2011 & Ahmed et al. 2013).

Out of the past 28 years, Pakistan remained under an International Monetary Fund (IMF) programme for 23 years. This prolonged relationship has been primarily a result of the poor fiscal discipline. Total revenue collected by the government, using tax and other measures, is around 13% of GDP, which is the lowest among all emerging economies. The revenue collected is not nearly sufficient to meet public expenditures, which has averaged 20% of GDP over the past five years. The result is high government borrowing that has led the country into a 'debt-trap'.

The lack of fiscal space has also not allowed the state machinery to invest in infrastructure and social services. Pakistan spends 0.7% of GDP on health. This is less than half of what other governments in lower middle-income countries spend on health. On elementary education, Pakistan spends less than 2% of GDP. This is also low when compared with countries with similar income levels. The energy crisis remains under the regulated control of the government, which in turn is unable to provide the liquidity even for the maintenance of existing power plants.

The low public spending on welfare and disruptive inputs for growth has resulted in Pakistan's poor performance towards MDGs attainment (GoP 2013). Pakistan is off-track in case of 24 out of 34 MDG indicators. This effort is further challenged by two non-economic factors, including: a) increased militancy and deteriorating law and order, and b) recurrent natural disasters. Local conflicts continue to strengthen local incidences of malnutrition and delivery of immunization services, which in turn will have an impact on the productivity of the future labour force in Pakistan.<sup>1</sup>

## **2. Objectives and Methodology**

This paper captures the people's perceptions about key economic reforms particularly in taxation and energy sectors. Our aim is to gauge household-level public appetite for reforms and the type of reform effort they would be willing to support. We provide a disaggregated analysis by key demographic indicators in order to identify pockets of reform opportunities.

The timing of this survey is important, as it was carried out immediately after the elections of 2013. This exercise, therefore, provides a good benchmark against which people's expectations from the government can be traced as the tenure proceeds. There is a newly signed and more stringent programme with the IMF under which the government is bound to increase the tax to GDP ratio as well as power and gas tariffs. Both the moves now seem inevitable given the pressures on fiscal deficit, domestic borrowing and exchange rate. However, a critical question we have answered in this paper is whether and by how much people are willing to embrace the painful adjustments in both reform areas. There are specific questions in this survey exercise which probe households' willingness to pay taxes and electricity tariffs, which reflect full economic cost.

The survey was conducted in seven districts drawn from four provinces. These districts include Faisalabad, Hyderabad, Karachi, Multan, Peshawar, Quetta, and Rawalpindi. We were able to

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<sup>1</sup> Pakistan Demographic and Health Survey 2012-13. National Institute of Population Studies, Islamabad

collect a data on 3,800 respondents having a mix of both male and female aging from 18 years and above and living in both rural and urban areas of the above-mentioned districts.

A ‘multistage stratified random sampling by probability proportion to size’ has been used. This sampling technique helps in splitting each stratum into sub-strata and also helps in reducing the heterogeneity of the target population. By using this sampling technique, at the first stage, target population has been divided into four strata (provinces) and later further split into seven sub-stratums (districts). In the second stage, the districts were divided into two regions (urban and rural) and unit of analysis was selected according to the proportion of urban and rural population of respective districts. Household randomized selection was then undertaken for high, medium and low income groups. Interviewing mode in this exercise was face to face on-site interviews. The sampling distribution at a disaggregated level is exhibited in Table 1. In terms of the household incomes distribution, 34% of the respondents earn less than or equal to PKR 10,000. There are 59% in the category of PKR 10,000 – 60,000 and finally 7% fall in the upper income group, i.e. PKR 60,000 and above.

Table 1: Composition of Sample Size

Province	Sample Size	Districts	Region	Sample (%)
<b>Punjab</b>	2177	Faisalabad	Rural	77
			Urban	23
		Rawalpindi	Rural	47
			Urban	53
		Multan	Rural	58
			Urban	42
<b>Sindh</b>	910	Karachi	Rural	5
			Urban	95
		Hyderabad	Rural	49
			Urban	51
<b>Khyber Pakhtunkhwa</b>	514	Peshawar	Rural	49
			Urban	51
<b>Balochistan</b>	199	Quetta	Rural	76
			Urban	24
<b>Total</b>	<b>3800</b>			

The next section briefly highlights the people’s expectations from the newly-elected government followed by the sections on the importance that the respondents attached with tax and energy reforms in the country. We conclude with recommendations on improving awareness and confidence in reform measures required to address the ballooning fiscal deficit, rising government debt and pressures on domestic prices and exchange rate.

### 3. Expectations from New Government

In many respects, the 2013 general elections marked a turning point in the history of democracy in Pakistan. It was the first time since 1947 that a civilian government completed its tenure and power was transferred through elections to another civilian government. This is despite high pre-electoral violence and local conflicts. In the four weeks leading up to the election day, there were 130 attacks, which claimed 150 lives.<sup>2</sup> The voter turnout was 55% compared to 44% in 2008 elections.<sup>3</sup> A significant factor in the increased turnout was unprecedented youth participation.

Our survey in many respects captures the sentiments of those who voted in the elections. The results indicate that 81% of the respondents in our sample have cast their votes. The average age of our respondents was 38 years out of which 44% were self-employed and 39% were wage recipients. The households survey included both male-headed households (95%), and female-headed households (5%). In terms of regional disaggregation, 48% are from urban areas and 52% are rural households. The mean monthly incomes of our respondents ranged between PKR 15000-30000. The tax threshold as per the statutory rules is around PKR 33,000. In our sample, we have 23% respondents above this threshold. This seems reasonable as the household income and expenditure survey of 2012, published by the Pakistan Bureau of Statistics had 21% observations above this threshold.

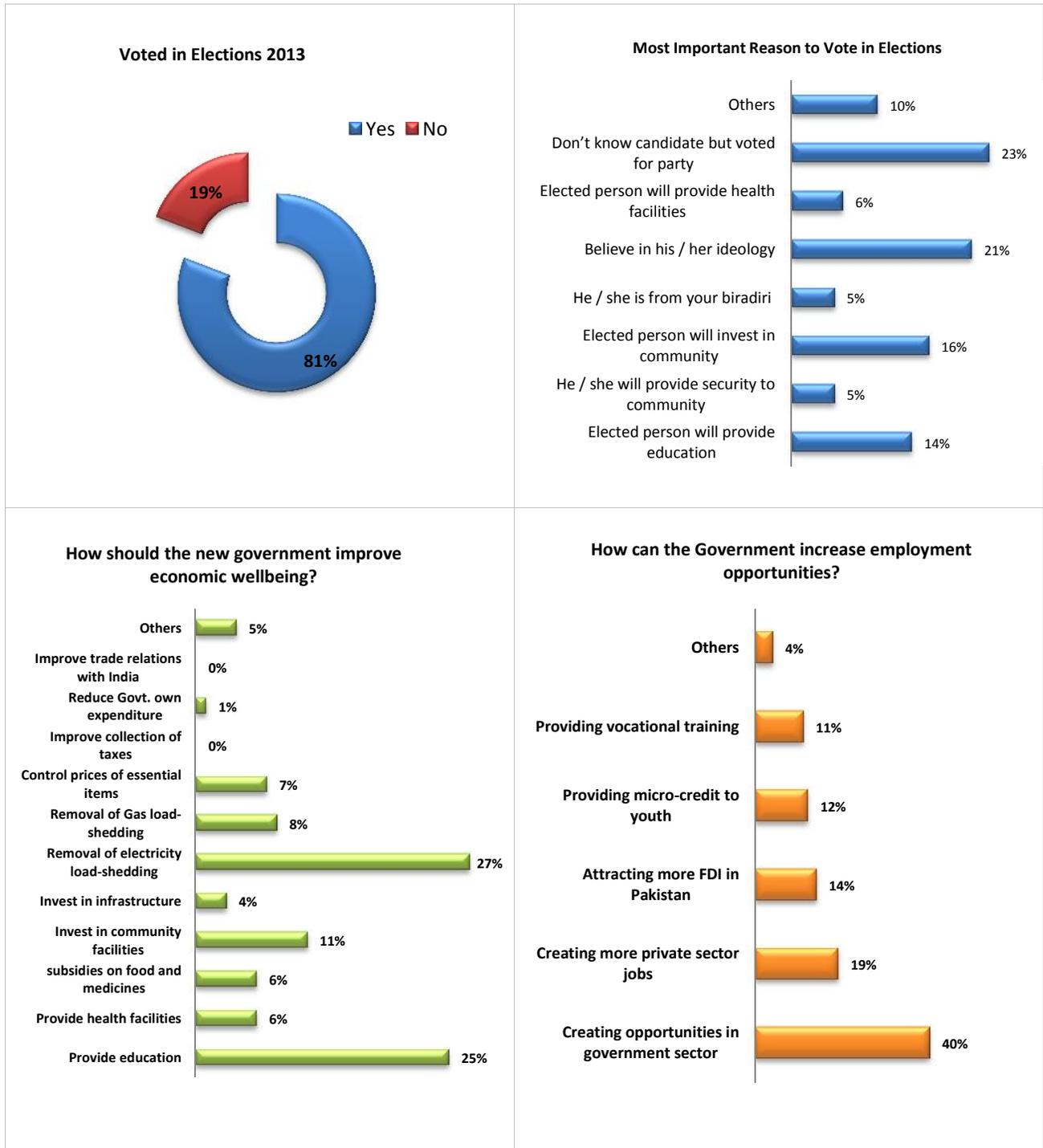
For 23% of the respondents, the most important reason to vote was loyalty with the political party even if the candidate was not known (Box 1). The public understanding still seems weak regarding the revival of growth and jobs in Pakistan. About 27% attached economic wellbeing with the redressal of load-shedding issue, and 40% thought that solution to their problems lies in the creation of public sector jobs. There were expectations that facilities like microcredit and vocational training can improve jobs prospect. Only a minority (19%) responded that the government should allow markets to function competitively in turn implying an increase in private sector's capacity to generate jobs. These perceptions need to be corrected. The government with the help of business associations and chambers should convey a clear message that (in line with its own manifesto) a competitive private sector will be the engine of future economic growth.

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<sup>2</sup> 'Progress in Pakistan: Report from 2013 Elections'. National Endowment for Democracy

<sup>3</sup> Election Commission of Pakistan 2013

**Box 1: Elections and Voters' Expectations 2013**



Source: SDPI Survey Unit 2013

It is important to note that while respondents associated economic wellbeing (exhibited above) with current challenges such as energy crisis, tax revenues were not associated with economic wellbeing. While it is difficult for households that have far more pressing needs to highlight this link; this also points to lack of understanding that tax evasion can adversely impact the provision of not only energy but also infrastructure and social services in general.

The failure of the past governments in tax revenue collection and building public confidence in the tax collection system has resulted in the state's inability to service important expenditure on public goods and repeated resort to IMF packages. It is important to note that Pakistan has never fully implemented the reforms it had promised with the IMF under various stand-by and medium-term arrangements.

#### **4. Are Taxes Important?**

Pakistan has the lowest levels of tax collection with respect to income levels in the world, even compared to countries with similar levels of per capita income such as Bangladesh and India. As mentioned in the previous section, there is a weak understanding at the household-level of how dependent any government is on the taxpayers' contribution for running the state affairs. In our survey, there is a large proportion which felt that there is no justification of increasing taxes under a low economic growth. Similarly, there was a substantial proportion (54%) who felt that food and medicine should be exempted from taxation across the board regardless of the income class. The knowledge that food and pharmaceuticals are already being subsidized and protected from foreign competition is missing.

##### **4.1 Trust Deficit**

There are 68% respondents who view taxation system in Pakistan as unfair and non-transparent and suggest that this perception must be corrected if the state wishes to bridge the current trust deficit with the taxpayer. Around 91% of the respondents were of the view that their taxes are not effectively utilized and they don't see how their region benefits from taxes.

The processes of demand-side accountability were also termed weak. The respondents agreed that they had not been proactive in inquiring from local authorities regarding the utilization of taxes in their own region. 93% respondents did not hold the local authorities accountable on the utilization of taxes in local area development. Many also agreed that general ignorance on sources of information on tax collection and expenditures is due to absence of taxpayers' education.

Evidence from other countries reveals that open budget initiatives have been fundamental in gaining the taxpayers' confidence in fiscal transparency. It is important in the post-18<sup>th</sup> amendment milieu that the government revenues and spending should be reported in a disaggregate manner that allows taxpayers to monitor utilization of funds at the lowest tiers of administration. This in future could also strengthen mechanisms related to citizens' voice and monitoring of budget spending.<sup>4</sup>

#### **4.2 Narrow Tax Base**

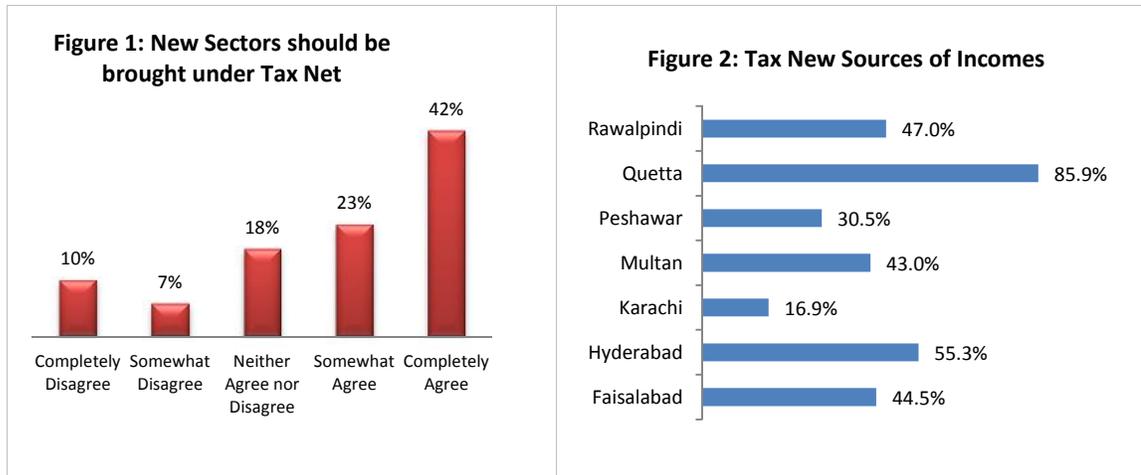
In a country of around 190 million people, only 2.6 million are NTN holders and around 0.7 million actually paid taxes in 2013. The corporate sector represents only 1% of overall tax base. Out of over 50,000 companies registered with SECP, only 24,000 are NTN holders. The agriculture sector, which contributes 1/5<sup>th</sup> of GDP remains exempted from income taxes and the same is true for many of the services sectors like wholesale and retail trade.

Owing to the structural transformation in Pakistan's economy, several new sources of income have also appeared in the current reporting of national income accounts at the Pakistan Bureau of Statistics. For example, several services sub-sectors, including private doctors, tuition centers, accountants, IT and software houses and beauty parlors fall in this category. According to FBR claims, these sub-sectors are still out of the tax net and many continue to operate for decades in an informal setting.

In our survey, 42% of the respondents (Figure 1) completely agreed to the need to tax the new sub-sectors (particularly in agriculture and services). This indicates an important entry point for the government as the graph below indicates that overall 65% of earning individuals are in favour of levying income taxes on new income sources. Many potential taxpayers can be tapped by simplification of compliance process. Around 25% respondents have indicated that compliance with tax systems was cumbersome and perhaps another reason why many incomes have still not coming under the tax net.

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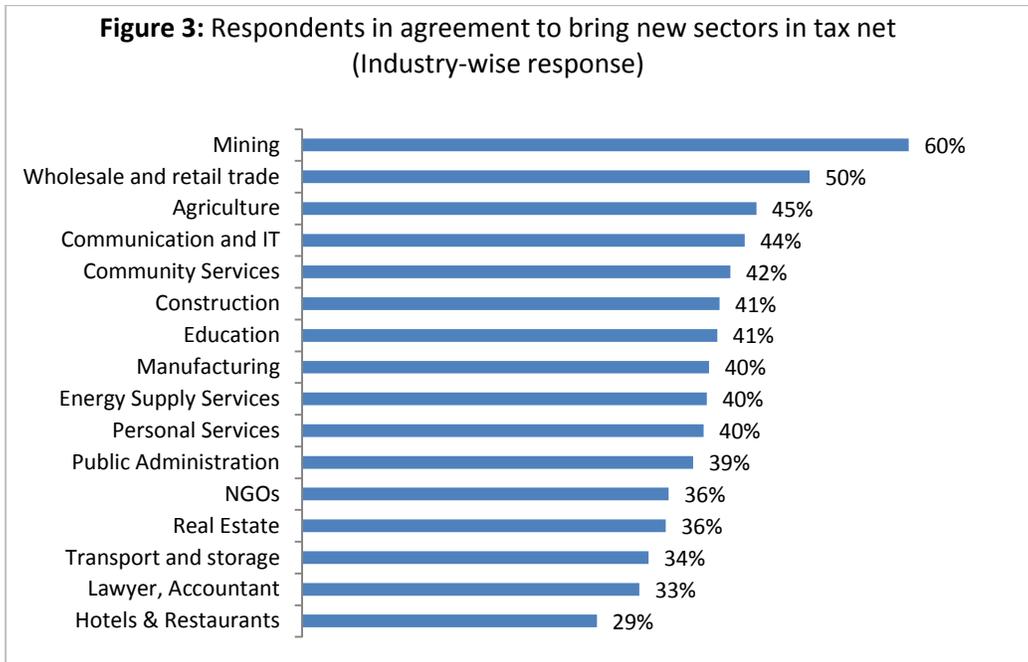
<sup>4</sup> For Pakistan-specific indicators on open budget mechanisms see Open Budget Survey 2012 by International Budget Partnership ([www.internationalbudget.org](http://www.internationalbudget.org)).



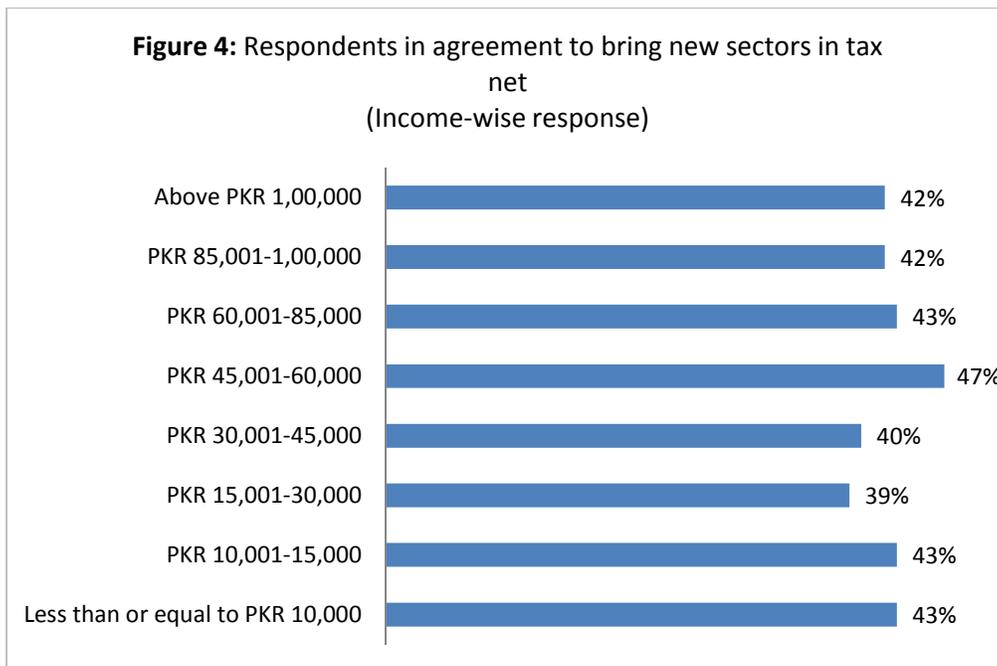
**Source:** SDPI Survey Unit 2013

Despite the desire to bring new sources of incomes in the tax net, the response in favour of this argument varied across regions. For example, Karachi had the least number of respondents in favour of taxing new sources of incomes (Figure 2). Similarly, the response in Peshawar was also low if compared with other districts such as Hyderabad in Sindh and Faisalabad in the Punjab. One reason for this may be the large rural population in Hyderabad and Faisalabad (as compared to, for example, Karachi). The rural segment carries a strong feeling that the rich are not being taxed optimally.

It is not surprising to note that those related to services sub-sectors like hotels, real estate, transportation, lawyers and accountants were not in favour of taxing the new sectors and incomes originating from them (Figure 3). These sub-sectors represent over 60% of value added in the services sector of Pakistan, yet remain out of the income tax net. Many do not register for prolonged periods and continue to operate as informal entities. The income-wise response to the same question (Figure 4) indicates that even in the higher income groups a large proportion, i.e. over 50% are not in favour of bringing new sectors in the tax net.



**Source:** SDPI Survey Unit 2013



**Source:** SDPI Survey Unit 2013

Is broadening of tax base difficult? Many in Pakistan have argued that this is not the case. For example, data from Pakistan Telecommunication Authority (PTA) shows that there are 102 million mobile phone subscribers in the country. Many have phone bills

several times larger than their reported incomes. In 2011, the Finance Ministry had revealed that there are 700,000 untaxed persons, who have multiple sources of income, more than one bank account, own property and regularly travel abroad.

What is stopping the government from bringing the already identified persons in the tax net? The key reason is the government's own complex legal process that enables easy evasion. Tax defaulters are fined nominal amounts and even that is rarely paid. The high costs of litigation and time involved prevents FBR from an effective trail. FBR, in its recent history, has never been able to get a single defaulter imprisoned. In line with the practice in other countries, Pakistan should adopt 'Taxpayers Bill of Rights' to increase transparency and ensure that appeals are settled in the court.

Apart from this, taxation on agriculture income should be debated. New innovative ways to tax either through land revenue or agriculture produce should be introduced together with enhancing capacity of revenue collecting authorities.

A broad based system of Value-Added Tax (VAT) should be introduced that would replace the current General-Sales-Tax (GST) regime together with its implementation and management plan. Such a move will facilitate documentation of economy and thereby bringing new incomes in the tax net.

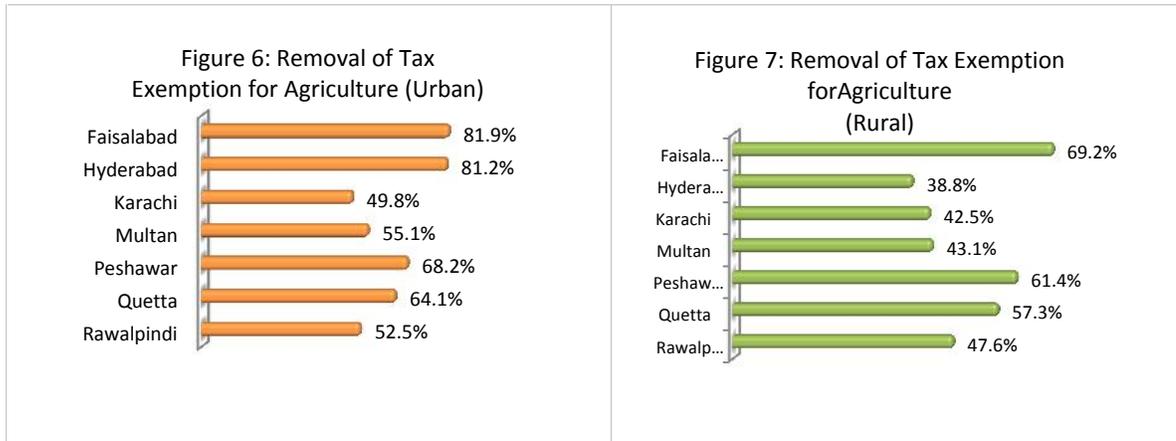
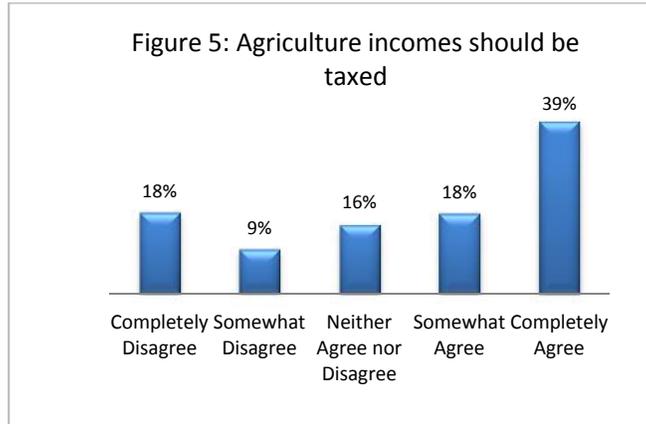
### **4.3 Are Exemptions Justified?**

A number of tax exemptions are available to different groups of income (e.g. military personnel) under the Income Tax Ordinance 2001 and in the Statutory Regulatory Orders issued from time to time. These include exemptions, concessions, deductible allowances, tax credits, zero rate income bracket, special provisions and certain withholding taxes. Exemptions reduce annual tax collection by three per cent of GDP each year. These exemptions are discretion of the government and are not reviewed by parliament at the time when Finance Bill is being formulated or amended.

We discussed in the beginning that 54% respondents believed that food and medicine should be exempted from any form of taxation regardless of the income class. Furthermore, we specifically probed for agriculture sector, which is exempted from any taxation levy since Pakistan's first central government budget.

While agriculture incomes still remain exempted, there were 57% respondents, who favoured taxing agriculture sector (Figure 5). In overall terms, districts such as Quetta and Faisalabad had over 50% respondents in favour of taxing agriculture. It is understandable that Multan's response was relatively low given its large labour force associated with farming activity. Similarly, most rural areas had lesser endorsement for

agricultural taxation as compared to the urban parts of the same district (Figure 6 and Figure 7). There were additional 16% respondents who remained indifferent about this matter. On a further probe, most of these respondents said that they favour agricultural taxation, but such a move can lead to discontentment among rural population.



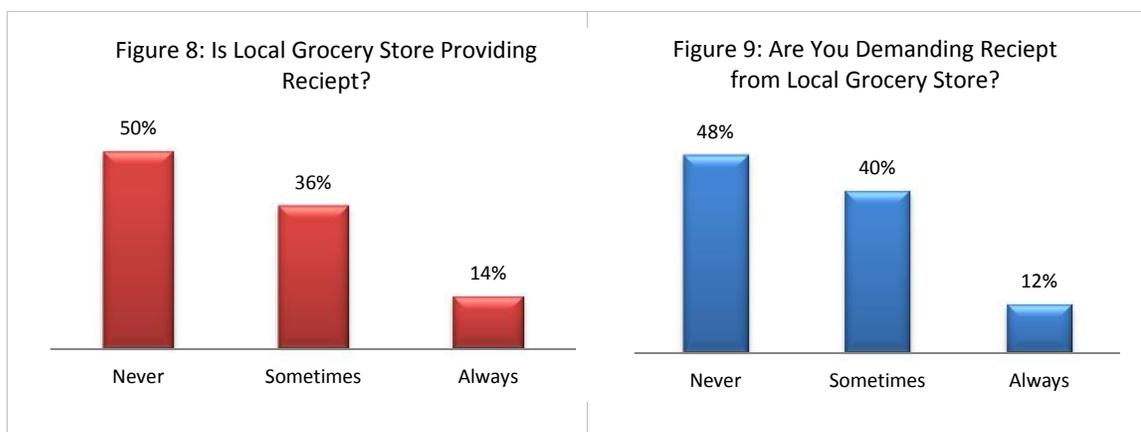
Source: SDPI Survey Unit 2013

The analysis by income class exhibits that 37% of low income group favoured agriculture taxation. During our qualitative assessment they felt that a large number of farmers falls in the tax net, but they don't pay taxes.

Going forward it is recommended that the government should refrain itself from indiscriminate use of SROs at FBR, which allow exemption, in turn, leading to revenue loss. There are currently over 1900 SROs, which should be abolished and only parliament should have the authority in future to allow any exemptions.

#### 4.4 Documentation of Taxable Economy

The rising informal sector is a matter of concern for both the federal and provincial governments. These segments largely go untaxed causing loss to the exchequer. In the rural areas (and peri-urban area), there is no established norm of providing documentation (in the form of computer generated or manual receipt) upon transactions. Around half of the population surveyed never gets a receipt while making day to day purchases above PKR 100. For the urban settlements, this survey exhibits that only 14% transactions at the household level are captured through formal documentation. A good proxy to gauge this is the transactions taking places at the local grocery stores (Figure 8 and Figure 9).<sup>5</sup>



Source: SDPI Survey Unit 2013

We have explained earlier that a system of full-fledged VAT instead of GST can help in the documentation of economy. VAT will also eliminate current exemptions under GST. The Section 111(4) of the Income Tax Ordinance<sup>6</sup> provides cover to the money remitted in Pakistan. It is recommended that the declaration of income should be compulsory for money remitted to Pakistan. Finally phasing out of presumptive taxes and moving towards a regime of determining taxes after filing of returns can prevent under reporting of tax liabilities.

#### 4.5 Tax Administration

More than 95% of the total revenue is collected by FBR. The provinces have yet to fully implement comprehensive resource mobilization strategies. The frequent changes in tax

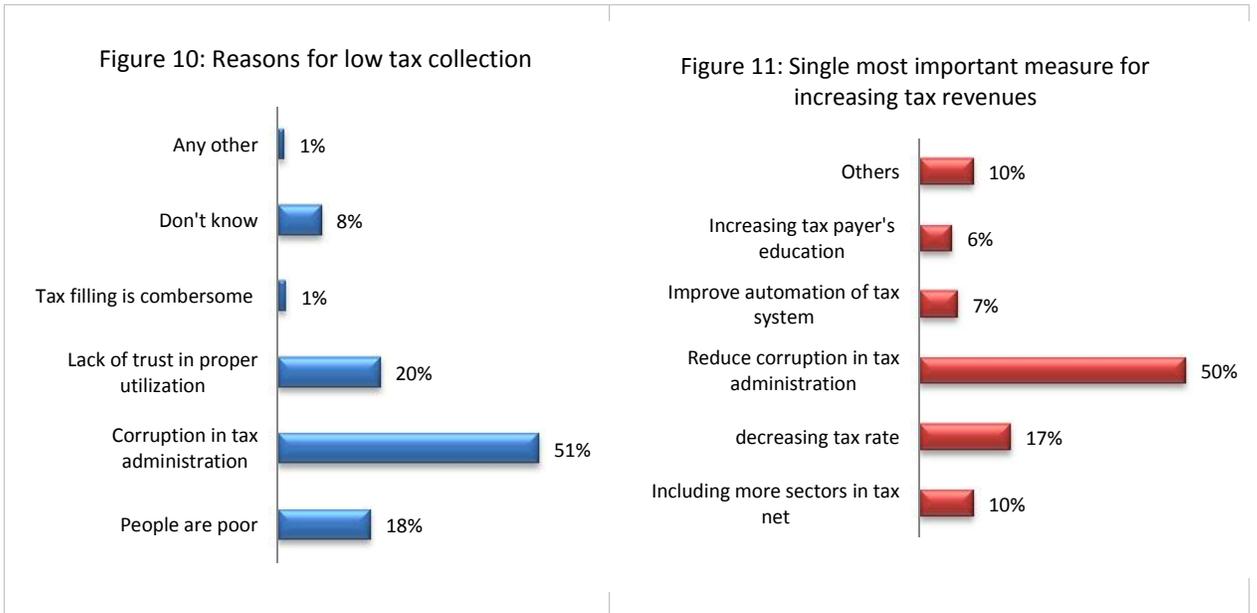
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<sup>5</sup> This response is for all households (includes urban and rural).

<sup>6</sup> Income Tax Ordinance 2001 amended up to 30<sup>th</sup> June 2013.

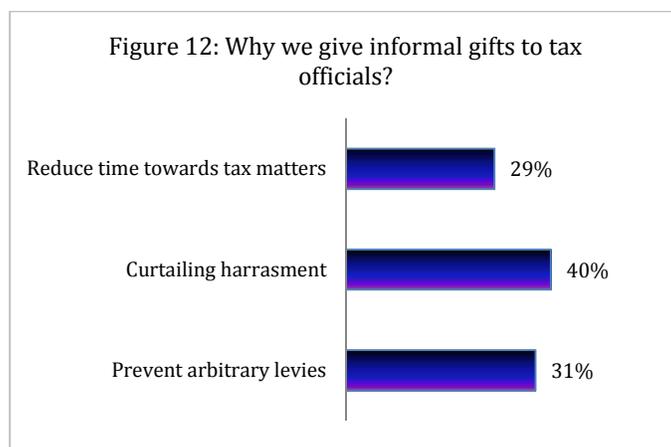
legislation and discretionary powers to the FBR have reduced transparency in the overall tax regime. There are weak controls in terms of taxpayer registration system and penalties for non-compliance are inadequate and expensive to put in practice.

Around 51% of the respondents in our survey view tax machinery as corrupt and non-transparent (Figure 10). On a similar question of how tax revenues may be increased, 50% were of the view that reducing corruption can bring additional taxes (Figure 11). Other recommendations for increasing tax revenues include decreasing tax rates (17%), automation of tax system in a manner that takes account of multiple sources of incomes (7%), and increasing taxpayer's education and knowledge (6%).



**Source:** SDPI Survey Unit 2013

Our respondents were also asked key reasons why the need arises for them to give informal gifts to tax officials (including bribe). As multiple responses were allowed for this question, 40% revealed that they genuinely feared harassment by the officials (including repeated visits or call to tax court) if they did not provide such informal gifts (Figure 12). The other important responses included people's fear of being charged extra levies and increased time involved in compliance.

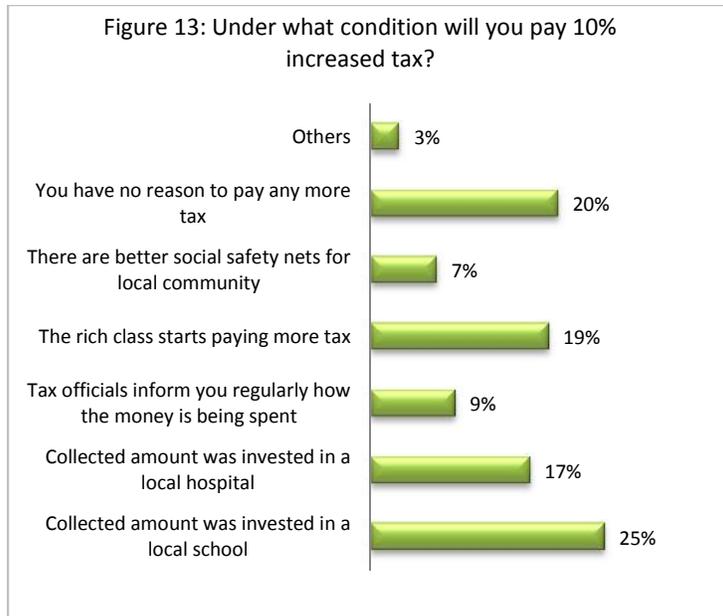


Source: SDPI Survey Unit 2013

It is intuitive that the government cannot afford such low level of taxpayers’ confidence towards the resource mobilization process. Tax Administration Reform Project (TARP) has been the main tax reform of the government between 2005 to 2009. The evaluation of this programme while termed the project progress unsatisfactory, however highlighted several lessons for the future. In order to improve the effectiveness of tax collection, fundamental organizational changes will be required at federal and provincial levels. The legal requirements for such a change should be prepared before the next round of administrative reforms are undertaken. Investment in smarter ICT tools will have to be undertaken, which in turn can minimize human intervention and thereby reducing the level of corruption.

#### 4.6 Willingness to Pay Taxes

42% respondents were willing to pay 10% increased taxes if the collected amount may be invested in local-level education and health initiatives in their region, 19% will be willing if the richest cohort starts paying more tax in Pakistan, and 9% showed willingness only if tax authorities have a transparent mechanism of showing how the overall collection is being spent during the year (Figure 13).



**Source:** SDPI Survey Unit 2013

This is an important entry point for the government as well as those interested in reform design. The upper income group has exhibited some understanding of how taxes can improve the provision of social goods (Table 2). This group is willing to pay 10% increased direct taxes if they see public investment in social sectors. Furthermore, the same income group wishes greater information from tax authorities as to how their contributions are spent for development purposes. One can also infer that for the lower income group, greater tax education and outreach is required.

**Table 2: Willingness to pay tax (income-wise response)**

You will pay 10% increased tax if:	Lower Income Group	Upper Income Group
The collected amount was invested in a local school in your community	24.1%	26.4%
The collected amount was invested in a local hospital in your community	17.9%	18.9%
The tax officials informed you regularly how the money was being spent	5.9%	11.3%
The rich class starts paying more tax	17.1%	20.4%
There are better social safety nets for your local community	8.2%	3.4%
Or you have no reason to pay any more tax	22.5%	14.7%
Others	4.2%	4.9%

**Source:** SDPI Survey Unit 2013

The upper income group, in our analysis, includes those earning above PKR 60,000 per month. However, given that the mean income is below the taxation threshold of PKR 33,000 per month, we asked the same questions to the lower income group in order to: a) gauge their perceptions on how fair and just are taxes in Pakistan, and b) see reaction type of future taxpayers.

From the viewpoint of policy design, it is also important to work on the 20% who claim that they have no reason to pay more taxes. It is this segment, which is disillusioned by the lack of public sector outreach towards ensuring transparent use of taxes. Such sentiments are strengthened when 14% of public representatives elected in 2013 do not even have a National Tax Number (NTN). 48% Members of National Assembly (MNAs) paid no tax in 2012.

#### **4.7 Tax Compliance**

Around 67% of the respondents falling under the tax net were well aware of the tax filing process, however, 33% showed ignorance. Out of those in the tax net, 77% respondents had paid their taxes in the last fiscal year whereas 23% had not paid.<sup>7</sup> None have been inquired in the past 3 years for non-compliance. Around 12% respondent end up seeking external help for filing taxes (e.g. through tax solicitors) and on average these taxpayers paid PKR 10,084 in 2012 towards compliance and related costs. In our sample, 93% of the income taxpayers have never registered any grievance with the tax authorities and neither happens to know the process through which this may be accomplished.

The prompt redressal of taxpayers' grievances is important in order to safeguard the rights of taxpayers and enforce better standards of accountability of officials. This feedback can provide important insights for the leadership in tax authorities and help them towards better management of human resources.

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<sup>7</sup> We did not seek any documentary proof. The survey team relied on the response provided by the head of household.

### **Summary of Tax Reform Measures**

- Open Budget Initiatives, such as the one practiced in several Commonwealth countries, can strengthen fiscal transparency and overtime enhance taxpayers' confidence.
- Broadening of tax base in the short to medium term is possible through 'Taxpayers Bill of Rights', and innovative ways to tax agricultural and services sectors. For the longer term a strategy for transitioning towards VAT should be put in place.
- Abolish SROs that allow exemptions to select few. Future SROs should be debated in parliament.
- Declaration of income should be mandatory for money remitted to Pakistan.
- Tax administration measures that put in place smart ICT tools can help in minimizing human interference and corruption.
- Outreach programmes for taxpayers can demonstrate proper utilization of tax resource at micro level. These outreach programmes, if carefully designed, can help the public understand how paying taxes can improve public service delivery in social and infrastructure sectors.
- Prompt grievance redressal mechanisms will help bridge the high levels of trust deficit between the state and the taxpayers.

## **5. What is wrong with Energy Sector?**

According to the Economic Survey of Pakistan, during 2011-12 around USD 4.8 billion or 2% of Gross Domestic Product (GDP) was lost due to power sector outages. This is a major factor behind Pakistan's disappointing economic performance over the past five years, with GDP growth averaging under 3% (GoP 2013).

The key challenges confronting this sector can be categorized into demand-supply gap, inefficiency and pilferage, and affordability. In 2012, the average demand-supply gap was observed at around 5000MW (31.8% of peak demand). Around 44% of power was generated through expensive thermal means. The transmission and distribution (T&D) losses stood at 25% and theft was valued at PKR 140 billion.

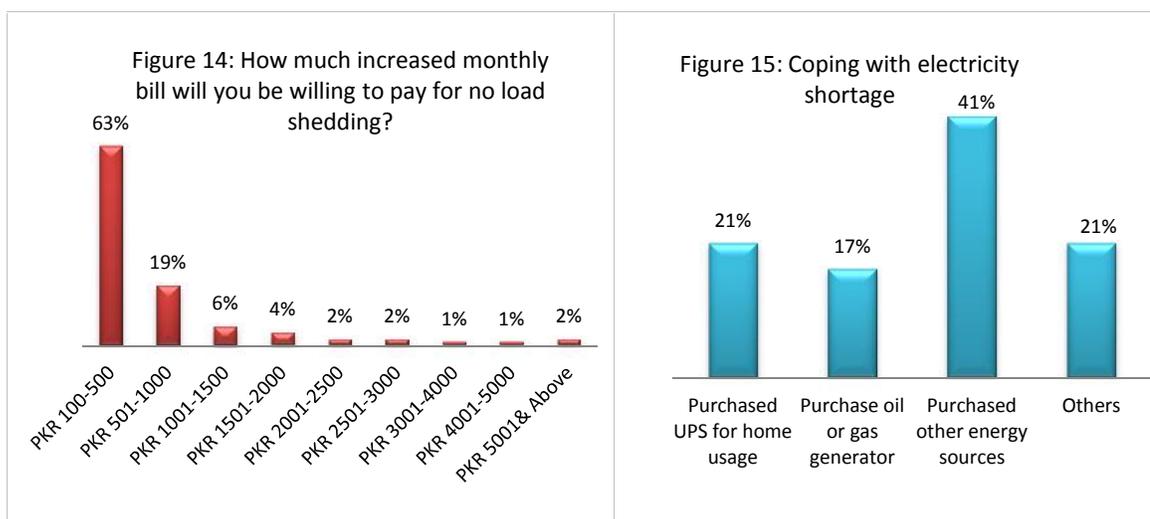
In our survey, 53% of the respondents considered that the electricity prices are too high and had minimal idea that they were already receiving electricity on subsidized rates. Similarly, 17% also termed gas prices as exorbitantly high. An interesting analysis of this survey reveals that

out of those who term energy prices high, 14% are already spending on alternative sources or coping strategies during spurts of load-shedding. The respondents, to a large extent, are missing the understanding that load-shedding is in fact taking place due to full economic costs not being paid by the consumers.

32% respondents reported facing unscheduled load-shedding spanning over an average of 13 hours daily. Our average respondents are spending PKR 2,980 per month (or USD 29/month) on getting electricity through formal mechanism, i.e. WAPDA installed meter.<sup>8</sup> On average, a household that is using gas for heating and cooking, is spending PKR 960.2 per month (or USD 9.2/month). It is a matter of research interest whether or not it should be justified to have a large tariff variation between various sources of energy reaching the same household.

### 5.1 Willingness to Pay

The respondents were asked regarding their willingness to pay additional power bill if they were provided 24 hours uninterrupted electricity. The majority (63%) were biased towards the lowest category, i.e. PKR 100-500 additional bill (Figure 14). The number sharply plummeted to 19% when they were asked to pay an amount greater than PKR 500.



Source: SDPI Survey Unit 2013

The higher income group as indicated below has the ability and willingness to pay a larger monthly bill than currently being charged. In lieu of no future load-shedding 12.7% of the upper income group is ready to pay additional PKR 5000 and above as part

<sup>8</sup> An exchange rate of PKR 104 is used here for conversion.

of the monthly bill (Table 3). It is also important to note that no respondent in our sample declined to pay an increased amount if it was guaranteed that there will be no load-shedding in future. Most of the respondents have already incurred some capital cost towards coping strategies (Figure 15).

Table 3: Willingness to pay for power (income-wise responses)

How much increased monthly bill will you be willing to bear for no future load shedding?	Lower Income Group	Upper Income Group
PKR 100-500	75.8%	19.3%
PKR 501-1000	15.3%	19.3%
PKR 1001-1500	3.5%	14.3%
PKR 1501-2000	2.5%	18.5%
PKR 2001-2500	1.2%	5.8%
PKR 2501-3000	0.4%	3.5%
PKR 3001-4000	0.2%	2.7%
PKR 4001-5000	0.4%	3.9%
PKR 5001 and Above	0.7%	12.7%

Source: SDPI Survey Unit 2013

We split across regions the respondents, who were willing to pay an amount equal to or greater than PKR 2,500 in lieu of no future load-shedding (Table 4). We can observe that Karachi was the only district in our sample where no one agreed to pay beyond PKR 5,000. This is perhaps because of the low incidence of load-shedding being faced by Karachi after the privatization of Karachi Electric Supply Corporation (KESC). Comparing this with Faisalabad – a city faced with prolonged power outages and resulting riots between Faisalabad Electric Supply Company and industrial workers, one can see 75% of willing respondents having ability to pay beyond PKR 5,000 followed by Rawalpindi and Quetta at 67% and 50% respectively.

**Table 4:** Willingness to pay for power (region-wise responses)

How much increased monthly bill will you be willing to bear for no future load shedding?	PKR 2501-3000	PKR 3001-4000	PKR 4001-5000	PKR 5001 and Above
<b>Faisalabad</b>	18%	2%	5%	75%
<b>Hyderabad</b>	35%	11%	15%	39%
<b>Karachi</b>	42%	25%	33%	
<b>Multan</b>	18%	12%	27%	43%
<b>Peshawar</b>	50%	17%	22%	11%
<b>Quetta</b>	25%	23%	2%	50%
<b>Rawalpindi</b>	28%	2%	3%	67%

Source: SDPI Survey Unit 2013

We exhibit below OLS estimates of determinants of willingness to pay for a more certain supply of power at the household level. The factors, which negatively impact the willingness to pay (and are statistically significant), include money spending on alternative sources as a coping strategy, as if the respondent is already a taxpayer. The factors that are significant and positively impacting the willingness include income, education and industrial type (Table 5).<sup>9</sup> In broader terms, it is usually the awareness regarding root causes of the issues in energy sector that influences long-term spending decisions (Zorić and Hrovatin 2012).

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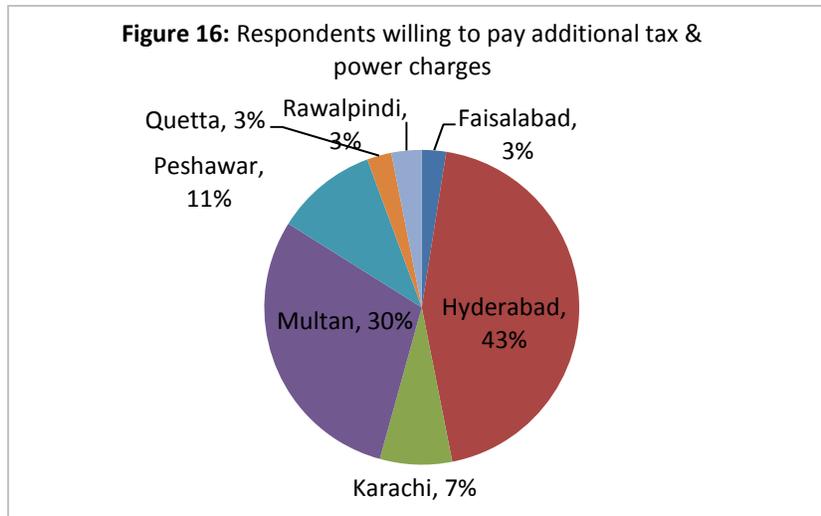
<sup>9</sup> The coding for industrial type is higher for more sophisticated and skilled work.

**Table 5: Factors Influencing Willingness to Pay for Electricity**

Dependent Variable: Amount willing to pay for no future load shedding (log)				
Model Variables	Coefficient	Std. Error	t-stat	Sig.
Constant	2.815	.277	10.180	.000
Spending on Coping Strategy (log)	-.411	.067	-6.144	.000
Province	-.233	.036	-6.428	.000
District	-.104	.015	-7.017	.000
Region	-.182	.063	-2.882	.004
Education (No. of years)	.026	.007	3.771	.000
Industry type	.008	.005	1.532	.126
Income (log)	.327	.022	15.189	.000
Paid tax in last financial year	-.234	.080	-2.930	.003
Electricity supply (daily hours)	-.004	.008	-.540	.589
Voted in Election 2013	.065	.075	.874	.382

\*Electricity supply and voting behavior are statistically insignificant.

While being a taxpayer and also bearing increased energy costs implies painful short-term adjustment within the household-level budget. However, we see that there were 27% respondents who agreed on both. i.e. the crisis of development and energy specifically can be addressed through paying the rightful taxes and full economic cost of energy. This realization certainly varied substantially across regions. These respondents were willing to pay 10% additional tax as well as a PKR 2500/month increase in the power bill (Figure 16).

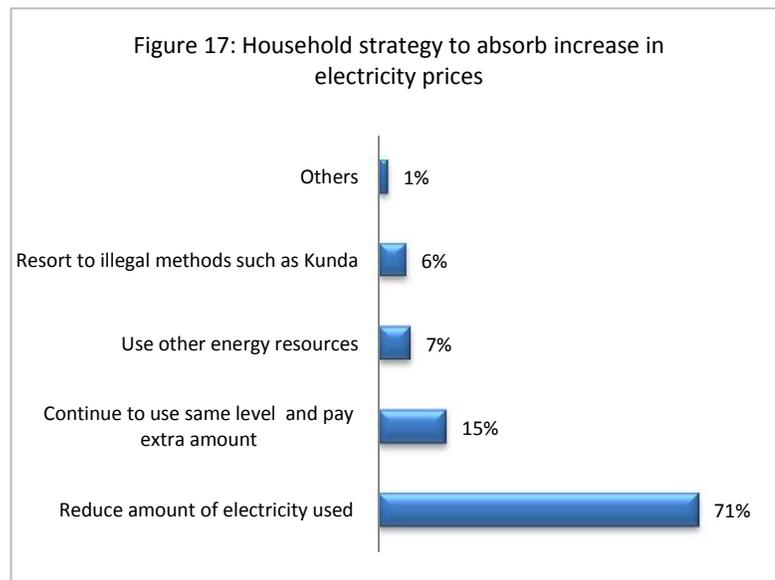


Source: SDPI Survey Unit 2013

## 5.2 Line Losses and Theft

In August 2013, the secretary for the Ministry of Water and Power informed the Senate Standing Committee that Pakistan loses annually PKR 150 billion (USD 1.7 billion) in line losses and power theft. Till August 23, as many as 770 cases of theft were registered and under trial, but only three cases were punished. Moreover, the fine imposed was under PKR 5,000 in each case.

Our survey results show that 71% households in the wake of power outages had no choice but to adjust with the reduced supply of electricity whereas 15% of the respondents, as part of their coping strategy had to reduce their spending on other household expenditure categories as they were unable to reduce their current power usage (Figure 17). Surprisingly, 6% of the respondents confessed to using illegal methods like *Kunda* to absorb increase in electricity prices. 42% respondents claimed to have known instances of electricity theft in their area (e.g. *Kunda* method). Furthermore, 17% remained indifferent. It is the higher income group that had relatively greater response of resorting to illegal methods (6.5%) compared to around 6% from the lower income group.



Source: SDPI Survey Unit 2013

This clearly indicates lacunae in the energy sector accountability mechanism. Amendments in Pakistan Penal Code are required so that there is certainty of effective punishment in the cases of energy theft. The DISCOs also need to work on strengthening their outreach initiatives in order to correct the current perception at the community

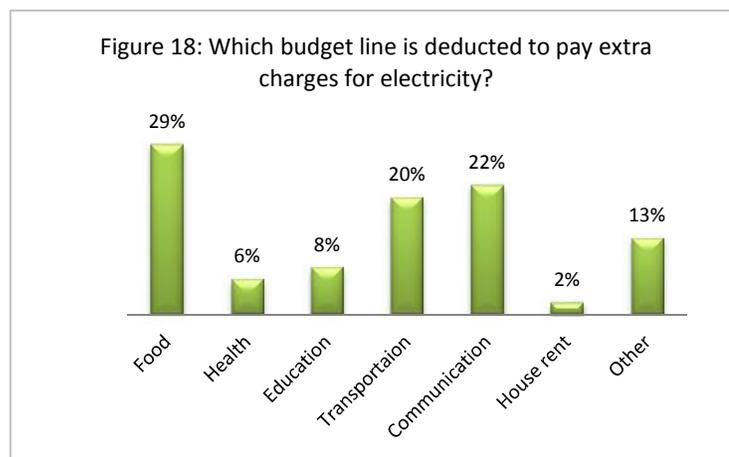
level that reporting theft may not be of any use as there will be no effective trial on such instances of crime.

### 5.3 Coping Strategy

As the energy crisis worsened, several coping strategies have been observed at the household and community level. Some were in fact introduced by the small and medium enterprises at the local level. While most of these strategies such as the purchase of UPS and generators are public knowledge, however two interesting examples were seen in the Punjab. First the business community in Shiekupura started importing coal-fired plants from China to provide localized power and second was cement plants in Chakwal, importing rubber as a substitute fuel. Both examples obviously have implications for the environment. Our interest here is to see how much additional spending was required for the coping strategy and how this spending was made available.

34% respondents incurred additional expenditures as part of any coping strategy. Out of these, 21% purchased UPS and 17% purchased gas/oil generators while 41% resorted to other alternatives.

There were respondents who said that they continued to use the same level of electricity and paid extra for alternate sources. These were asked regarding the household budget head from which they deduct their expenses in order to cope with additional household spending on energy. Among them 29% reported reducing their budget on food in-take (Figure 18). Around 8% reduce their children's education expenses, and 6% reduces their medical-related expenditures.



Source: SDPI Survey Unit 2013

While energy is not a public good in any socio-economic sense, its demand is competing with food, education and health. All of these together can in fact weaken the country's overall goals towards food security, poverty reduction and welfare enhancement. A more comprehensive research should be undertaken to map the impact of 'energy poverty' on people's wellbeing.<sup>10</sup>

#### **5.4 Future Outlook of Energy Sector**

The new power policy hints towards reforms related to a) bringing about efficiency in generation, transmission and distribution, b) generating competition in the energy market and c) ensure sustainable power in the longer run. While these may be important measures our respondents were more concerned with any short to medium term solutions that the government might use in order to give relief from load-shedding. Our questionnaire had several questions that probed the households of any future tradeoffs they might have to make if the energy crisis continues.

If the electricity load-shedding grows worse and it becomes important (as a short-term solution) to divert gas from certain sectors, around 65% favoured the view that gas supply to public and private transport may be reduced, 13% were of the view that gas supply to households for cooking and heating purposes may be reduced. 48% respondents were of the view that household needs more energy than any other sector, therefore, it should be protected. Around 44% respondents were of the view that industrial sector should be given priority so that industrial jobs can be protected. These mostly included salaried workers whose livelihoods are associated with commodity producing sectors in some manner. The entry point for the government here will be to gradually start reducing the gas supply to transport sector given that a majority see this as a necessary solution in the short-term.

Another question was asked about the single most important step that should be taken by the current government to overcome the energy crisis. Around 51% of the respondents demanded to take action against electricity theft (Box 2). It is interesting to note that these 51% have never reported theft themselves. 13% respondents wished to see the government investing in alternate energy sources. We also had responses in favour of privatizing power sector entities (12%) and there are 9% favouring an increase in subsidies to the energy sector as a whole. As curtailing theft has been a priority for

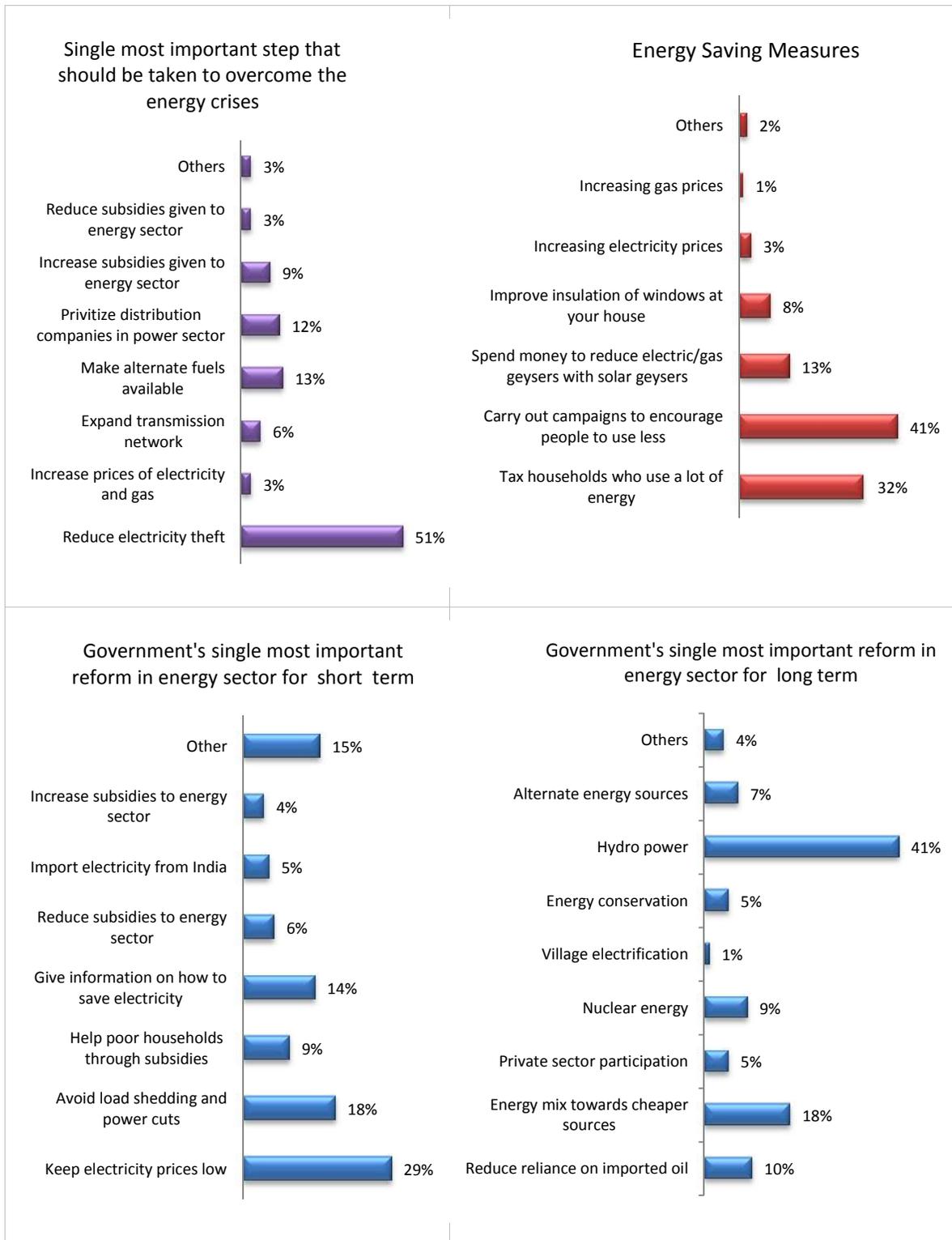
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<sup>10</sup> International Energy Agency defines 'energy poverty' as lack of access to modern energy services. These services are defined in terms of household access to electricity and clean cooking facilities.

most respondents, the government and civil society organizations can strengthen supply and demand-side accountability measures respectively. The social accountability tools if adopted will help communities in better demanding action against theft.

To a question on the government's most important priority in the energy sector for the short-term, 29% respondents were of the view that the government should not increase the prices of electricity and try to focus more on improving the supply side. 14% felt that in such circumstances the government must run a campaign throughout the country that may provide information on how to conserve the various forms of energy and certainty of punishment in the event of theft. Over the longer term, 41% were of the view that the government must focus on making investment in hydel power projects. They realized, however, that the capital cost of hydel projects is relatively higher than other options. Out of these respondents, 27% were ready to pay 10% additional direct taxes if public investment in hydel power projects was assured and demonstrated. It is encouraging to note that these citizens recognize their responsibility towards the development of high cost public projects, however they represent only 9.6% of our overall sample size.

## Box 2: Energy Crisis and Reforms



Source: SDPI Survey Unit 2013

The respondents also proposed different measures to conserve energy in their region and 41% of them were in favour of carrying out campaigns to encourage people to use less amount of electricity, 32% recommended that the government should impose tax on those households who use electricity beyond a certain limit, 13% respondents suggested that the government may spend to promote alternatives like solar geysers.

For organizing campaigns to reduce energy use, the newly formed Ministry of Climate Change and ENERCON can take this responsibility for introducing innovative messages to reach the grass roots level. The environmental protection agencies at the provincial levels can then implement such a campaign activity at local levels. The use of print and electronic media should also be considered for this purpose.

As regards respondents who favoured taxing households who use electricity beyond certain limits, the government can exercise a smarter tariff structure whereby there are progressive levies on the use of power. Besides promoting conservation, this can bring additional revenue to the government.

The import of greener technology should be further liberalized. Apart from the tariff rates there are concerns of non-tariff barriers preventing imports of technologies that are more energy efficient (e.g. solar equipment).

#### **Summary of Energy Reform Measures**

- Legal amendments may be undertaken to ensure effective punishment in case of energy theft.
- The government should correct the perceptions at the community level that power sector defaulters are above the law. The Punjab province already has a system governed by local-level committees that keep a check on theft of irrigation water. Perhaps a similar mechanism for energy sector can be institutionalized.
- The communities can better demand improved service delivery in energy sector through the use of local-level social accountability tools. Several civil society organizations are already using these tools for improving service delivery in education, and health.
- Public information channels should inform people that long-term investment in large energy projects (e.g. hydel and coal) are contingent upon people paying their due tax liabilities and energy tariffs that cover full economic cost of generation, transmission and distribution.

- A comprehensive conservation policy can be devised by a properly designed outreach campaign, smarter tariffs that are progressively levied (in line with usage), and liberalization of imports of greener technologies in energy sector (e.g. solar power).
- Deeper research will be required to see a) if it is justified to have a large tariff variation between various sources of energy (power and gas) reaching the same household, and b) how energy poverty is forcing people to trade-off their budgetary requirements towards food intake, education and health.

## 6. Conclusion

This survey highlights two important connotations with respect to people's perception regarding energy crisis and tax reforms in Pakistan. First, most of the respondents do not fully understand that fiscal deficit and government borrowings increase when they don't pay taxes, which in turn create inflation and reduce purchasing power. More recently Pakistan has also witnessed downward pressure on the exchange rate owing to the growing fiscal deficit and rising government debt.

Second, there is a lack of understanding among respondents that the root cause of energy crisis is continuous reliance on subsidies, and power theft. Unfortunately, when subsidies are provided for an indefinite timeline, people start perceiving such benefits as their right. Under a well-managed energy sector, only a lifeline block consuming less than 100 units of power is allowed a subsidy. Contrary to this, we see several layers of subsidies being provided in Pakistan for energy usage in residential, agricultural and industrial sectors.

Going forward this survey provides two important entry points for the policy makers. First, we have exhibited that substantial proportion of population is willing and has ability to pay, a) increased taxes if decent utilization of their contributions is demonstrated, and b) higher power bills if given a certainty of reduction in unscheduled power cuts. Second, any painful future adjustment resulting from economic reforms will also require taking in to confidence those segments of population, who do not trust the current tax administration machinery and energy sector governance. The Ministry of Information and Press Information Department should be tasked with outreach campaigns to inform people about the government policy on taxation and energy reforms.

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