



Child Rights Impact Assessment of Potential Electricity Price Rises in Bosnia and Herzegovina

IMPRESUM

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FOREWORD

The Child Rights Impact Assessment (CRIA) methodology and survey was jointly designed by UNICEF, Save the Children UK, DFID and experts from the Directorate for Economic Planning of Bosnia and Herzegovina. The objective of this joint effort was to design an innovative methodology that would help assess the impact of the macroeconomic policies on children and their families. This methodology was to be used as a tool to help policy makers assess the impact of the planned macroeconomic policies on children.

The Child Rights Impact Assessment methodology builds on the experiences of the Poverty and Social Impact Assessments and has undertaken to focus the existing methodologies on children within the framework of the Convention on the Rights of the Child. Its particular value lays in the fact that it gives a voice to the children and their families – an opportunity so seldom given to them in the design of the macroeconomic and social policies. The methodology and research have also assessed the impact of the rises in the price of electricity for the institutions providing services for children in Bosnia and Herzegovina.

In the initial phase of the project, our focus was on assessing the impact of the imminent privatisation of the energy sector in Bosnia and Herzegovina. However, the privatisation scenarios were not fully completed at that time, and the privatisation of energy sources - much like ongoing reform of the energy sector - are generally considered to be the cause of substantive increases in the prices of electricity. Therefore, the decision was made to focus our research and testing of our methodology on the impact of the increase of prices of electricity on the families and children who will be most adversely affected. The reforms and privatisation of the energy sector are on the way and will have the

effect on prices.

While the research focused on the increases in the prices of electricity, it was deemed to be an efficient tool to assess the impact of other macroeconomic or social policies that may increase the economic burden on households with children. It is also a valuable resource in establishing the degree of vulnerability of socially excluded groups and directly linking this exclusion to poverty levels.

What we have found about the impact of increases in electricity prices on children, families and social service institutions is alarming. A father from Mostar stated that, *“There are no economizing measures that could help in such situation. In order to pay that price we would have to deprive ourselves of life, too”*. This echoes the words of children from Zenica who commented on the coping mechanisms of their parents, saying that, *“They will not pay electricity bills as they can not even pay for food”*.

Social sector institutions are increasingly unable to support children and families, with a decrease in levels of child well-being as a result. This warrants caution and a sense of social responsibility on the part of policy-makers, who will be making the final decisions on commodity prices, including electricity, and on the way that the privatisation of energy sector in B&H will be implemented.

We sincerely hope that this report, including its findings and proposed mitigation strategies, will assist those who will be making decisions that could have a very strong impact on the children in Bosnia and Herzegovina. We urge those that are accountable to look at this methodology and its indications in the future when reforming or undertaking policies which can reverse impact on social well-being of children in Bosnia and Herzegovina.

ACKNOWLEDGMENTS

The Child Rights Impact Assessment (CRIA) of the impact of the Privatisation of Energy Sources/Increase in electricity prices in Bosnia and Herzegovina was initiated and designed by UNICEF, Save the Children UK and DFID in Bosnia and Herzegovina, as well as Directorate for Economic Planning B&H, with the purpose of developing a unique methodology to assess the impact of macroeconomic policies on children.

The development and implementation of the research methodology was the result of a joint work of a number of institutions and individuals. We would like to especially thank all children and their families, child protection service providers and municipal authorities in the 12 communities where this research was conducted for their patience and willingness to participate in this social research. We would like to acknowledge the participation of four national NGOs, Zdravo da ste - Banja Luka, Nasa Djeca – Sarajevo, Svjetionik – Prijedor, Budimo aktivni – Sarajevo, for their support in the implementation of qualitative and quantitative surveys as part of this research.

We would also like to thank the members of the CRIA government Steering Board, consisting of representatives of the government institutions and ministries at the B&H entity and state level, who gave their contributions to creation of the research methodology and the report. In addition, we would like to thank the staff of the DEP B&H for their contribution to the report preparation.

We would particularly like to thank the United Kingdom Government that provided funding to UNICEF for the CRIA implementation through DFID.

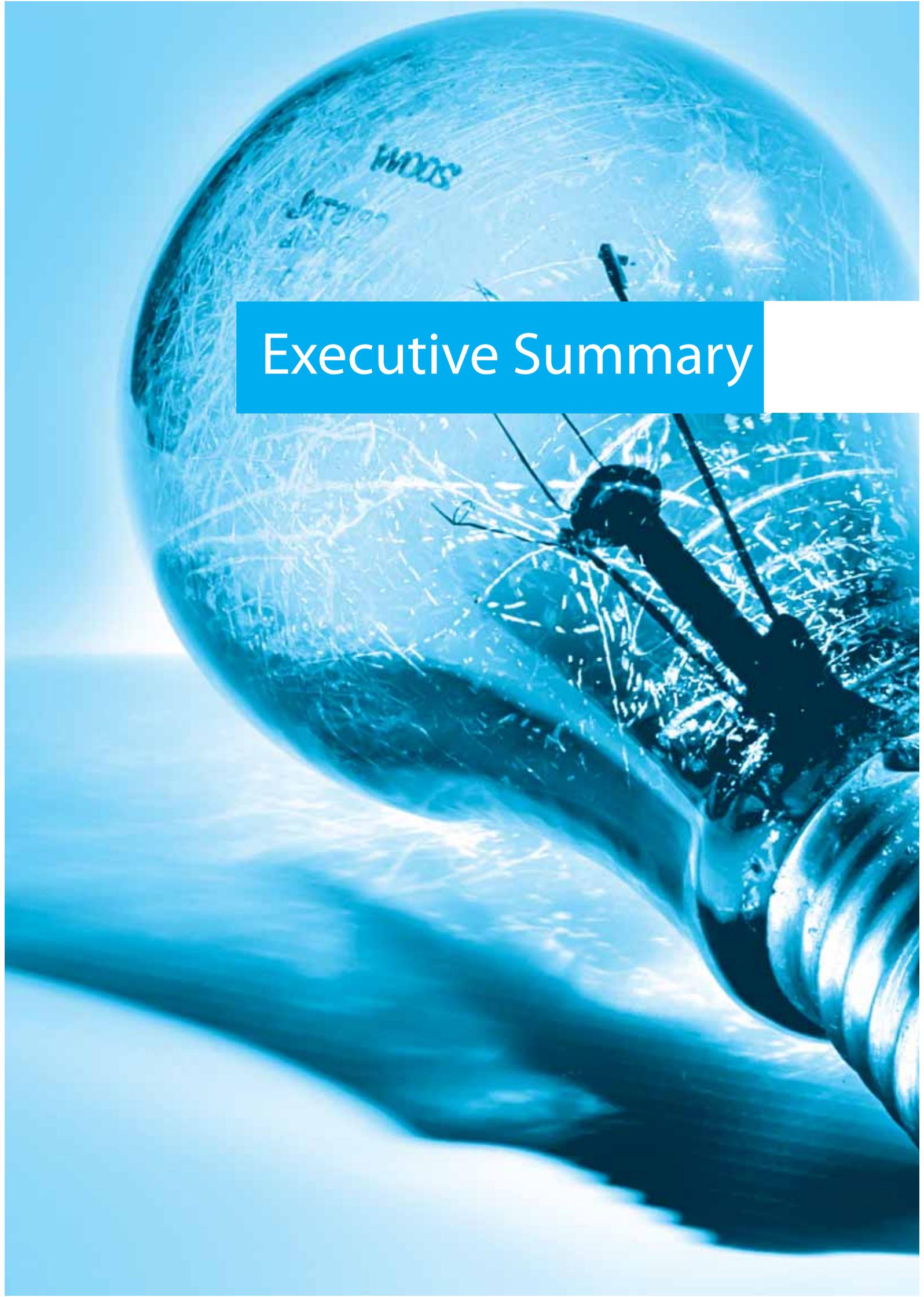
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ABBREVIATIONS

B&H	Bosnia and Herzegovina
CIS	Commonwealth of Independent States
CRIA	Child Rights Impact Assessment
EPBH	Elektroprivreda Bosne and Hercegovine
EPHZHB	Elektroprivreda Hrvatske Zajednice Herceg-Bos
EPPU	Economic Policy and Planning Unit
EPRS	Elektroprivreda Republike Srpske
EU	European Union
FB&H	Federation of Bosnia and Herzegovina
FG	Focus Group
GDP	Gross Domestic Product
ILO	International Labour Organisation
KM	Konvertibilna Marka
HBS	Household Budget Survey
MoH	Ministry of Health
MICS	Multiple Indicator Cluster Survey
LFS	Labour Force Survey
LSMS	Living Standards Measurement Survey
OECD	Organisation for Economic Cooperation and Development
NGO	Non-governmental Organisation
RS	Republic of Srpska
CSW	Centre for Social Work
PSIA	Poverty and Social Impact Assessment
PS	Primary School
SS	Secondary School
UNDP	United Nations Development Programme
VAT	Value Added Tax
WHO	World Health Organisation



Executive Summary

EXECUTIVE SUMMARY

INTRODUCTION

This report presents the outcomes of a project designed to:

- Develop the methodology for a replicable Child Rights Impact Assessment (CRIA) tool - a social impact assessment tool, which could be used by policy-makers to predict and subsequently mitigate adverse consequences of economic and social policy reforms for children and young people.
- Pilot the methodology by examining the potential implication of electricity price rises on children during the current process of reform of the industry in B&H.

The Project was initially designed to assess the potential impact of the privatisation of the electricity sector in B&H on children and households with children. Having in mind that the electricity sector privatisation scenarios have remained vague during the preparation of the project and that the reform was on the way, it was decided to shift the focus of the research to the impact on the increases of the prices of electricity on children and households with children. Price increases are predicted to be one of the consequences of reform and any privatisation scenario will adversely affect the children and households with children.

ECONOMIC CONTEXT

B&H has in recent years enjoyed a period of relative macroeconomic stability, helped by the Currency Board arrangements that fix the exchange rate of the Konvertibilna Marka (KM) to the Euro, and strong growth rates that have often exceeded those of neighbouring countries. Nevertheless, some indicators suggest that the economic position may be more precarious than the stable inflation and strong growth rates imply. Most importantly, the current account remains in deficit and though this deficit is reducing, it is exacerbated by continued strong import growth.

The introduction of a number of mitigation measures aimed at decreasing the income distribution in-

equalities in the recent years, especially after the introduction of the VAT in 2006, threaten to overturn broadly balanced government spending in recent years. Unemployment remains a serious economic challenge with some structural problems making it rather intractable. There are low enrolment and completion rates in post-compulsory education and a mismatch between the needs of industry and the results of education.

In this context, there may be serious limitations on the government's ability to provide additional mitigation measures in the face of electricity price increases. The careful targeting of any such additional measures, to ensure that they reach the most vulnerable households and children, is therefore of paramount importance.

THE ENERGY SECTOR

The electricity sector in B&H is one of the country's undoubted economic successes. B&H remains a net exporter of electricity, and coverage within B&H is virtually complete. Nevertheless, household expenditure on energy (around 10-12 percent of disposable income) is internationally high compared to other OECD countries. Furthermore, especially where electricity is a major part of a household's energy expenditure, this proportion is close to the affordability threshold estimated by a number of organisations including the World Bank and WHO. This suggests that certain households in B&H may be exposed to considerable risks in the event of tariff increases in the energy sector and children within such households may be at special risk.

Bosnia and Herzegovina signed a regional SEE energy treaty by which it is committed to liberalise the non-residential energy market by 1 January 2008. The treaty includes a set of measures intended to support the development of a regional electricity market, such as raising electricity tariffs to the cost-recovery level, enforcing payments discipline, restructuring energy companies, establishing an independent energy regulator, revising tariff methodologies, and putting in place social safety nets to offset the adverse impact of tariff increases on vulnerable households. In the next five years, these reforms are expected to lead to a sig-

nificant electricity price increase in the signatory countries¹.

The privatisation and deregulation of the B&H power sector are based on a number of international and national policy documents and international obligations as undertaken by B&H participation in the regional and sub-regional agreements, as well as EU accession commitments. B&H has already created conditions for deregulation of its power system and has created national state and entity level energy-sector regulatory bodies to ensure independent regulation of the energy system amongst its other obligations under the Athens Memorandum of Understanding². In essence, the changes in the functioning and the ownership structure of the B&H energy sector are already in process. Having in mind the potential economic impact the reform of the energy sector in B&H may have on the already fragile economic and social status of B&H households, particularly those with children, any further decision as it relates to this sector warrants special focus on protection of families with children, as well as institutions servicing the children in B&H.

VULNERABILITY TO PRICE INCREASES

From existing data sources and analysis, primarily the LSMS, MICS3 and HBS surveys and reports, the following households were considered to be at particular risk of poverty through price increases:

- households with three or more children (66 percent of all such households are poor, and they constitute 10 percent of poor people in B&H);
- refugees and internally displaced persons (37 percent of this group live in poverty, constituting another 10 percent of poor people in B&H);
- households with two children (32 percent of these households live in poverty, and they constitute 20 percent of the total number of the poor in B&H);

- households in which the head of the household is under 25 years of age;
- unemployed people;
- households in which the head of the household has completed primary education only.

Our survey, which is a derivative of MICS3, confirms these findings.

METHODOLOGY

In accordance with PSIA methodology, this study employed a mixed methodology where existing data sources and knowledge were integrated with further quantitative and qualitative research to identify vulnerable households and estimate the range of responses and coping strategies that they might use in the light of price increases in electricity. The study also proposed a set of indicators of children's welfare to be used as the reforms in the electricity industry proceed.

The following research was undertaken:

- A review of existing literature on child poverty and disadvantage in B&H
- An analysis of existing quantitative data to confirm profiles of households most likely to be adversely affected by electricity price reforms
- Qualitative research, involving focus groups with households and structured interviews with key informants in public institutions responsible for children's education, leisure or welfare
- An additional quantitative survey, drawing on findings of qualitative research. This survey was tied closely to the MICS3 survey in such a manner that the sample was derived from the MICS3 survey base and the consistency of the sample could be double checked against the results from the much larger MICS3 sample

1) Energy and Mining Sector Board Discussion Paper, Paper no. 15, March 2006, World Bank Framework for Development of a Power Market in South East Europe, by David Kennedy

2) The Athens Memorandum of Understanding, resulting from the First Ministerial Meeting on the Regional Electricity Market in South East Europe held in Athens on 15th November 2002, committed B&H to implement tariff reform plans, to implement all necessary technical standards, such as grid codes, accounting systems and information exchange for the operation of the grid, to implement effective third party access to infrastructure, the establishment of National Regulatory Authorities: which are completely independent of the interests of the electricity industry, the establishment of National Transmission System Operators (TSOs) independent of activities not relating to transmission.

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- Iterative analysis, cross-referencing findings of quantitative and qualitative research components, so that econometric modelling, development of indicators and ultimate conclusions were based on insights from both forms of research.

RESPONSES OF PUBLIC INSTITUTIONS

The qualitative research on institutions and services responsible for child welfare suggests that even modest electricity price increases might lead to cuts in the quality of service, reduced availability of these services, and/or increases in the prices they charge users, and hence reduced accessibility for poorer families. Though schools expected serious negative consequences, their expenditure at secondary level, at least, is somewhat protected through the legal basis of their financing (a proportion of funds are provided by municipality level in a number of administrative units, based on their legislation). Levels of kindergarten attendance are already very low in B&H (approximately five percent of children attend kindergarten³ and these tend to be of higher socio-economic groups), so impacts via this route will not affect a large number of disadvantaged children. Similarly, though the impacts on children's homes may be significant, a relatively small number of children in B&H live in these institutions. As the level of concern is not only determined by the number of affected but also by the level of their vulnerability, the children in institutions belong among the most vulnerable. Thus, the children's homes must be considered for special tariff mitigation measures. Of particular concern are the potential impacts on health care institutions, since their financing, availability and quality of services provided affect the whole population, and children are one of the most significant user groups. Furthermore, ill-health can both affect children's future prospects and the current economic status of adults and thus is strongly linked to poverty.

RESPONSES OF HOUSEHOLDS

The small household survey which supplemented the existing data sources was amenable to a range of statistical analyses including econometric work on the nature of coping mechanisms envisaged by households in the event of electricity price increases. It also enabled some cross-checking with the qualitative research into prospective household behaviour. In addition, the survey focussed more clearly on the impacts on children than the existing data sources.

Our analysis suggests that households with children may respond to electricity price rises differently to households without children. In particular, the preferred coping strategy of most households, namely to seek more adult employment, seems to be less popular the larger the number of children in the household. More disturbing is the fact that households that already use children for labour seem more likely to choose other coping mechanisms such as substituting with fossil fuels, strategies which are likely to adversely impact on children's health. Perhaps this is because there is little scope for extending employment within the household and alternative methods of coping will need to be sought.

Overall, the quantitative household level analysis confirms the indications from the qualitative research that the existence and the numbers of children in a household both exacerbate vulnerability to poverty and alter household behaviour in a way that may not be conducive to children's best interests. The design of mitigation policies, and the choice of need to be carefully considered in the light of these findings - the existence and number of children in a household may be important factors, along with household income, in assessing household poverty risk.

INDICATORS

This study provides a set of indicators for monitoring

3) The percentage on kindergarten attendance was derived from the CRIA quantitative survey. The percent of children attending preschool derived from MIC3 Survey is at 6.8 percent, which is an acceptable statistical difference given the difference in sizes of the survey samples.

the effects of electricity reforms on children which may be calculated now as a baseline. Existing data sources provide the means for calculating a number of indicators, and certain indicators may be formed using existing data only. The CRIA's own survey research was designed to collect sufficient data to fill gaps in existing regularly-collected data, such as MICS (which contains a large amount of information on health outcomes) and the Household Budget Survey. With this data various other indicators may be formed, some of which are more closely attuned to assessing the impacts of the changes on children's welfare.

It is envisaged that the CRIA survey will be repeated in certain period after electricity price increases (e.g. one year). By re-calculating the indicators, an analysis of changes that have occurred since the price rise would be possible. Further qualitative research would be required to establish which changes occurred because of price rises and which are coincidental. It is also important to remember that many indicators are 'proxies' – they measure intermediate factors rather than final outcomes for children. However, this may make relating them to electricity price changes easier. It is also substantially less resource-intensive than attempting to collect data on outcome indicators for everyone.

MITIGATION OF ADVERSE EFFECTS

The research reinforces the need for mitigation measures designed to alleviate the adverse impacts of tariff increases envisaged as a result of the electricity price reforms that are ascertained to take place within the process of reform and privatisation of the power sectors in B&H. The increases in the prices of electricity have already taken place in reality through introduction of the VAT in 2006 whereas additional demands are put by individual energy producers for potential further increases in the electricity prices. Two broad recommendations emerge from the study:

- reduced tariffs for public service providers. The qualitative research suggests some considerable difficulties in institutional ability to meet com-

mercial rate electricity bills. There is also some unease about the seasonal changes to tariffs which mean that costs are higher at times of year when the need is greatest. Given this, the study recommends the use of specialised discounted tariffs directed at institutional bodies that work with children.

- poverty reducing measures to cushion the impact of reforms on vulnerable households. A range of mitigation instruments have been proposed in the literature to date. Given the particular pattern of vulnerability that the study finds, we recommend lifeline tariffs to help the most vulnerable consumers. Such tariffs have the benefit of relative simplicity in that the information required to provide such tariffs is likely to be less than other income based measures (since consumers of 'essential' electricity effectively select themselves), and they impact on the problem of high electricity prices directly. Moreover, they are likely to have fewer adverse general economic impacts and the measures are easily adjusted to accommodate changing needs since they are based on tariff rate changes. The measures can also be partly funded by increasing the marginal costs to bulk users. The next best alternatives are likely to be earmarked cash transfers or general income support.

In addition, it may be useful to consider support for energy conservation measures. These might include grants to help people insulate better, or use more energy efficient appliances.

RECOMMENDATIONS FOR REPLICATION OF CRIA IN OTHER SECTORS/CONTEXTS

The mix of methodological approaches taken in this CRIA proved effective in illuminating the potential impacts of electricity price rises of different orders of magnitude. In the quantitative component, the use of an existing sample base (MICS3) from which to draw a smaller sample proved to be both cost effective and statistically robust given that the results from the survey could be checked against the larger study. Where possible, this is an approach we would recommend.

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In the qualitative component, the approach of asking children about sensitive issues through discussions of scenarios, rather than direct questioning worked well, and could usefully be replicated in other CRIAs. Direct questioning of adults around poverty and electricity reform issues was not problematic and could be repeated in other analyses.

Desirable additional analysis would include triangulation of public sector institutions responses concerning the potential impact of reforms with their own or the electricity companies' expenditure records. Willingness to pay surveys, and more general modelling

of economic effects would also be illuminating, if the necessary data are available.

Replication of CRIAs in other sectors or context may have less existing technical capacity to draw on. They may also have less time, if CRIAs are undertaken in the context of policy reforms with rapid implementation. We suggest the following measures to help address this:

1. Use readily available data (e.g. MICS, HBS, LSMS, DHS, etc.) for as much analysis as possible
2. A qualitative component covering few locations in more depth may be as insightful as an attempt to cover the whole country.



Introduction

INTRODUCTION

This report presents the outcomes of a two-year project with two main purposes:

- **To develop the methodology for a replicable Child Rights Impact Assessment (CRIA) tool** – a social impact assessment tool, which could be used by policy-makers to predict and subsequently mitigate adverse consequences of economic and social policy reforms for children and young people. This important social group is usually neglected or addressed in passing in other social impact assessment processes. Section 1.1 discusses the rationale for and requirements of a Child Rights Impact Assessment.
- **To examine the potential implication for children of electricity price increases.** This was chosen since major price increases are likely as the sector is reformed or potentially privatised, in line with the Medium Term Development Strategy and the World Bank Power IV project. Section 1.2 gives more details.

RATIONALE FOR AND REQUIREMENTS OF A CHILD RIGHTS IMPACT ASSESSMENT

Existing tools for addressing the social impact of economic reforms, rarely consider the impacts on children in any detail. This is despite recommendations by the UN Committee on the Rights of the Child that state parties undertake child impact studies, so that decision makers can formulate policy, taking into account their potential effects on children's rights. The most commonly used tools for assessing the social consequences of economic reforms rarely pay attention to the impacts on children. Often they simply consider the impacts on people in the bottom two quintiles, and sometimes disaggregate potential impacts by gender. Age – whether youth or old age - is still rarely a factor considered.

For example, the WIDER studies on the impacts of utility privatisation in Latin America look only at the distributional consequences of economic reforms by socio-economic group. They do not look within this to

the potential differential impacts by gender or age (e.g. Torero and Pasco-Font, 2001 – Peru; Benitez et al, 2001 – Argentina). Though Poverty and Social Impact Analyses (PSIA)⁴, have in recent years, become more inclusive of a wider range of social differences, the impacts of reforms on children still command little attention. The Honduras PSIA study does not have an explicit focus on children but considers impacts on children that may lead to reduced human capital formation (Gonzalez and Cuesta (2003)). A few studies address, directly or indirectly, potential impacts of water privatisation on children, e.g. Gutierrez et al (2003); Beddies et al (2004)). These suggest potential impacts on children's health, nutrition, education and work.

A Child Rights Impact Assessment (CRIA) aims to develop the set of tools available for Poverty and Social Impact Analyses, and a CRIA is best understood as a PSIA which emphasises a nation's commitments under the United Nations' Convention on the Rights of the Child (UNCRC). More precisely, the analytical focus is on understanding the impacts of policy interventions on children's well-being, in particular their survival, development and protection. In this context, these broad categories of rights were put into use by examining the impact of reforms on children's opportunities for health, education, social development and protection (see the discussion of the project's conceptual framework in section 2.1 for further details). On the methodological side, a CRIA approach stresses children's participation in policy formulation and implementation by directly collecting their perceptions and suggestions rather than relying only on other stakeholders' views, such as those of parents, carers or professionals providing services to children.

The following key principles underpin a CRIA:

- 1) A human rights-based approach, which implies participation, inclusion, non-discrimination, and accountability;
- 2) Feasibility and simplicity to enable the method to be used as a regular tool in diverse contexts.

4) <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPSIA/0,,menuPK:490139~pagePK:149018~piPK:149093~theSitePK:490130,00.html>

A third key approach taken by the CRIA team was that the process must be documented so as to enable lesson-learning and modification and replication of the tool. This report is intended to draw together lessons learnt from the CRIA process in relation to electricity sector reforms in B&H, and thus to be useful for others planning CRIAs in B&H or elsewhere.

THE B&H CONTEXT

The Economy and Fiscal Context

The economy of B&H has enjoyed relative stability in the post-war period with real GDP growth rates that have often been higher than in other countries of the region. In 2006, the real rate of GDP growth was 5.7 percent⁵, which exceeded the growth rates of Serbia, Montenegro, Albania and Croatia. A good degree of macroeconomic stability, particularly with regard to price inflation, has been achieved by the Currency Board arrangements which fix the exchange rate of the Konvertibilna Marka (KM) to the Euro. Nevertheless, partly due to the introduction of VAT at 17 percent in January 2006, inflation rose to around six percent in 2006 even though it is predicted to fall again in 2007⁶.

The current account remains in deficit due to strong import growth which continues to outstrip export growth. However, this deficit appears to be falling as a percentage of GDP from 21.26 percent in 2005 to 11.37 percent in 2006 (and predicted to be around 8.18 percent for 2007)⁷. There is some risk that poor food harvests in early 2007 may lead to a worsening of the situation due to the high reliance of the Bosnian economy on imported food crops from Serbia, Croatia and Hungary. The raised price of such imports may also have an impact on inflation.

The fiscal environment in B&H is relatively favourable in that there has been a broad government budget balance in recent years. However, this may move into deficit due to the costs of various social transfers, including increased veteran's benefits and mitigation measures introduced to offset the impact of the introduction of VAT in 2006 and higher energy import prices. According to World Bank figures⁸, government spending is just over 40 percent of the GDP (adjusted for the non-formalised sector of the economy) which is some five percentage points above other countries of comparable GDP per capita levels.

Despite the relatively strong growth and stable budget positions of recent years, unemployment remains high. The Labour Force Survey of 2006 found the unemployment rate to be 31.1 percent, calculated according to ILO standards. Unemployment levels have been remarkably intransigent over the past few years. This is partly the result of poor labour mobility (there remain significant differences in unemployment rates across entities and regions) but there is also a structural problem with education - the World Bank estimates that 40 percent of students do not attain basic skills and knowledge. In addition, secondary and higher educational enrolment remains low, particularly in poorer households⁹ and this limits the scope of children in such households to escape poverty¹⁰. According to the LSMS (2001), the private costs of schooling (transportation, books, food/lodging etc) rise significantly after the compulsory primary period. This presents a major barrier to enrolment after the compulsory period and subsequently to improved employment status¹¹.

Given this context, the electricity privatisation/reform of the electricity sector, and any related price rises, may have a number of wider economic consequences that this report does not analyse. For example, the re-

5) BH Economic Trends Annual Report 2006. Available on www.eppu.ba.

6) See South East Europe Monitor October 2007.

7) See South East Europe Monitor October 2007. World Bank figures differ somewhat but the trends are similar, see PEIR Report p6. The increase in the current account deficit in 2006 is partly a result of higher import prices for petroleum and natural gas and partly because of imports in anticipation of VAT.

8) See World Bank PEIR Report p18.

9) LSMS 2001, specifies the secondary school enrolment rates by non-poor at 76.4 percent and 57.2 for poor households, whereas the higher education enrolment for non-poor households is at 27.3 percent for non-poor and 9.3 for poor households.

10) See World Bank, 2003, B&H Poverty Assessment and LSMS 2001.

11) See Economic Trends Annual Report, 2006, EPPU, p.23 on the strong relationship between educational attainment and employment status.

INTRODUCTION

structuring of the industry may lead to direct layoffs which would lead to increased unemployment¹² but the indirect effects through education may be more substantial if the pressures on household budgets make educational enrolments less likely.

Moreover, further mitigation measures to offset possible price increases in domestic electricity may be difficult to fund without significant impacts on fiscal deficits. Existing mitigation measures introduced to address the impact of VAT in the first year after its introduction, as well as the multiplying demands of specific population groups for social protection measures are already complex and substantial and do not sufficiently target families with children as a specific vulnerable population group.

The Energy Sector and Proposed Electricity Sector Reforms in Bosnia and Herzegovina

The energy sector within B&H remains a crucial component of the economic success of B&H even though production levels are still substantially below those of pre-war decades, sometimes as low as 40 percent of pre-war levels. This is largely to do with the lack of industrial demand. Nevertheless, it is estimated that the energy sector contributes one percent of (nominal) GDP growth. Furthermore, the growth of the energy sector itself in 2006 was 7.3 percent, much of this due to exceptional performance by hydro-power plants¹³. Together with a 5.35 percent drop in employment within the sectors of electricity, gas and water, this signifies a recent increase in productivity in these sectors.

B&H remains a net electricity exporter (exports were 2,126.2 GWh in 2006) even though some electricity is imported (mainly due to contractual obligations to deliver electricity to Croatia). Certainly, there remains significant expansion potential in the industry, especially in the area of hydro-power plants. As noted above,

there are significant domestic resources of coal and hydro power. However, other sources of energy such as liquid fuels and gas need to be imported.

At present, the industry is structured as three state-owned companies that control generation and distribution - Elektroprivreda Bosne i Hercegovine (EPBH), Elektroprivreda Hrvatske Zajednice Herceg-Bosne (EPHZHB) in the FB&H, and Elektroprivreda Republike Srpske (EPRS) in the RS. Until recently, these three companies were completely vertically integrated and also responsible for transmission but this role has now passed to the Company for Transmission of Electricity in B&H (TRANSCO, Elektroprenos Bosne i Hercegovine), which began operating in February 2006 (despite the law establishing the company having been adopted in 2004).¹⁴ The unbundling of the remaining functions of generation and distribution have yet to be completed and are required to comply with the EU Electricity Directive (2003/54/EC) and for accession to the European Community.

The decision to privatise the industry was taken in 2001 by the B&H Council of Ministers.¹⁵ There was some early progress towards this goal by voucher offerings which privatised minority holdings in the three electricity companies. Though the decision to privatise has been strongly supported by various parts of the international community in B&H (Basic, 2004), and is an action to be taken under the Medium Term Development Strategy (2004- 2007), the process has been very slow. This is partly due to the existence of different regulatory frameworks in the RS and B&H.¹⁶ Given the slow pace of progress in this area, it is still somewhat unclear when and how electricity sector privatisation will eventually take place.

The assessment of the Social Status of the Electric Energy Consumers was commissioned by the World Bank in 2004 for the needs of the three main electric

12) Employment in the supply of electricity, gas and water decreased by 5.35 percent between 2005 and 2006 according to EPPU's Economic Trends Annual Report, 2006. Some 23,391 workers are employed in this sector.

13) Around 62 percent of B&H's energy consumption is accounted for by coal and hydro production. See Jenko (2007:4).

14) The Independent System Operator (ISO) also began operations in February 2006. ISO is responsible for managing transmission, including developing the electrical grid.

15) B&H Council of Ministers, Decisions, 2002, "Decision on majority privatization of the energy sector in B&H", Sarajevo, B&H. However, this was not approved by the B&H Federation Parliament, meaning that the decision to privatise may be invalid (Basic, 2004:23).

16) There are separate Laws on Electricity that apply in the FB&H and the RS. See Jenko (2007: section 4) for the current legal framework. In addition, there is an obligation to harmonise the legal framework with international treaties which established the Energy Community of South-East Europe.

power producers and distributors in B&H and has assessed the status of the population and proposed mitigation strategies for vulnerable populations. It is unclear at this point whether any of these measures were implemented. The process of reassessment of the measures and the review of the energy sectors in B&H commissioned by the WB is currently being undertaken and will provide additional valuable information on the social status of the population and the implementation of the measures as proposed in the 2004 study.

What is clear, however, is that whether or not the industry is privatised, considerable electricity price increases are almost certain in the near future. Currently, the tariffs are proposed by the companies' management and approved by entities' parliament, and are generally meant to cover the fixed cost of electricity provision. Current fiscal arrangements mean that tariffs are held considerably below the true cost of supply - in 2001, the tariffs were some 25 percent below the true cost of service in the FB&H and 39 percent below the true cost of service in the RS, (PA Consulting Group, Dec 2001 cited in Basic, 2004). There have been recent administrative tariff rises across the energy sector which will probably have closed this gap somewhat - in May 2006 for example, electricity prices were raised by around six percent in the FB&H. In spite of these recent administrative price rises, there will need to be considerable further increases to meet the cost of supply.

Vulnerability of Consumers to Electricity Price Increases and Context of Child Poverty/Vulnerability

According to UNDP (2003:21), households in B&H spend on average about 10-12 percent of their income on energy, which is internationally high for OECD countries, where the comparable figure is around two to three percent. Fankhauser and Tepic (2007:1041) suggest that the proportion spent on electricity is 5.4 percent, which is still relatively high in their comparison to transition states. In their study, only Bulgaria and

Armenia have higher proportionate expenditures on electricity than B&H. In addition, they find that the lowest income group spends on average 8.4 percent of their income on electricity. This is also high compared to lower middle-income countries such as Honduras, where electricity sector reforms were the focus of a DFID-supported PSIA in 2004.¹⁷ Fankhauser and Tepic report that according to the World Bank, WHO and IPA Energy, affordability of electricity becomes problematic when over 10 percent of household income is spent on electricity. Though their own estimates suggest that B&H is well within this affordability benchmark, the UNDP's figures suggest that the average household may well be reaching the threshold of affordability expenditures, especially where electricity is the main source of energy in the home. In addition, low income consumers may be particularly at risk of reaching unaffordable levels of electricity expenditures.

Fankhauser and Tepic's study suggests that low-income consumers in the western Balkan region, which includes B&H, face electricity bills that are on average double those faced by similar households in Central and Eastern Europe and the Baltic States, and the CIS (Fankhauser and Tepic, 2005). A recent report suggests that raising tariff structures towards cost levels in B&H would result in average increases in household electricity bills of about 145KM annually (PA Consulting Group, 2001, cited in Basic, 2004). These facts, and the extent to which tariffs are currently below cost prices, suggest an internationally high vulnerability of the B&H population to tariff increases in the energy sector. Any increases in electricity tariffs will come in the wake of the introduction of VAT in January 2006, which has already increased the costs faced by the population as a whole and the vulnerability of poorer households.

The Household Budget Survey (HBS) 2004 estimated monthly expenditures on electricity of 41.1KM. Our own survey found this to be around 45KM monthly. According to the PA Consulting Group (cited in Basic, 2004) the increase required to raise prices to cost levels is approximately 12KM monthly (based on their estimate of 145KM annually). An increase of 12KM monthly would therefore involve an increase in electricity expenditures of around 26-30 percent. The 2004 LSMS study found

¹⁷ See Gonzalez and Cuesta (2003).

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that mean household income from all sources was 545.14KM. Our own smaller survey undertaken in 2007 found that household's self-estimates of income were in the (mean) region of 660KM or more, which may be an overestimate. Nonetheless, an increase of 145KM annually in electricity expenditures (not allowing for price increases since 2001) would mean that electricity expenditures in the total household budget would on average rise by around two percent above current levels.

Wave 4 of the study *Living in B&H* (FOS, BHAS and RSIS, 2005) indicates that 35.7 percent of B&H households live in poverty¹⁸ (41.9 percent in RS and 27.6 percent in FB&H), with a trend towards a slight decline in the poverty rate in RS and a slight increase in FB&H.

Poverty rates vary considerably with the simultaneous incidence of dependent children and the lack of employment income. In particular, whilst just 4.8 percent of households with dependent children and some employment income were under the poverty threshold, over two-thirds (70 percent) of households with dependent children and no employment income were in poverty. This proportion is worse in the RS (83.6 percent of households with children and no employment income) than the FB&H (58.1 percent). If we focus on all children aged under 15 in each entity, 29.8 percent of children in the RS and 17.6 percent of children in the FB&H were living in poverty at wave 4. These levels of poverty for children were unchanged compared to wave 3 of *Living in B&H*.¹⁹

In this report, the following groups were identified as particularly vulnerable to poverty:

- households with three or more children (66 percent of all such households are poor, and they constitute 10 percent of poor people in B&H);
- refugees and internally displaced persons (37 percent of this group live in poverty, constituting another 10 percent of poor people in B&H);
- households with two children (32 percent of these

households live in poverty, and they constitute 20 percent of the total number of the poor in B&H);

- households in which the head of the household is under 25 years of age;
- unemployed people;
- households in which the head of the household has completed primary education only.

In addition, living in sub-urban or mixed municipalities²⁰ is associated with chronic poverty²¹.

From this profile, the vulnerability of households with children is clear. When the focus is on rates of poverty among children, this becomes even more starkly apparent: 69 percent of poor households are households with children (World Bank Poverty Assessment). The Poverty Assessment also suggests that the main reason for children's poverty risk is not the size of family (i.e. more dependents) but the inadequacy of employment income of the adult members of the household. Though most poor households contain at least one wage-earner, the income is often very low and the employment from which it arises is often insecure. Thus, in B&H, children's vulnerability to poverty may be increased as a result of any reforms that reduce household income.

Significant other issues associated with poverty and identified in other research (e.g. UNDP (2002)) include:

- The increase of poverty rate in formerly rich industrial towns in the FB&H (Zenica, Tuzla, parts of Mostar) with three times fewer employed persons as compared to the pre-war period;
- A higher rural poverty rate in the RS than in the FB&H, which is explained by the higher representation of rural population in relation to the overall population in the RS and by a greater prevalence, in the past, in parts of rural FB&H of migration overseas for work.
- Other groups in B&H that are particularly vulner-

18) with a poverty line defined as 2/3 of median income

19) A preliminary report on poverty in B&H for 2001-2004 using a consumption based definition of poverty indicates that 17.8 percent of population (681,000 people) in B&H are poor or about 21 percent in the RS and 15 percent in the FB&H. For more information visit www.dep.ba

20) Mixed municipalities are those which, according to the 1991 census, contain 35-65 percent urban households. Those with more than 65 percent urban households are defined as urban municipalities and those with fewer than 35 percent urban households are defined as rural municipalities (Maglajlic, 2006).

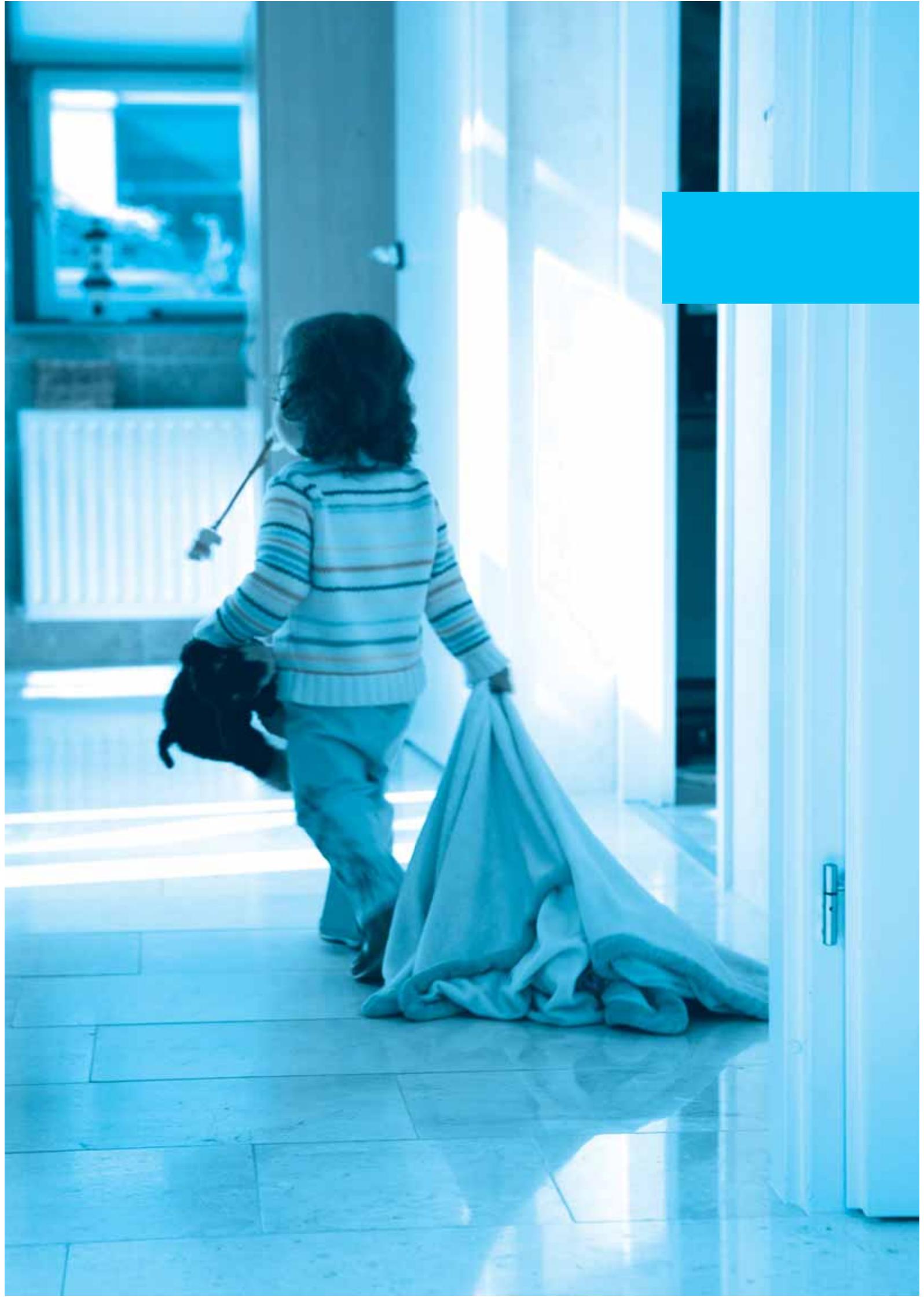
21) Preliminary Report on Poverty in B&H, 2001-2004.

able to poverty include refugees and displaced persons, children without parental care and traditional beneficiaries of social welfare services (for example, persons with physical or mental disabilities, persons with mental health difficulties and elderly people without family care and protection)

- A correlation between unsanitary housing conditions, lack of adequate housing facilities, poverty and health related problems.
- High rates of income poverty, low levels of education and poor living conditions among Roma peo-

ple (ERRC, 2004; SC UK, 2004, NGO Budimo Aktivni and UNICEF, 2005 cited in Maglajlic, 2006).

This poverty profile indicates both the vulnerability of children in general and the wide range of factors that combine to render substantial groups of the population at risk of poverty. The CRIA study in B&H draws on this poverty profile, both for the development of sampling frames and in the analysis of findings and recommendations for mitigating the impacts of electricity reforms on vulnerable families.



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CRIA CONCEPTUAL FRAMEWORK

CRIA's conceptual framework draws on a broad body of literature aiming to trace the social impacts of economic reforms, particularly energy sector reforms, and a much smaller and more specific body of literature that examines the impacts of economic reforms on children.

Clearly, there is a significant overlap between the welfare of vulnerable groups and families and the welfare of children that belong to these groups. It is not easy to disaggregate these effects at the quantitative level, particularly in reforms such as electricity price rises, because of the prevalence of *public good effects*, whereby the effects on children and adults occur together.

Drawing on previous work examining the likely channels by which economic and sector reforms may affect children (e.g. Waddington, 2004), the CRIA project identified the following areas in which electricity price reforms may affect children:

- 1) **Through household responses to higher prices.** These may include direct effects related to efforts to reduce electricity expenditure (e.g. reduced use of lighting or TVs), the use of alternative fuels, and reductions in other expenditures in order to meet increased electricity prices. Other responses may include seeking additional work.
- 2) **Through service providers' responses to higher prices.** All key children's services, including education, health care, residential care for children, and sport and leisure activities all use electricity to enable service provision. The quality, cost, and availability of all these services may be affected by electricity price increases. Municipal services such as street lighting are highly dependent on electricity; price increases may result in reduced safety through less street lighting.
- 3) **Through general effects on the economy.** Channels of impact might include: effects on parental employment (if employers face dramatically increased electricity costs), inflationary pressures, effects on state revenues and on demands for social assistance.

- 4) **Through impacts on the children of electricity sector employees** (some 10,000 according to Basic, 2004; as of 2006, there were 23391 employees in the production and supply of electricity, gas and water, see EPPU, BH Economic Trends 2006), for example, if reorganisation of the sector is accompanied by lay-offs.

The CRIA analysis focuses on the first two of these areas, due to the lack of appropriate data to model general effects on the economy, and because the nature of potential impacts on electricity sector employees was unclear.

The box 1 summarises the conceptual framework for analysing the impact of reforms on children:

In all contexts, these may be affected by geographical location (part of the country, rural/ urban/suburban).

Shock/stress: Electricity price increases

Channels by which impacts are translated to children:

- Household livelihoods
- Key services used by children

Factors potentially moderating the impact of electricity price increases:

A. FOR IMPACTS RELATED TO THE HOUSEHOLD

Household economy

- household assets
- household income
- adequacy and diversity of household income sources
- livelihood activities including employment of household members
- receipt of social assistance/pensions
- availability of alternative fuel and lighting sources

Household structure

- composition of household (numbers of children and adults)

Household 'social capital'

- extent of help/support from other family members
- extent of help/support from non-family members e.g. friends, neighbours
- process of social inequality

Type of dwelling

- house, flat etc. (since flats have less control over heating expenditure)

Socio-cultural norms

- gender divisions of labour
- norms concerning time use and leisure activities of children of different ages and genders
- norms concerning boys and girls' material possessions and appearance at different ages
- attitudes and aspirations
- children's own aspirations
- parents' aspirations for their sons and daughters

B. IMPACTS THROUGH PUBLIC SERVICES

- budget holders' room for manoeuvre in relation to electricity bills and other costs
- institutional cost saving policies, e.g. when to turn lights on
- other cost saving measures (identified through qualitative and quantitative research)

Box 1: Impacts of Electricity Price Increases on Children

The study and CRIA approach is unique in its dual focus on the effects on households and the effects on service providing institutions. Most PSIA studies concentrate strongly on household level effects.

METHODOLOGICAL APPROACH

The PSIA approach (on which the CRIA is based) was piloted by DFID and the World Bank in 2001 and 2002 during which a number of PSIAs were undertaken. The most relevant studies for the case of the Bosnian electricity reforms are Gonzalez and Cuesta (2003) on the electricity privatisation in Honduras and Junge *et al.* (2004) on the electricity privatisation in Moldova.

In accordance with PSIA methodology, both of these studies employed a mixed methodology where existing data sources and knowledge were integrated with further quantitative and qualitative research. In the case of the study on Honduras, a small (60 household) survey was undertaken together with focus group analysis involving 84 households. In addition, a number of interviews were held with key informants. The more complex quantitative analysis undertaken (which involved econometric estimation and subsequent simulations based on estimated parameters) found some surprising and counterintuitive results. The reasons for this were largely to do with the lack of sufficient data and the authors' express caution in applying such techniques to such contexts.

For the current CRIA, we are interested in some aspects of intra-household distribution and expenditures, specifically on impacts on children within the household. The data requirements are therefore more exacting than in the case of a standard PSIA (where the unit of analysis is often the household), and we have been unable to undertake complex quantitative analysis (although we have undertaken a number of econometric studies to establish patterns of coping with electricity price rises). We have had to rely on extending the existing data sources with our own qualitative and quantitative research which aims to specifically address children within households.

Furthermore, Honduras is a country in which electricity coverage is a major issue (hence the particular quantitative techniques chosen, namely Heckman estimation). In B&H, as found in the CRIA survey, coverage is virtually complete. Methodological lessons from the Honduras study are therefore of less relevance to B&H.

The Moldova PSIA was an ex-post privatisation study and the researchers were able to make use of some existing price data to examine demand responses. In this respect, it differs considerably from the current study where the data on electricity tariffs does not have sufficient variability to identify demand relationships. We have therefore focussed more on coping mechanisms since these are most amenable to study using the existing data.

One additional area of research that this CRIA undertook was to specify indicators of children's welfare that may be used as the electricity reforms proceed. Some of these indicators arise from existing work within B&H, mainly the MICS3 survey analyses; others are newly proposed. See section 6.

As noted, the CRIA project aimed to integrate insights from both qualitative and quantitative research, and to sequence these so that findings from both kinds of research informed each other. The following sequence of research was planned:

- Review of existing literature on child poverty and disadvantage in B&H
- Analysis of existing quantitative data (e.g. Household Budget Survey, Living in B&H Wave 4)²² to confirm profiles of households most likely to be adversely affected by electricity price reforms
- Qualitative research, the sampling reflecting findings from analysis of quantitative data
- Additional survey, drawing on findings of qualitative research. This survey was tied closely to the MICS survey such that the sample was derived from the MICS survey base and the consistency of the sample could be double checked against the results from the much larger MICS sample.
- Iterative analysis, cross-referencing findings of quantitative and qualitative research components, so that econometric modelling, development of indicators and ultimate conclusions were based on insights from both forms of research.

In practice, time constraints meant that the analysis of existing quantitative data and the development of the qualitative research took place in parallel, with the sampling for the latter informed by the literature review.

The qualitative component of the research focused on particularly disadvantaged groups – poorer households and various disadvantaged social groups (see below) – while the quantitative component aimed to provide a broader picture to contextualise these responses.

QUALITATIVE COMPONENT ²³

The qualitative component aimed to provide insights into current patterns of electricity use and the potential impacts of price rises. It involved:

- Focus groups with children and young people, and parents/carers
- Interviews with key stakeholders, i.e. with budget decision makers in structures and institutions potentially affected by electricity price increases

Focus of Research

The research tools and their focus are summarised in this section.

Research conducted with children and young people focused on the following issues:

- Children's use of their time (including resting, learning and working)
- Children's perception of how families reduce expenditure when there is not enough money
- Children's perception of the manner in which families cope with limited financial resources, and of coping strategies (including illegal connections to electric power supply network)
- Effects of reduced electric power supply on children (if their families or important services used by children reduce utilisation of power)
- Ways of addressing these problems

22) This data is based on a Living Standards Measurement Survey (LSMS).

23) Much of this section is drawn from Maglajlic, R. (2006).

To avoid children having to discuss potentially distressing personal circumstances, the research involved projective techniques, whereby the children discussed how hypothetical families might react in the event of electricity price rises. It also involved participatory activities (making timelines) which aimed to stimulate children's interest in the topic.

Research conducted with parents/caretakers focussed on the following issues:

- Seasonal variations in electricity use
- Perceptions of electricity use among different household members
- Strategies used by the family to reduce utilisation of electric power, including the use of alternative fuel sources
- Probable changes in household expenditures in the event of increased electricity prices (comparing reactions to a 15 and 50 percent price increase)
- Perceptions of how changes might affect children
- Potential mechanisms for alleviating the impact on poor families

Research with budget-holders and decision-makers for municipal and children's services, and with representatives of institutions working with children

involved interviews with stakeholders (school principals, health institutions' directors, directors of children's homes, community centres, etc.), who would make decisions on electric power utilisation in the event of price increases and with representatives of institutions that might be affected by eventual increases in prices. The interviews examined:

- Current patterns of electricity use
- Possible decisions concerning electricity use in the event of increased prices
- Potential areas of expense reduction aimed at covering increased electricity bills
- Ways of mitigating the effects of electricity reforms

The draft instruments were piloted through four focus groups (two with adults and two with children) and four interviews in two municipalities that were also in-

cluded in the study later on. These pilots confirmed the viability of the research tools and confirmed that focus groups with both children and adults would be best conducted in single-gender groups.

Sample

The qualitative component of the research was carried out in 12 municipalities, selected in order to reflect the following criteria:

1. Representation of rural, suburban and urban areas – to reflect a concentration of poverty in rural (especially remote rural areas) and suburban areas of B&H, and the specific energy use patterns of urban areas, such as the post-industrial towns of Zenica and Tuzla.
2. Inclusion of marginalized groups, in particular Roma and internally displaced persons, as all previous studies on poverty in B&H emphasize that these groups are vulnerable to poverty and not sufficiently represented in the studies so far carried out.
3. Geographical criteria reflecting different climatic zones, the organisation of the electricity power supply and political arrangements. It was intended that four sites each should be selected in northern, central and southern part of B&H, with half of these in the RS and the other half in the FB&H.

Site Selection

In practice, the research was carried out in 12 municipalities in B&H that were selected in cooperation with four of UNICEF's partner NGOs, Zdravo da ste, Nasa Djeca, Budimo aktivni and Svjetionik, and aimed to meet these criteria as closely as possible:

1. Rural municipalities – Teslic, Sanski Most, Bosanski Novi, Lukavac (Puracici), Kakanj (Brnjic), Zavidovici (Vozuca);
2. Suburban areas – Gradiska, Prijedor;
3. Urban municipalities (including post-industrial towns) – Banja Luka, Tuzla, Mostar, Zenica.

Attention was also paid to inclusion of the following disadvantaged groups into the research process:

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- refugees (Gradiska, Sanski Most, Vozuca-Zavidovići, Tuzla-refugee settlement)
- returnees (Gradiska, Teslic, Prijedor, Sanski Most)
- inhabitants of underdeveloped and marginalized local communities in rural areas (Bosanki Novi, Kakanj, Lukavac)
- children without parental care (Sanski Most, Lukavac)
- parents of children with special needs (Banja Luka, Mostar)
- Roma families (only in Banja Luka)
- war military invalids (Mostar)
- families from poor post-industrial towns (Zenica).

In practice, Roma families were under-represented, with the exception of Banja Luka, and community members did not respond to the invitation to participate in focus group activities, despite partner NGOs' good cooperation with Roma communities. Southern B&H (where summers are warmer and there is greater use of air conditioners) was also under-represented (research only took place in Mostar). On the other hand, and unlike in many earlier studies, families from (underdeveloped) rural areas were fairly well represented in the sample. Table 1. summarises the research that took place in each location.

Interviews

Research conducted with children and young people aged 12 and over involved 12 focus groups (six with girls and six with boys). Previous experience of research on economic issues with children in B&H suggested that the issues concerned were easier for teenagers to grasp. Participants were asked to reflect on the issue affecting younger children as well.

Research with parents/carers involved 12 focus groups with 6 to 10 participants (five with fathers and seven with mothers).

Six interviews were conducted in each of the 12 municipalities (72 interviews in total) with key stakeholders (budget-holders and service providers). These included representatives of educational institutions (kindergar-

tens, primary and secondary schools), primary health clinics, residential institutions for children without parental care, centres for social work, and organisations providing leisure activities for children and young people (e.g. youth centres). Municipality budget holders were also interviewed, as were local politicians and community leaders (see table 1 for further details).

QUANTITATIVE COMPONENT

The quantitative component aimed to provide insights into current patterns of electricity use and the potential impacts of price increases. In addition, it was undertaken to test the robustness of the qualitative analysis. It involved:

- A small primary survey undertaken with a group of households sub-selected from the MICS (2007) sample base. The survey sought to elicit household responses to a moderate and a high electricity price rise scenario.
- Use of existing LSMS, MICS and HBS surveys to identify vulnerable household types.
- Cross-checking of results with the existing survey analyses to ensure the robustness of the results.

The intention behind the methodology was to extend the existing survey frameworks inherited from MICS, LSMS and HBS in a direction that explicitly focusses on impacts on children. The existing surveys (MICS, LSMS, HBS) are focussed on the household as a unit of analysis. While the primary CRIA survey was also household based, the questions in its individual modules were directed explicitly on the effects on children, such as how children use their time, educational and recreational activities, as well as nutritional and health issues.

By using a sub-sample from an existing sample frame (MICS3), it was possible to cross-check the household level results with the larger sample base thus ensuring the consistency and quality of the sampling. By employing the results of the qualitative analysis to inform the questionnaires, it was possible to check the robustness of the qualitative analysis with a larger sample. In addition, the quantitative analysis allowed a further geographical reach than the qualitative analysis which did not adequately cover certain areas of southern B&H (see below).

TABLE 1: SUMMARY OF QUALITATIVE APPROACHES UNDERTAKEN IN EACH LOCATION

Place	FG – children, number of participants		FG- adults, number of participants		Primary schools	Secondary Schools	kinder gartens	Centres for Social Work	Residential institutions	Prim. health care	Municipality	Local politicians	Community representatives	Leisure activities
	Muški	Ženski	Muški	Ženski										
Banja Luka		4		4	✓	✓		✓	✓		✓			✓
Bosanski Novi		6		6	✓	✓		✓	✓	✓	✓			
Gradiška	7		6		✓	✓	✓	✓		✓	✓			
Kakanj	8		6		✓	✓		✓		✓	✓		✓	
Lukavac		5		5	✓	✓	✓	✓	✓	✓				
Mostar	5		6		✓	✓		✓	✓		✓			✓
Prijedor		8		6	✓	✓	✓			✓	✓			✓
Sanski Most	8		4		✓	✓		✓	✓	✓	✓			
Teslić		7		7	✓	✓				✓	✓	✓	✓	
Tuzla	15			7	✓	✓		✓	✓		✓			✓
Zavidovići		10		8	✓	✓				✓	✓	✓		✓
Zenica	9		7		✓	✓	✓		✓	✓	✓			
Total	6 FG 52 participants	6 FG 40 participants	5 FG 29 participants	7 FG 45 participants	12	12	4	8	7	9	12	2	2	5

Sample

The survey sample is made up of over 684 households with children under 18. These are drawn from the MICS 3 conducted by UNICEF in co-operation with the B&H Economic Policy Planning Unit and Ministries of Health at the entity level in B&H.

Out of the 684 total households, 562 households responded, 56 were not found and 51 refused interview. A further nine households were found that were not previously in MICS 3 but living in dwellings previ-

ously occupied by MICS 3 households. Of these, three households accepted interviews, two refused and four questionnaires were partially completed. Finally, 427 households contained children under 18.

COMMENTS ON METHODOLOGY

Quantitative Component

The CRIA considered combining the primary research components so as to enable a larger survey to take place. This would have included both closed- and

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open-ended questions. Ultimately, due to the budgetary constraints, a smaller survey was used together with a separate qualitative component.

The use of the MICS3 sample base worked particularly well as it enabled a reliable sample to be constructed relatively quickly and at low cost. In addition, MICS 3 already concentrates on areas which are highly relevant to the concerns of this CRIA, namely the health of individuals within households.

The initial intention for the quantitative survey was to focus on, or to over-represent, the most vulnerable households with children, such as Roma families and the families with more than three children. However, because of the low sample size for the primary survey, it was decided to exclude Roma households and households with more than three children, due to the difficulties of sampling a sufficiently representative quantity of such households in a random sample. A larger sample would have been much better statistically and would have enabled the inclusion of the Roma population and households with more than three children.

Qualitative Component

Trade-off between coverage of country and depth of interviews

The research design sought to cover a wide range of situations – both geographical and social and hence 12 locations were selected. However, there was not significant diversity in the answers received, and so covering fewer locations in more depth may have produced even more insightful data.

Advantages/disadvantages of NGOs conducting qualitative fieldwork

For both budgetary reasons, and because of their good access to disadvantaged communities, the qualitative fieldwork was undertaken by four of UNICEF's partner NGOs, with training and support from an ex-

perienced qualitative researcher. On the positive side, as known and trusted actors they were able to arrange interviews with both service-providers and families and to ensure that the sample reflected the diverse circumstances of disadvantaged families. They will also play a key role in disseminating study findings to participants. On the negative side, being organisations not principally concerned with undertaking research, they brought less experience to the focus groups and conducting interviews than professional researchers would have done. If NGOs are involved in the fieldwork for other CRIA analyses, more extensive training and supervision of researchers is recommended.

Equal representation of different geographical areas

Sites were ultimately selected based on the activities of partner NGOs. This meant that only one site in southern B&H was covered in the qualitative component, meaning that differences in electricity usage related to geographical/climatic factors in this part of B&H (warmer summer temperatures and greater use of air conditioners) could not be fully explored.

Effectiveness of qualitative techniques

The qualitative techniques worked well, in particular, using projective techniques such as scenarios to avoid putting children in an embarrassing position by talking about their individual difficult circumstances. Many did recount these situations, or those of people they knew, voluntarily.

A longer timeframe for the qualitative component.

The short time frame (one month) for training and completion of fieldwork meant that some representatives of public services and local authorities were reluctant to participate as they felt that they had not been contacted using proper procedures.

Also a longer period would give more time for more

in-depth training and support of researchers, and for follow-up and probing during initial analysis of data. A two month period is suggested.

Participants' travel expenses to focus groups should have been reimbursed

This is general good practice, and particularly so in a study involving disadvantaged groups of people.



Impact of Price Rises on Children via Public Services

IMPACT OF PRICE RASES ON CHILDREN VIA PUBLIC SERVICES

As outlined in section 2, the CRIA examined two routes through which increases in electricity prices might have an impact on children: through households and through institutions which provide services to children. This section examines current service utilisation patterns and the potential impacts of price increases among the following service providers:

- Educational institutions: kindergarten, primary, secondary (inc technical)
- Health Care (primary health care clinics)
- Children's residential institutions
- Centres of social work
- Childrens' leisure activities (eg youth centres)

This section of the report contains analysis from the qualitative part of the study only since the quantitative analysis was focussed on households and not institutions.

CURRENT UTILISATION OF ELECTRICITY

General Usage Patterns

Electricity is used for the following purposes in the institutions surveyed:

1. **Lighting**
2. **Hygiene** (washing machines in children's homes and kindergartens, vacuum cleaners in most of these institutions)
3. **Administration** (communication – telephone and fax machines, computers, printers, photocopiers)
4. **Food preparation** in most of these institutions (cookers, refrigerators, microwaves, coffee machines, deep freezers and refrigerators in the institutions' warehouses). In the kitchen of the Zenica Children's Home food is prepared for the town public kitchen and "it is the greatest electricity user in the home."
5. **Heating and air-conditioning.** Electric power pumps were used to power central heating systems (e.g., in primary schools in Zenica, Gradiska,

Teslic, and in the Centre for Social Work in Banja Luka). Electric heaters were used for additional heating of premises (e.g. in, primary schools in Mostar and Zenica, other organizations where children spend their free time in Tuzla and Banja Luka, and in Centres for Social Work in Kakanj and Gradiska). Air conditioners were commonly used,²⁴ but in a few cases electric fans were used instead.²⁵

6. **Maintenance** (electric power machines, e.g. drills and grinders)
7. **Educational and entertainment purposes** in schools and youth centres to power computers, printers, TV sets, overhead projectors, music players, radio-cassette recorders, DVDs, computer projectors etc. More than half of the secondary schools (Zenica, Gradiska, Teslic, Tuzla, Kakanj, Banja Luka, Lukavac, Sanski Most) stated that they use electricity for practical teaching process in the schools' workshops – for example, in specialized classrooms (SS Zenica), textile workshops (SS Zenica) students' kitchen where practical teaching is carried out (SS Teslic), practical exercises for electrical engineering work (SS Tuzla), school farm and mechanical technicians' workshop (SS Sanski Most) or for utilization of various machines and tools (SSs in Kakanj, Banja Luka and Lukavac).
8. **Health care** - for operating medical equipment (e.g. ultrasound scanner, electrocardiogram, X-ray machine, instrument sterilization processes, laboratory, inhalation machines, baby incubators and child monitoring systems) or for maintaining cold chains and ensuring safe storage (e.g. fridges for medicines, derivatives, and blood samples).
9. **Children's activities.** For example, Lukavac Children's Home said that they used electricity in the handicraft-and-services centre (*where we now have a bakery that operates using electric power*), disco club and dentist's office (*that operate occasionally*). Banja Luka Children's Home stated that they use electricity for spotlights at the playgrounds for handball, volleyball, football and basketball.

24) For example, in primary schools in Mostar, secondary school in Gradiska, Children's home in Mostar, health care institutions in Zavidovici and Gradiska, Youth Center in Mostar, Centers for Social Work in Banja Luka, Mostar, Bosanski Novi and municipality buildings in Banja Luka and Prijedor.

25) For example, in Youth Centres in Tuzla, health care institutions in Zavidovici and Teslic, and Tuzla and Prijedor municipality buildings.

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Gradiska Primary School used electricity for its radio station and Gradiska Secondary School, for its gym. The handball team from Zavidovici stated that their primary electric power consumer is their club's gym.

Some institutions also pointed out that the electricity is used all the time and that it is essential for normal life.

Electricity is used here incessantly and we couldn't function without it. (Children's home, Lukavac)

Absolutely for everything, for our activities. It would be unbearable without electricity. (Youth Center, Mostar)

Seasonal Differences in Electric Power Consumption

Most of the institutions' representatives stated that power consumption is higher during the winter when prices are also higher. For example, Lukavac secondary school reported twice the spending on electricity in winter as in the summer. In winter, electricity is mostly used for heating (central and additional heating sys-

tems), and lighting needs are also greater.

We spend more in winter. We use electric heaters for the heating of our premises. (Centre for Social Work, Mostar) ²⁶

Electric power is more expensive in winter, and, consequently, the bills are higher. (Bosanski Novi Municipality)

Even where heating is oil-based, electricity is still needed, Regardless of the fact that we heat our premises with heating oil, the whole system requires electricity. (Children's home, Banja Luka)

Electricity is necessary for proper functioning of heating system pumps in the boiler room. (Gradiska Municipality, primary schools in Novi Grad, Zenica, Lukavac, Gradiska, Sanski Most and Teslic, SS in Lukavac)

On the whole, institutions spend less in summer because of cheaper tariffs, lesser heating and lighting needs, and less need to use electrical equipment.

Children spend more time outdoors in summer. (Kindergarten, Lukavac)

However, where use of air conditioners or fans is

TABLE 2: INSTITUTIONS' FUEL USE

Fuel	Examples of Use
Wood	Kindergarten - Prijedor Primary schools in Gradiska, Mostar, Kakanj, Novi Grad Secondary School - Teslic Health care centres - Bosanski Novi, Prijedor and Gradiska Bosanski Novi and Teslic municipalities
Coal	Kindergarten – Gradiska Primary schools – Gradiska, Lukavac and Mostar Health care - Teslic Secondary school – Teslic Municipality – Tuzla
Gas	For boiler rooms or heating: Centres for Social Work – Bosanski Novi, Lukavac, Kakanj, Banja Luka, Gradiska Youth Centre – Banja Luka, Kindergarten – Lukavac For cooking: Kindergarten – Prijedor, Primary schools – Gradiska, Banja Luka Secondary schools – Prijedor, Teslic Children's homes – Mostar and Tuzla
Oil	Children's homes – Tuzla and Banja Luka

26) Similar answers from the Centre for Social work, Tuzla, health care centre, Bosanski Novi, and Zavidovici Municipality.

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common, this increases summer bills substantially.

Use of Alternative Fuels

Some of the institutions surveyed already use other energy sources to reduce electricity bills (table 2)

Others stated that they were unable to switch fuels, as alternative fuels were as expensive as electricity or because the costs of changing power sources were prohibitive:

It is not possible to use alternative fuel because the building is not adjusted to enable utilization of other types of fuel/energy sources. (Social Work Centre, Mostar)

The necessary equipment for alternative types of heating is very expensive. (Primary School, Zenica)

There are no possibilities to do that [switching fuels] and even if there were, it would be very expensive, especially with regards to buying wood and gas... (Primary School, Prijedor)

Some institutions' representatives stated they did not want to use gas "because of children's health conditions as the kids spend most of the time in our premises. They complain a lot when the gas is on, they say there is no air, they can't stand the smell, etc." (Youth Centre Prijedor, and Secondary School Bosanski Novi).

If electricity prices are increased, most of the representatives stated that they could not make any further use of other fuels.

INSTITUTIONS' EXPENDITURE ON ELECTRIC POWER

Several of the interviewees were not aware of their institution's expenditure on electricity, either because that was not their area of responsibility or because electricity costs are covered by the relevant ministry or municipality.

Electric power costs are paid by the Ministry. (SS Bosanski Novi)

The town covers the costs, in accordance with the Law on Secondary Schools. (SS Banja Luka)

Electric power costs are covered by the Municipality. (SS Prijedor)

The Ministry pays for electricity so we don't know how much that is. (Children's home, Lukavac)

Others responded in terms of the percentage of their budget or 'material expenditures' spent on electricity. (Table 3)

From these responses, the scale of expenditure on electricity among many of the service providers interviewed is already apparent. Some institutions are already having enormous difficulty in paying their electricity bills:

We are already facing huge problems regarding payment of electricity bills. (PSs, Prijedor and Banja Luka)

The discussion in the next section of their responses to potential price increases needs to be seen in this context.

TABLE 3: ELECTRICITY COSTS AS PROPORTION OF BUDGET

Type of Institution	Electricity Expenditure	Examples
Municipalities	0.5 – 2 percent of total budget	Tuzla, Mostar, Zenica
Secondary schools	1.4 percent budget – 30 percent of total budget	Kakanj, Banja Luka
Primary schools	12 – 67 percent material expenditure budget ²⁷	Lukavac, Zavidovići
Kindergartens	3-25 percent of material expenditure	Zenica, Gradiska
Health care institutions	5-10 percent of total budget, 15 percent material expenditure	Zenica, Gradiska
Centres for Social Work	10 percent of material expenditure (summer) – 30 percent (winter)	Mostar, Sanski Most, Bosanski Novi
Children's homes	4-60 percent of material expenditure	Zenica, Mostar
Leisure activities	0.5 – 40 percent total budget	Banja Luka, Mostar

27) One primary school representative responded that that electricity costs were 400% above anticipated.

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IMPLICATIONS FOR SERVICE PROVISION OF ELECTRICITY PRICE INCREASES

The research explored institutions' probable responses to price increases of 15 to 50 percent and the impacts on the services they provide. These price scenarios were suggested in interviews with the Deputy Minister of Energy²⁸ as an indication of the range of price increases that may be necessary if the sector is reorganised and prices increased to reflect costs. The quantitative survey suggests a median level of monthly electricity expenditure across all households of 45KM. According to the PA Consulting Group (cited in Basic, 2004), the increase required to raise prices to cost levels is approximately 12KM monthly (based on their estimate of 145KM annually). If this is applicable to institutions as well as households, it suggests an increase of around 26 percent, which is between the lower and higher limits used for this study. The research also explored interviewees' perceptions of likely household responses to such price increases.

Likely Impacts of Electricity Price Increases

Interviewees discussed both the impacts on their institutions and the services they were able to provide, and the likely broader impacts on the people they serve. Institutions' likely responses fell into four main categories:

- Cuts in electricity usage
- Reduced expenditure on other aspects of services

- to accommodate electricity price increases
- Cuts in staffing, staff training or lowering staff working conditions (such as heating staff rooms less)
- Increase in service charges (in fee charging institutions)
- Closure of services (in the event of a 50 percent price rise)

While a few of the institutions' representatives felt that a 15 percent price rise would be manageable, they were clearly in the minority²⁹. Most respondents felt that they had already introduced maximum saving measures and were unable to make further savings³⁰.

Since the war, we have been spending our resources with care and do not follow and meet many activity standards as our resources are quite limited. (Children's home, Zenica)

Nothing in our institutional expenditures could be cut down. (Health care institutions, Gradiska, Teslic)

As a result, any expenditure savings forced by electricity price increases would impact on service provision. None of the service-providers and budget-holders interviewed felt that a 50 percent increase would be manageable; indeed they viewed it as a total disaster.

That would affect us all, we'd live in the dark. (Teslic Municipality representative)

That would take us back to our great-grandparents' time as the electricity would be cut off. (Teslic Municipality representative);

TABLE 4: INSTITUTIONS' PROJECTED ELECTRICITY SAVINGS

Area of saving	Examples
Administration and communications	PS Zenica; SS Teslic and Bosanski novi; CSW Mostar
Lighting	Preschool institution, Prijedor; PS Tuzla and Kakanj; SS, Gradiska and Lukavac; Children's home, CSW Lukavac; Youth Center, Tuzla
Heating (e.g. reducing use of electric heaters or heating fewer rooms)	PS, Zenica, Tuzla; SS, Teslic; health care institutions in Gradiska and Teslic; SWC Gradiska; Zenica and Teslic Municipalities; Youth Center in Tuzla
Hygiene – use of hot water and washing machines	Preschool institutions in Prijedor and Zenica; SS Kakanj, Children's home, Banja Luka
School maintenance and cleaning	PS, Sanski Most, Zavidovici and Tuzla; SS, Lukavac)
Kitchen	Children's homes, Lukavac, Bosanski Novi

28) Mr Mile Srdanovic, 22/12/05.

29) These included Prijedor Secondary School and Centers for Social Work in Bosanski Novi and Tuzla; Zavidovici, Tuzla and Prijedor Municipalities.

30) Examples include: pre-school institutions in Gradiska and Zenica; PSs in Gradiska and Banja Luka; children's home, Zenica; Zavidovici, Kakanj, Teslic, Gradiska and Mostar Municipalities; children's leisure services, Banja Luka and Zavidovici.

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Areas for Making Savings

Table 4. summarises where service providers felt they could make savings

Impacts on Quality of Services Provided

As noted above, service provision would likely be affected by direct cuts either in electricity use, savings elsewhere to accommodate increased electricity prices, staffing cuts or increased prices. This section details responses by type of institution.

Education: A price increase of 15 percent would lead to:

a) declining quality of education due to a reduction in the use of electric-powered teaching aids, in practical/ vocational activities, and extracurricular activities. There was consensus on this at all levels from kindergartens through to secondary schools:

We could maybe cope somehow but it would be necessary to avoid some teaching aids and that is out of question. (Kindergarten, Zenica).

Primary schools in Mostar and Zavidovici and a secondary school in Mostar gave similar responses.

Children would work less on their computers. (PS, Bosanski Novi, Zenica, Kakanj)

Activities and exercises carried out on various machines would have to be reduced to a minimum. Students would work on one instead on five machines. (SS Kakanj)

That would have a huge impact on our material expenditures to the detriment of books and magazines for our library. (PS, Gradiska);

b) Reduced teaching time to reduce heating and lighting costs (primary schools - Bosanski Novi and Mostar, kindergarten, Lukavac). Study trips would also be eliminated.

c) Increase in prices in fee-charging institutions (kindergartens and secondary boarding school)

In two kindergartens (Gradiska, Prijedor), interviewees said that prices would have to be raised. The others felt that further price rises would mean that parents could no longer afford to send their children. Particularly in the context of recent VAT-related price rises, fur-

ther increases would make their services unsustainable as demand would disappear. "There would be no point in this town with parents' wages so low." (kindergarten, Zenica) In Sanski Most boarding school, fees would be raised by 15 percent.

A 50 percent increase would have similar but more drastic effects, including teaching in morning hours only, and loss of practical and extra-curricular activities:

In that case we would go back to the old ways of working, give children chalk and writing tables as their ancestors used to do. (PS, Zenica)

We would have our classes only in morning hours – the rest would have to be cancelled – teachers' training, buying new teaching aids, supplying poor children with textbooks. (SS, Mostar)

We would lose the current quality of teaching, practical experiences in teaching, for example, information technology and foreign languages. (PS, Zenica; similar answers in PS Teslic, Kakanj, Gradiska, Lukavac, Sanski Most, Kakanj, Mostar, Zavidovici; SS Gradiska, Mostar, Tuzla, Prijedor and Teslic)

Another common response was to try to minimise the impact on children, though this meant staff working conditions declining.

There would be fewer seminars, less professional literature and development. (SS, Mostar)

We would save on material procurement and that would lower the quality of working conditions. (SS, Sanski Most)

Some institutions, particularly kindergartens,³¹ felt that they would have to shed staff or reduce staff salaries. This would lead to lower staff morale and could also contribute to lower quality teaching. Others feared that they would have to close down completely.

We would have to close the kindergartens down, children would be deprived of the opportunity to be educated and brought up in accordance with methods and standards applied in civilized societies. (Pre-school institutions, Zenica)

31) In Lukavac and Prijedor

IMPACT OF PRICE RASES ON CHILDREN VIA PUBLIC SERVICES

The only solution would be to close the schools down; there would be hundreds of illiterate people. (Primary school, Bosanski Novi)

A 50 percent price increase would also raise pressure on municipality education budgets and lead to a reallocation of expenditure away from capital projects (e.g. repairs, building gyms) to meet recurrent electricity costs.³²

Health Care Centres

The representatives of health care centres who were interviewed felt that it would be impossible to reduce electricity use since medical equipment requires it. They stated that they would have to increase the prices of their services in the event of both a 15 and 50 percent price increase.

Patients' participation in all expenses would be increased. (Health care institution, Kakanj).

All health care representatives interviewed believed that this would lead to a reduction in service use.

People would come to us less because they could not afford it. (Health care centre, Bosanski Novi).³³

Children would not have thorough medical checkups, would not go to see the doctor regularly as the equipment would not function to the necessary extent. (Health care centre, Bosanski Novi).

CRIA health sector advisors feel that closure of basic health care facilities would be unlikely, even in the context of significant price increases, but that certain specialised services might well have to close since these are already overstretched (Majkic, 2007).

In combination with the cost-saving measures that households would expect to undertake outlined in section 4, many of which would have clearly negative health consequences, this reduced accessibility of health care is a real concern. Furthermore, where health care providers attempt to manage budgets by reducing staff salaries, as representatives from Zavidovici and

Sanski Most said would occur in the event of a 50 percent electricity price rise, declining staff morale could lead to a poorer quality of service.

Children's Homes

With a 15 percent price increase, the representatives of children's homes interviewed felt it would be impossible to ensure basic living conditions for their children.

Unfortunately, it would be to the detriment of our children – reduction of expenditures of clothes, shoes, hygiene related needs. (Children's home, Zenica)

Our fridge would not be quite full. (Children's home, Bosanski Novi)

Other children's home representatives responded that they would have to save on textbooks, transportation of students to and from school, and on extracurricular activities. In the event of a 50 percent increase, children's home representatives considered that they would have to make "drastic changes in children's living standards, and the quality of our services" (Banja Luka); cut back on food purchases, and children's pocket money (Sanski Most.), and would end night-time study (Banja Luka).

In either case, the care and education of this vulnerable group of children would be seriously compromised.

Children's Leisure Activities

The most common responses to a 15 percent electricity price increase would be to cancel certain activities (some children's clubs or specialized courses), to shorten opening hours or increase prices charged for those who can afford to pay. One youth centre had already ruled out across-the-board fee increases since *"... our beneficiaries are mainly children and young people from poor families and that is the purpose of this Youth Centre... We are here to provide those without money with the same opportunities as those who have money. So, mainly poor children, socially disadvantaged and chil-*

32) Interview, Banja Luka municipality. Though education is largely financed by the Entities' Ministries of Education, municipalities have specific responsibilities towards schools, and in some parts of the country, legal responsibilities to contribute to financing.

33) Similar answers were given by Health Care Institutions in Gradiska, Prijedor, Kakanj and Zavidovici.

IMPACT OF PRICE RASES ON CHILDREN VIA PUBLIC SERVICES

dren of deceased war veterans would have everything in our centre for free. **(Youth Centre, Banja Luka).**

A 50 percent increase would have similar but more drastic effects, with services closing or operating at greatly reduced provision:

Additional education activities with children in community social club would be terminated because computers cannot work without electricity; young people would not be able to gather here, dance, learn, watch movies, etc. (Community representative, Teslic; similar answers from Teslic Municipality Assembly and Mostar Youth Centre)

We would reduce the utilisation of lights at the sport playground where our children play football, basketball and volleyball, especially in summer evenings, because they cannot play during the daylight due to extremely high temperatures. (Children's home, Banja Luka)

There would be no students' clubs or other school and out of school activities. (PS, Tuzla, similar answers in SS Bosanski Novi, Lukavac, Mostar);

We would stop working for sure. Closed! That would be the only solution. It would be impossible to find so much money for such a big bill. (Youth Centre, Prijedor).

It is clear from these responses that children's and young people's access to organised leisure activities is likely to diminish, particularly so for disadvantaged children whose families cannot afford to fund their participation in costly extra-curricular activities (see section 4). Some respondents expressed concern that with a lack of social and educational opportunities, young people would get involved in anti-social activities.

Children and youth would start looking for new things in the streets and would be exposed to things like drugs, alcohol, street fights, etc. We are doing everything we can to prevent that, of course. (Youth Centre, Prijedor)

Centres for Social Work

A 15 percent electricity price increase would lead to fewer visits to current and potential clients:

We would probably have to reduce gasoline expenditures and cut our field work down to a minimum. (Center for Social work, Lukavac)

This could result in more people being by-passed by

services to which they are entitled at a time when the need for financial support is likely to increase (see section 5). A 50 percent price increase would have more drastic effects.

We would not be able to plan quality improvement and enlargement of our services but would rely on basic, legally guaranteed rights. (CSW, Banja Luka)

That would increase our problem, there would be higher pressure on our institution and we would increase the pressure on the town to free some people from payment obligations or to subsidize them. (CSW, Mostar)

A certain part of our funding intended for services for our beneficiaries would have to go somewhere else, for things like electricity, and would not be used for its real purpose – hygiene packages, food, clothes, shoes. (Centre for Social Work, Bosanski Novi)

Some Centres for Social Work (e.g. Bosanski Novi) also expected that smaller offices might be closed.

Broader Impacts – Increase in Household Poverty

Reflecting on the broader consequences of electricity price increases on poor families, both Centres for Social Work and Municipality representatives³⁴ identified the following broader impacts due to increased poverty. These include general hardship and savings on food and clothing.

The entire population would be affected because the increase would entail the increase of other products' prices as well. (Banja Luka Municipality)³⁵

Our beneficiaries can hardly make ends meet because the funding that they receive from us is minimal and they already have debts. (Centre for Social Work, Mostar)

The consequences for children were of special concern.

Children would be left to hang around in the streets, deprived of many things (clothes, shoes, even food). (Local community representatives, Teslic Municipality)³⁶

In addition to children, representatives of Social

34) Centre for Social Work, as detailed above; Zenica and Tuzla municipalities.

35) Similar comments were made by Prijedor municipality and local community representatives in Kakanj.

36) Similar comments from Bosanski Novi primary school.

IMPACT OF PRICE RISES ON CHILDREN VIA PUBLIC SERVICES

Work Centres and municipalities thought that price increases would particularly affect the following groups: retired people, unemployed people, people with low and irregular incomes, large families, refugees, and people receiving social welfare benefits or who make extensive use of social and health services, such as people with disabilities.

Both sets of institutions expected that the number of people seeking social assistance would increase. At the same time, rising electricity prices would mean that they would have to reduce budgets for social protection or for “everyday life of our beneficiaries” (for example, assistance to various associations in Kakanj Municipality). The fact that decentralised authorities are assuming they will be unable to provide services to their most vulnerable clients means that a federal or entity-level response is required (see section 6 - recommendations).

CONCLUSIONS

It is clear from the responses of institutions and services responsible for child welfare that in most cases even modest electricity price increases would be hard to manage. They might lead to cuts in the quality of service, reduced availability of these services and/or in-

creases in the prices they charge users, hence reduced accessibility to poorer families. Though schools expected serious negative consequences, their expenditure at secondary level, at least, is somewhat protected through the legal basis of their financing (a proportion of funds are provided by the municipality level). Despite the fact that municipalities take a degree of responsibility for primary schooling, it is unlikely that they would be in a position to meet the increasing needs. Levels of kindergarten usage are already very low in B&H as only approximately six percent of children attend kindergarten (Memic, 2007 - section 4), and these tend to be of higher socio-economic groups.

Therefore, impacts via this route will not affect a large number of disadvantaged children. Similarly, though the impacts on children’s homes may be significant, a relatively small number of children in B&H live in these institutions.³⁷ Nevertheless, these children are among the most vulnerable, and so these institutions must be considered for special tariff mitigation measures (see sections 6 and 7). The most far-reaching concerns are the potential impacts on health care institutions, since their financing, availability and quality of services affect the whole population, and children are one of the two most significant user groups (See section 4). Furthermore, ill-health can both affect children’s future prospects and the current economic status of adults and thus is strongly linked to poverty.

37) In 2005, 2,741 children, the vast majority in the FB&H, were officially registered as being without parental care, slightly over 1,000 children in B&H were in 15 institutions for children deprived of parental care. Approximately 1,400 children in B&H were living in foster families, while 330 children were living in institutions caring for children with mental disabilities, UNICEF 2007.



Impacts at Household Level

IMPACTS AT HOUSEHOLD LEVEL

This section discusses the potential impact of electricity price changes on children via impacts on their households. It starts by discussing general relevant demographic, poverty and service usage information obtained from the CRIA survey (4.1) and then discusses the main patterns of electricity usage (4.2). It then considers current electricity expenditure (4.3) and the potential impacts of price rises (4.4).

FEATURES OF THE SAMPLE

Demographic Information

Of the quantitative sample, 72.8 percent of the households in the FB&H had one or more children. In the RS, the figure was at 26.8 percent. Roughly 31 percent of the sample was urban³⁸ households and the remainder rural. An average household with children has 4.55 members of which 1.77 are children. In the RS households are bigger with on average 4.77 members and 1.73 children. In rural areas, households with children are larger, having an average 4.74 members and 1.82 children.

Housing Conditions and Access to Energy

About eight percent of the sample declared that they lived in inadequate or bad living conditions, with

roughly similar percentages across the entities and urban and rural regions. However, electricity coverage is virtually complete as 99.6 percent of the sample is connected to the public network electricity source and more than 91 percent of the population has a 24-hour continuous electricity supply.

Furthermore, the survey indicated that in the FB&H, 89 percent of the population has running water within the housing unit. In the RS the figure is 81 percent, with about 18 percent of the population using a well or a spring. One fifth of those that do not have running water in house go more than 100 meters to the closest source of drinking water. Most households in B&H (97 percent) have access to water 24 hours a day.

The following table (table 5) shows that for about 72.5 percent of the surveyed population, heating is from private devices such as stoves. Just over 11 percent of the population has their own central heating system and a small percentage (6.6 percent) has district or other centralised heating systems.

Solid fuels (mainly wood) remain the main source of heating for almost 90 percent of the population as indicated by the survey. Roughly 70 percent of the population does not have a secondary source of heating but for the 30 percent that does, this is electricity. Homes are adequately heated about six hours daily and generally heated for about seven to eight hours, which suggests that they are often not heated during the night

TABLE 5: MAIN SOURCES OF HOUSEHOLD HEATING

		District heating by utility or boiler house.	Own central heating system	Separate heating devices (heaters, stoves)	Other	Total
Entity	Federation of Bosnia and Herzegovina	6,0	13,0	67,8	11,3	98,1
	Republic of Srpska	8,3	7,4	84,3	0	100,0
Geographical region	Urban	16,0	16,5	52,0	13,0	97,5
	Rural	2,3	8,9	81,7	6,2	99,1
Total		6,6	11,2	72,5	8,3	98,6

38) Using the definition from the 1991 Census.

IMPACTS AT HOUSEHOLD LEVEL

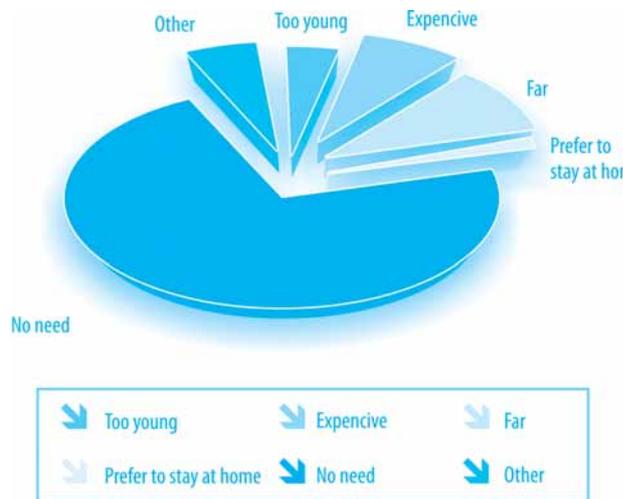


Figure 1: Main reasons for not attending kindergarten

or during working hours. Thus, despite the very high coverage of electricity supply, heating remains largely provided by other sources of energy.

Education

Attendance at kindergarten is very low (Figure 1), with some 95 percent of pre-school children not attending at all. The reasons given for not attending are shown in figure 2 below. Most respondents felt that there is no need to use kindergartens. A small percentage felt they were too expensive (7.1 percent) or too far away (9.1 percent). This suggests that the impact on children through the indirect effect on these institutions is likely to be small.

In the econometric analyses below, various household characteristics such as the levels of education of members of the household were considered as possible explanatory variables in assessing the types of

coping mechanisms favoured. The sample shows that the majority of citizens in B&H have a secondary school diploma, while about six percent have a university diploma. (See table 6).

Health

Health insurance covers about 94 percent of people living in the surveyed households with children in B&H (there are no significant disparities between entities or between urban and rural regions). Roughly every tenth citizen has a chronic illness and the proportion in the FB&H (12.5 percent) is higher than in RS (6.9 percent). The most present chronic illnesses are high blood pressure (36 percent of respondents with chronic illness)

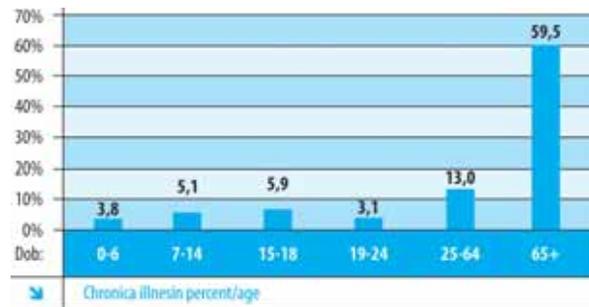


Figure 2: Percentage of chronic illness in households with children in B&H

(Figure 2) and respiratory illness (13 percent of cases). Increased costs of electricity may well be associated with higher levels of respiratory illness if fuel use substitutions take the form of moving towards fossil fuels for cooking or heating. Figure 3 indicates levels of chronic illness in households with children in B&H.

TABLE 6: LEVEL OF EDUCATION (MEN AND WOMEN) BY AGE IN B&H

Age group	Ever attended school	Currently in school	Without any diploma	Primary school diploma	Secondary school diploma	University diploma	Willing to continue education
5-6	x	92,6	100,0				96,3
7-14	98,3	97,3	97,7	2,4			97,3
15-18	99,3	85,9	10,4	77,6	12,0		85,3
19-14	98,5	24,6	2,4	19,2	76,0	2,4	27,4
25-65	96,9	1,6	8,3	27,2	58,3	6,1	3,6
65+	60,8	4,2	34,0	52,0	14,0		x

IMPACTS AT HOUSEHOLD LEVEL



Figure 3: Visits to General Practitioner, Primary Basic Health Service Unit or Health Centre in last month

Children under seven, children aged 7-14 and older people aged 65+ have the highest frequency of visits to health care institutions (see figure 4). Across the population, 21.6 percent of respondents in the FB&H and 13.6 percent in the RS had visited a health care institution in the last month, indicating higher usage levels in the FB&H. Beyond these entity-level differences, regional and urban/rural differences are insignificant. As noted in section 3, and discussed below, these usage patterns mean that impacts on child health are likely to be significant.

Employment

The survey shows that every fifth head of household in B&H is unemployed by their own definition of employment. Almost every second woman in households with children declared herself as unemployed. About two to three percent of children aged 7 to 14 in B&H worked for a wage and about four percent worked for

free, with insignificant regional and gender differences. (See Table 7.)

Time Use

The following table (table 8) summarises responses to the children's time use module in the survey. A school-age child in B&H spends on average five hours in school, travels for about half an hour to reach school and watches television for about two hours. Two to three times weekly they have free time, defined as listening to music, reading or playing. About half of children spend an hour per day in learning activities which are not connected to school or university. One third of children undertake one sport activity weekly. One third of children spend one hour daily on a computer. Roughly one in ten children in B&H spend some time daily on the internet.

CURRENT ELECTRICITY USAGE PATTERNS

Main Uses of Electricity at Household Level

The main uses of electricity by household were found to be:

- hygiene (boiler, washing machines, irons, vacuum cleaners and hair driers)
- entertainment, information and communication (TV and radio sets, mobile charger, computers,

TABLE 7: EMPLOYMENT STATUS OF MEN AND WOMEN IN HOUSEHOLDS SAMPLED

	B&H	M	F	Heads of households
Employee	26,1	38,8	14,0	46,9
Self-employed	4,2	6,3	2,2	7,5
Contractual	0,3	0,6	0,0	0,5
Fixed term/seasonal worker	3,2	5,5	1,1	6,0
In family business	1,7	1,9	1,4	0,5
Housewife	21,2	0,2	41,2	2,0
Student	12,4	11,2	13,5	0,7
Pensioner	9,0	10,4	7,7	17,2
Unemployed	19,7	23,2	16,5	17,2
Unable to work	2,1	1,8	2,5	1,5

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TABLE 8: CHILDREN'S TIME USAGE IN B&H

	Daily in hours			Daily in hours			Number of times in last 4 weeks																		
	Mean	Median	Number	Mean	Median	Number	Mean	Median	Number																
Entity	Federation of Bosnia and Herzegovina	5,2	0,9	2,1	1,5	5,3	1,7	1,3	0,7	2,1	0,6	1,8	2,2	2,1	1,9	79	94	151	115	11	73	70	126	360	
	Republika Srpska	4,7	1,7	1,7	1,2	3,8	1,2	1,3	0,1	0,0	0,3	0,3	0,5	0,3	0,6	1,3	1,9	3,5	2,1	4,2	2,3	4,5	6,2	21,4	
		5,0	0,5	1,8	1,0	3,0	0,5	1,0	0,0	0,0	0,3	0,2	0,5	0,3	0,3	1,0	2,0	2,0	2,0	3,0	1,0	4,0	7,0	15,0	
Region	Urban	84	84	82	43	92	8	22	4	6	1	4	6	7	10	6	21	13	29	16	0	3	20	23	80
	Rural	5,6	1,1	2,5	2,2	4,3	1,4	1,2	0,2	0,2	0,4	0,6	0,8	0,5	0,5	1,5	2,0	2,5	2,4	4,6	3,5	2,0	2,9	5,6	14,2
		5,0	0,3	2,0	1,0	2,0	1,0	1,0	0,0	0,0	0,3	0,3	0,5	0,5	0,4	1,5	2,0	2,0	2,0	4,0	2,5	1,0	2,0	6,0	10,0
Total		146	146	146	74	156	40	73	13	7	5	6	3	14	14	2	54	46	67	56	6	27	40	61	146
		4,8	1,0	1,9	1,0	5,4	2,0	1,4	0,8	2,2	0,6	1,9	0,8	0,5	0,5	5,4	2,0	2,5	2,1	3,3	4,8	1,6	3,1	5,3	12,8
		5,0	0,5	1,5	1,0	2,0	2,0	1,0	1,3	0,0	0,5	0,5	0,5	0,3	0,3	1,0	1,0	2,0	1,0	2,0	4,0	1,0	2,0	5,0	10,0
		301	300	297	145	332	18	82	29	27	18	21	19	42	47	23	44	61	113	75	5	49	50	86	292
		5,1	1,0	2,1	1,4	5,0	1,6	1,3	0,6	1,8	0,6	1,6	0,8	0,5	0,5	5,1	2,0	2,5	2,2	3,8	4,1	1,8	3,0	5,4	13,2
		5,0	0,5	1,8	1,0	2,0	1,0	1,0	0,6	0,0	0,5	0,5	0,5	0,4	0,3	1,0	2,0	2,0	2,0	3,0	3,0	1,0	2,0	5,0	10,0
	451	450	447	221	491	491	58	157	42	34	23	22	56	61	25	100	107	180	131	11	76	90	149	442	

IMPACTS AT HOUSEHOLD LEVEL

video games for children, video and DVD players in some households)

- cooking (preparing coffee, breakfast, lunch and dinner)
- lighting (including for studying)
- heating and cooling

Some respondents pointed out that electricity is also used for house repairs. The quantitative survey confirms this pattern of usage - table 9 indicates the

proportions of households that used a range of electrical appliances.

Seasonal and Weekly Differences in Electricity Consumption

Mothers in Banja Luka pointed out that electricity is 50 percent cheaper at weekends. As a result, they leave hygiene-related activities (washing and ironing

TABLE 9: APPLIANCE USAGE (PERCENT OF POPULATION)

Appliance	F B&H	RS	Urban	Rural	Total
Electric stove	82,6	85,8	82,0	83,7	83,2
Solid fuel stove	86,6	89,6	66,2	97,0	87,4
Electricity and gas combined stove	14,4	13,8	23,7	10,1	14,3
Gas stove	4,5	6,0	3,7	5,6	5,0
Washer	91,8	89,8	96,5	88,2	90,8
Dryer	4,0	5,1	7,3	2,9	4,3
Dishwasher	12,6	8,9	17,7	8,4	11,3
Refrigerator	97,9	98,1	98,5	97,1	97,5
Freezer	71,8	89,6	74,8	76,8	76,2
Microwave	23,9	16,2	33,5	16,7	21,9
Vacuum cleaner	90,4	91,9	97,0	87,3	90,3
Sewing machine	19,6	22,3	20,0	19,9	19,9
Ironing devices other than regular irons (large ironing rollers)	2,2	4,2	2,3	2,9	2,7
Satellite dish	39,2	24,9	30,5	37,1	35,0
TV	97,4	97,5	99,3	96,6	97,5
Video player	69,6	53,4	72,3	61,5	64,9
Video camera	7,5	10,8	11,8	6,9	8,4
Stereo, CD player	55,0	58,1	63,5	51,4	55,2
Radio and cassette player	73,4	70,8	67,8	75,0	72,8
PC	39,6	29,8	51,3	29,6	36,4
Accordion	3,8	1,9	0,8	4,0	3,0
Piano	0,9	0,0	1,2	0,5	0,7
Bicycle	45,1	59,4	45,0	50,2	48,5
Motor cycle	5,0	7,4	6,0	5,6	5,7
Car	64,8	70,6	65,7	66,1	65,9
Van, jeep	6,5	7,9	8,7	5,9	6,7
Mobile phone, cell phone	89,1	87,5	89,5	87,5	88,1
Dial up Internet	7,0	8,7	10,4	6,2	7,5
ISDN Internet	1,2	0,0	1,3	0,7	0,9
ADSL Internet	4,0	3,0	11,2	0,4	3,7
Wireless Internet	0,7	0,0	1,2	0,2	0,5

clothes) for those days.

More generally, electricity consumption is highest in the winter as it is used for heating or supplementary heating of premises. If, for example, families use wood to heat the house, electricity is used to heat bedrooms before they go to bed. In spring and autumn, electricity is also frequently used in towns to heat homes before and after central heating season. In winter, electricity is used more for lighting and various entertainment activities (TV, computer) as families spend more time inside.

In summer, electricity is more used for hygiene.

We sweat more and change clothes frequently, children spend more time outside and get dirty. (father, Mostar)

We watch TV and listen to the radio less than in winter. Both children and the adults are outside... children do not use computers, music players and other devices as much as they do in winter. (father, Zenica)

In summer, electricity is used more for cooking because in winter families heat their homes with timber stoves and use the same source of energy for preparation of food.

Differences in Consumption among Household Members

Generally most respondents felt that older people are the most economical in their electricity use, while children use most electricity (for TV watching, using DVDs, videos and music players, computers, or, for having showers before going out or after sports). Younger children tend to use electrical energy more for indoor entertainment, while older children use it principally for hygiene and watching TV (and for making phone calls, for example, when cell phones need re-charging).

Gender differences in electricity usage were less pronounced among younger children but became clearer by teenage, with girls making more use of grooming equipment (irons, hair tongs, etc.), and boys continuing to play computer games and watching DVDs to a

greater extent than girls. Though many respondents pointed to girls' greater interest in their appearance, others noted that boys play more sports, spend more time outside and get dirty more, and so need more showers and hot water for washing clothes. Girls also make more use of electrical household appliances such as vacuum cleaners, kitchen appliances etc. Overall, the consensus was that girls use more electricity than boys - though not necessarily for personal use since they are substantively more involved in domestic activities - but that both sexes use electricity substantially.

Among adult household members, women were felt to use more electricity, but for general household wellbeing, such as cooking, cleaning, etc. Focus group participants also identified specific, predominantly 'male' uses of electricity, such as equipment needed for house repairs, and in rural areas, farm and garden-related activities.

CURRENT ELECTRICITY EXPENDITURE

World Bank research from 2004 found that 72 percent of households in B&H already considered electricity prices too high. This study also found that between 41 and 76 percent of customers, depending on the region, owed debts to the electricity companies with the largest debts and highest proportion of people in debt being in the RS.³⁹

In our survey, monthly spending on electrical energy was found to be in the range 40-50KM throughout B&H. This seems plausible given similar figures from the HBS 2004 survey which found monthly expenditure on electricity to be 41.1KM. The findings are summarised in table 10 below.

POTENTIAL IMPACTS OF ELECTRICITY PRICE INCREASES

From the survey, it is clear that households' main response to price increases is to try to increase house-

39) However, particularly in the area covered by EPB&H, these debts represented the time lag between presentation of bills and payment. In the area covered by EPRS, they were longer-term, of several months' standing.

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TABLE 10: MONTHLY SPENDING ON ELECTRICAL ENERGY (1 € = 1.95 KM)

		0-20 KM	21-30 KM	31-40 KM	41-50 KM	51-100 KM	100+ KM	Total %	Median value in KM
Entity	FB&H	4,6	24,5	28,8	18,5	18,5	5,0	100	40,0
	RS	1,0	19,6	9,3	31,4	30,9	7,7	100	50,0
Geographical region	Urban	0,0	16,7	11,4	40,4	16,7	14,9	100	50,0
	Rural	4,4	25,3	23,4	19,3	24,0	3,5	100	40,0
Total		3,3	23,3	20,6	24,3	22,2	6,2	100	45,0

hold income. Secondly, they would reduce their use of electrical appliances. Related to this, the use of other fuels, particularly wood, would be increased. Finally, they would cut other expenditures. Reducing children's consumption of nutritious food, or educational expenses

(e.g. extra classes) would be options of last resort (see Figure 4 below). This section discusses these likely responses to price increases of 15 percent to 50 percent and then considers their implications for children.

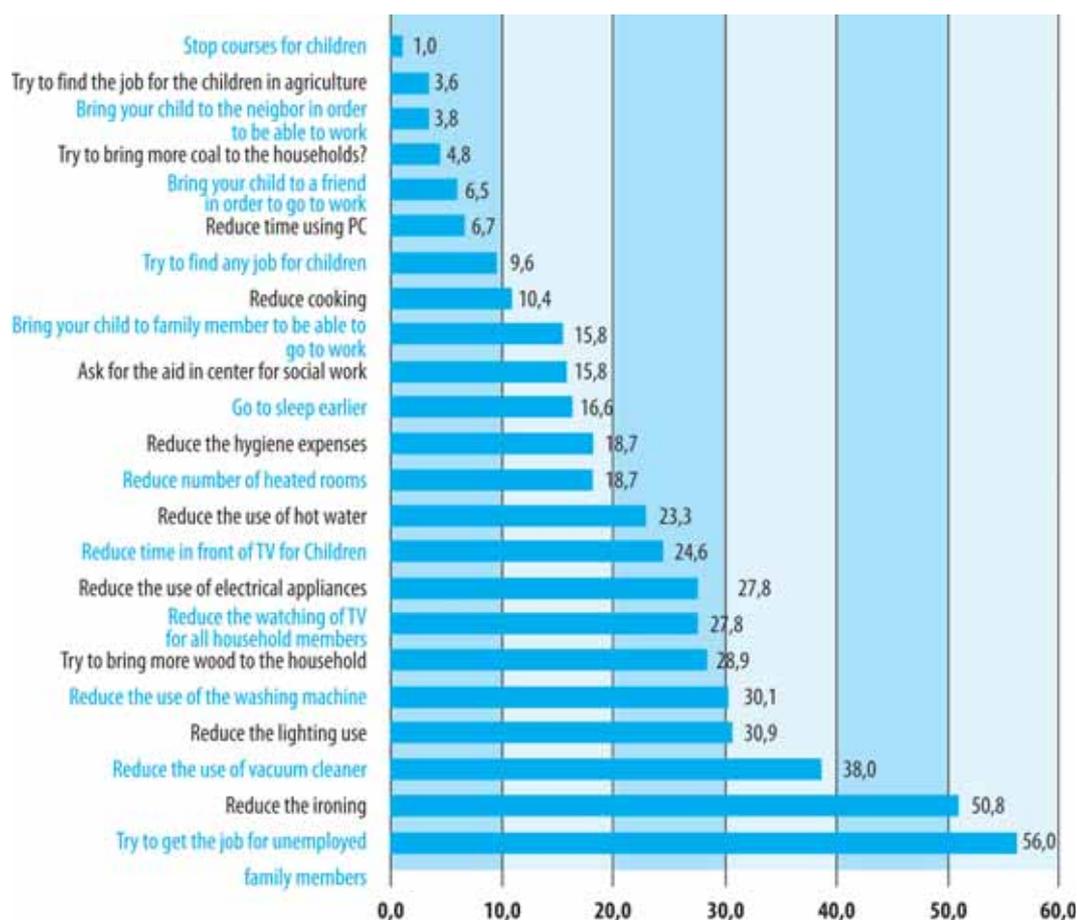


Figure 4 Likely responses to price rises

Boosting Household Income

Through Adult Employment

The most common way to do this was through adults seeking additional employment (56 percent of survey respondents). This is consistent with the high levels of self-declared unemployed adults in our survey (almost 20 percent of household heads - mostly men, and almost 50 percent of women in household with children):

I would look for seasonal work – cutting wood, collecting and picking fruit and vegetables, gardening, selling things at a flea market, building work, anything... (father, Mostar)

The only thing that I could do is to look for additional work because we have already reduced everything. (father, Mostar)

However, some children were pessimistic about this strategy:

They (parents) will try to find a job, which is almost impossible today. (boys, Sanski Most)

And some parents were already doing this, with consequences for their own well-being:

We are already working on two places. (mother, Lukavac)

The adults would be more tired as they would work more. And we have already reduced our needs down to a minimum. (father, Mostar)

Nevertheless, the econometric analyses suggest that this response is less likely for households with children (of any age) than for households without children. According to our estimates (see Appendix 1), for each extra child of age 0-5 in the household, the odds of a household stating that they would seek extra (adult) employment is reduced by 43 percent. For a child of 6-15, the odds are reduced by 66 percent and for a child of 16-18, the odds are reduced by 65 percent. Our findings therefore suggest that the use of this preferred coping mechanism may be limited by the prevalence of children in the household, leading to the use of oth-

er, perhaps suboptimal coping mechanisms.

Households who described themselves as living in good housing conditions were less likely to select this as a coping mechanism.

Through Child Employment

Currently only two to three percent of children aged 7-14 work for wages and an additional four percent were engaged in unpaid work, with no significant gender or regional differences (Memić, 2007). Our survey indicated that 10 percent of parents felt their children would need to look for work to help make ends meet.

He would have to find a job, even abroad maybe. Even now he goes and does all kinds of things if someone asks for it, digging or building works... anything. (father, Mostar)

And the younger one, when she graduates from the secondary school she will ask to go to university, but she will have to find a job. (father, Mostar)

One focus group participant also suggested that older boys might 'get involved in suspicious business or would work unregistered' (boy, Zenica).

The econometric analyses also suggest that certain households would seek to increase employment of children. As with increasing adult employment, households were less likely to suggest child employment as a coping strategy the more children were in the household. In particular, an extra child aged 0-5 in the household made the odds of selecting this strategy fall by 66 percent and the existence of an extra child of 6-15 made the odds fall by around 64 percent. As with increasing adult employment, households who described themselves as living in good housing conditions were less likely to select increased child labour as a coping mechanism.

Through Seeking Social Assistance

Almost 16 percent of survey respondents said that they would seek help from a Centre for Social Work. This is consistent with the responses of Centre for Social Work and municipality representatives discussed in section 3, who expected a substantial increase in demands for their support, particularly if prices rose by 50 percent. Interestingly, no focus group participants

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suggested seeking support of this kind. This may reflect the fact that the qualitative sample was already drawn from disadvantaged groups who do not see further support as a realistic possibility, a disinclination to admit to needing such help in front of others, or dissatisfaction with the availability of state social support as some other studies have indicated, particularly among vulnerable groups such as Roma.⁴⁰

These findings are somewhat clarified by the quantitative survey which suggests that certain types of households are more likely to seek help from social resources and institutions. Households where the head of the household was female were significantly more likely to suggest this as a coping mechanism. A male head of household is associated with a 69 percent reduction in the odds of choosing this as a coping strategy.

Other factors which increased the probability of a household selecting this mechanism were: the existence of household members with chronic illnesses, the number of incidences of household illness (in the last month) for which medical help was not sought, and the existence of children involved in some kind of labour (field working and other paid work) in the last month. Clearly, these are variables that signal a particular type of vulnerability related to children's work and overall household health. Conversely, the higher the number of employed household members, the less likely that the household would seek such help. Similarly, households which described their living conditions as adequate or good were less likely to seek social assistance in the face of price increases.

Reducing Use of Electrical Appliances

The most common CRIA survey responses involved using housework appliances, such as irons, vacuum cleaners and washing machines less (respectively 51, 38 and 31 percent - see figure 4). Sometimes this could involve 'washing and pressing clothes on weekends when the electricity is cheaper (father, Gradiska). How-

ever, it could also mean shifting to more labour-intensive ways of doing housework, such as washing clothes by hand⁴¹ and using brooms rather than vacuum cleaners⁴². This would be likely to have a disproportionate effect on women and girls, who principally engage in these activities.

Another 27 percent mentioned reducing general use of electrical appliances, and 10 percent said that they would cut down on cooking and refrigeration:

The fridge would be turned off. (mother, Tuzla)

The cooker would be used less. (mother, Prijedor)

Kitchen devices would not be used any more. (father, Kakanj)

The potential health implications of these changes are discussed in section x below.

Similarly 31 percent of survey respondents said that they would have the lights on less, while 27 percent would watch TV less.

*'We would turn the TV on only on some days; it would not be on all the time.'*⁴³

The implications of these for children's ability to study and access to information are discussed in section d) below.

A third set of responses involved use of heating and hot water and showed that 23 percent of respondents would reduce the use of hot water, and 18 percent would heat fewer rooms. Reduced hot water use would mean fewer showers. In the words of one mother in Teslic, *'They [her children] would have a shower once a week and not every day.'*

The econometric analysis was not able to discriminate adequately between the types of households that would reduce such expenditures and those that would not. This may be because these responses were spread widely across the sample (certainly, reducing ironing and the use of the vacuum cleaner or washing machine were three of the five most popular choices in the sample). We can conclude that the reduction of the use of such appliances is likely to impact on a wide range of household types.

40) Education Inclusion of Roma Children, NGO Budimo aktivni and UNICEF, 2005

41) Mentioned by mothers in Lukavac, Teslic, Prijedor, Bosanski Novi; fathers in Kakanj and Mostar; girls in Teslic, and boys in Mostar.

42) Mentioned by mothers in Teslic and Tuzla, girls in Teslic and boys in Sanski Most and Gradiska.

43) Mentioned by fathers in Kakanj and Mostar and mothers in Lukavac and Teslic.

Making Greater Use of Alternative Fuels

Twenty-nine percent of survey respondents would try to use wood more often for heating and cooking, while another five percent would use more coal. There are high levels of ownership of both electric and solid fuel stoves, (83 and 87 percent across B&H respectively). Though the proportion of urban households with solid fuel stoves is lower, it is still surprisingly high at 66 percent. The extent to which respondents would attempt to reduce electrical consumption this way is not surprising. In practice, this would mean: *[using] wood burning stoves in the backyard and we would prepare our winter food stores. This would most likely also be happening in case of a rise in electricity costs too. (father, Sanski Most)*

While some saw this mainly as a summer activity, others felt they would need to use wood: *'throughout the year because food must be prepared' (girls, Teslic).*

This would reduce children's sleep time: *We would have to get up early in order to set the stove and heat water to wash ourselves. (girls, Teslic, Banja Luka)*

This greater use of wood could lead to increased levels of deforestation, as the Gamos reports for Albania, Moldova and Kyrgyzstan also found (Scott et al, 2004).

We would use wood, but wood is expensive too. We would simply cut wood wherever it is possible. (boys, Tuzla)

In the econometric analyses, the larger the household, the more likely it was to seek wood from nearby sources. Perhaps unsurprisingly, rural households were more likely to suggest the use of wood as an alternative fuel than urban households (urban households were 71 percent in suggesting this strategy). Households with self-employed income were less likely to suggest this as a coping strategy and an increase in the number of incidences of illness that were not treated or investigated by a doctor made a household more likely to seek wood as an alternative fuel.

The last of these observations may suggest that there is a lack of understanding of the link between certain kinds of illness and the use of alternative fuels such as coal or fire wood. Moreover, there may be a link between the lack of use of professional medical

services and the willingness to use alternative sources of energy.

The econometric analyses suggest a slightly different picture of households who suggest that they might use coal as an alternative source. The rate of suggesting this as a strategy decreases significantly in households with female income earners (72 percent lower) and in households with self-employed income (54 percent lower).

Once again, where there are incidents of illness not treated by a doctor, the rate of suggesting this as a strategy increases (5.3 percent higher). The rate of suggesting this strategy is also increased with increased household employment of various types. Thus, where there are children who worked in the past year, or participated in field working, or as the level of household employment (as defined by the ILO) increases, the more likely is the response that the household will use coal as an alternative fuel. This observation may reflect the fact that households that use children as sources of income may be among the most vulnerable groups and would be most likely to substitute other sources for electricity in the face of price increases. Nevertheless, as mentioned above, households which draw income from female income earners or from self-employment were less likely to suggest the use of coal as an alternative fuel. This may correlate with the indicated relative high prices of coal that were not documented in the survey.

Reducing Other Expenditures

While survey respondents did not expect to cut down on general household expenditures or on their spending on children, the focus groups identified this as one of the most important areas of cost saving in the event of electricity price rises. The difference between the survey and focus groups in this regard may reflect the fact that the survey drew on a sample of all socio-economic groups in B&H while the focus groups concentrated on more disadvantaged groups. The most common areas where respondents expected to reduce expenditure were food, children's pocket money and adults' personal or social needs.

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Food

The expected responses involved cutting down on more nutritious food by buying cheaper food instead and making food at home rather than buying it.

We would save on everything that we don't need. For sure, there would be less meat, more potatoes etc. (father, Sanski Most)

We would buy fewer candies for children, less meat and fruit. (father, Zenica),

We will not buy bread in shops but will start making it at home. (mother, Teslic)

In the econometric analyses, respondents were asked whether they would reduce the time spent on cooking. The factors which made such a strategy more likely were: the numbers of children involved in field work, the number of children who did not engage in any sports or cultural activities within the past month, and the number of medical incidents not treated by a doctor. These factors seem to be consistent with the range of the coping strategies.

Children's Pocket Money and Activities

Although parents in the quantitative survey said they would not cut down on children's extracurricular activities, in the qualitative part of the research, parents identified children's 'luxuries' (non-essential spending) as an area where they would have to make savings.

I would not be able to give him money for some of his habits, for example, 2 KM for ice cream or Playstation games with his friends. (father, Mostar)

We would stop buying toys for kids. (father, Gradiska)

They would stop going to school by bus and would, instead, use a bicycle in summer. (father, Sanski Most)

The two of them (sons) practice karate and the little one (daughter) is dancing, I can pay for it for the time being. For her, I give 25 KM per month. I think that we would have to cut that down. (father, Mostar)

Some 200 children would not be able to resume current courses, sport hall and the Club premises where they spend their free time, watch TV, use playrooms, etc. (mothers and boys, Mihatovici refugee settlement)

Many families had already made such savings (e.g. girls from Gradiska and boys from Banja Luka said that they no longer received pocket money) and saw no scope for making further savings.

The quantitative analysis found no significance in a regression which looked at the strategy of cutting children's dancing or other instruction courses. This is clearly a very unpopular strategy but may simply reflect the numbers of children that are involved in such classes.

Reducing children's time spent on a computer was also found to be unpopular but the odds of suggesting this strategy was increased in households with chronically ill members or with households where children had worked in the last week or year. Households with child allowance were more likely to suggest reducing time at a computer than households without.

Similar factors influenced whether households suggested reducing time children spend watching television. Factors which increased the odds of suggesting this strategy were: children working in the last week, children paid for work in the last month, children participating in field work, the incidence of illness not seen by a doctor, and the numbers of household members with chronic illness.

Adults' Personal and Social Needs

Though some parents felt that children's needs were generally de-prioritised and would be first in line for savings, others identified areas where they could make personal sacrifices:

We would save on our clothes, shoes, food. (mothers from Banja Luka, Zavidovici, Prijedor)

We would go less to the hairdressers' and would stop dyeing our hair, for example. (mother, Teslic)

I have no idea what else I could deprive myself of, maybe cigarettes and coffee. (father, Sanski Most)

Some General Observations about Quantitative Analysis

The main econometric work involved a range of logistic estimations aimed at assessing the factors influ-

encing the choice of coping strategy. Some of these estimations have been discussed in the sections above in the context of the qualitative analysis. This section outlines some of the results that arose from the quantitative analysis that had no counterpart in the qualitative analysis.

In the regressions we used a dummy variable to pick out the poorest quintile of the income distribution. However, this variable was rarely significant.⁴⁴ We conclude that choices concerning coping strategies are not specific to the poor but are distributed across the population in complex ways. In particular, variables such as the existence of chronic illness, the existence of children's labour in a household, the use of doctors for illnesses are more important in determining the responses to a range of questions than being within the lowest quintile group.

We also used a variable to pick out urban households but once again, this was rarely significant.⁴⁵

Impacts of Response Strategies on Children

a) Time Use and Work

Currently, according to the quantitative survey, children aged 7-18 spend an average of five hours a day in school, two hours studying and over 3.2 hours helping with household chores. Electricity price increases would have several important consequences for children's time use. In particular, more children would be engaged in paid work, and others would take on more household work to enable their parents to earn more income. The implications for leisure time use are discussed in section e) below.

As discussed above, 10 percent of survey respondents expected that older children would need to find paid work.

Girls, in particular, also expected that they would have to do more household work:

Helping our parents - chores and similar things - around

the house also, while they are managing somehow. (girls, Zavidovici, Banja Luka, Prijedor).

Boys also noted that they would probably have to spend more time obtaining and cutting wood. As noted above, this work is likely also to become more labour-intensive than it was in the past, as families try to use electrical appliances less. Both boys and girls feared that these extra activities could affect their learning at school (FGs, Zavidovici, Bosanski Novi and Gradiska).

b) Education

Expenditure on Education

As the survey results confirm, most parents stated that they would try to protect spending on children's education above all: *They have to complete their education, even if I had to work harder and never come home from work. You have to have money for education. (father, Mostar)*

Some would buy educational supplies, such as textbooks, second hand⁴⁶. However, some interviews indicated that some particularly disadvantaged families (refugees, single parent families) might not be able to afford the costs of school education and their children might drop out. Another interviewee felt that his disabled son would be particularly affected as it would be impossible to continue to afford hearing aids for him.

Reduced Evening Study

Parents in Teslic, Mostar and a children's home staff in Banja Luka all felt it would be necessary to reduce use of electricity (lighting) in the evenings to keep bills down. This is one of the most common responses to increased electricity prices, with 31 percent of survey respondents stating that they would do this (see figure 5). Children would therefore have to study in the daytime, meaning reduced opportunities for leisure or socialising, or they would study less, which could affect their education.

44) There were only two exceptions. Poor households were less likely to propose reducing the number of rooms that were heated in their house during winter. They were also more likely than other households to delegate childcare to another household member in order to seek more work.

45) The exceptions here were in the use of wood as an alternative fuel which rural households were more likely to suggest, reduction of water use which was more likely to be suggested by urban households and reduction of expenditures on hygiene which was more likely to be suggested by rural households.

46) Responses in focus groups with fathers in Sanski Most, boys in Zenica and girls in Banja Luka.

IMPACTS AT HOUSEHOLD LEVEL

In addition, as noted above, children's education may be adversely affected by increased household duties and for a small proportion of children, paid work.

c) Health

A number of the strategies outlined by participants in response to electricity price increases may negatively affect health: reduced use of hot water, reduced heating, less frequent washing, greater use of solid fuels - particularly wood, and a shift to consuming less nutritious food. Some female respondents also observed that reduced use of electricity for water pumps could lead to toilets not flushing and sanitary problems.

Reduced use of hot water for washing and less frequent washing could cause an increase of louse infections, scabies, skin diseases, caries, and parasitic diseases (Majkic, 2007). Reduced heating may lead to increased respiratory infections, as could greater use of wood-burning stoves, particularly if ventilation is limited.

Poorer nutrition can increase children's risk of repeated illness (Majkic, 2007). This would have a number of consequences for both the children and their families. Some of the likely nutritional risks include anaemia (if children consume fewer iron-containing foods such as meat), thyroid deficiency (due to consuming cheaper, non-iodised salt), and other micronutrient deficiencies if people are consuming less fruit and vegetables. Obesity is another risk if families shift consumption to cheap calories (high in fats and sugars), with long-term cardiovascular risks. Obesity levels are already relatively high. The MICS3 survey indicates that 20.2 percent of children under five in B&H (23.3 percent in the RS and 17.4 percent in the FB&H) are already obese. An additional risk from families buying more lower price food is that some of this food may have passed 'sell-by' dates, increasing the risk of food poisoning.

In addition to reducing children's quality of life, more frequent illness could also impact on their education if they have to miss significant periods of school, and

thus their future earning prospects. It could also affect families' budgets if they have to buy additional medicines or pay for other health care costs, or if parents have to take time off work to care for sick children. The extra stress of increased economic pressures on families may also affect both children's and adults' physical and mental health. Since good health and nutrition in childhood may lay the foundations for a healthy future and ill-health in childhood may underlie future health problems, the long-term implications of worsening child or adult health status are significant.

As one of the health sector representatives interviewed noted, despite high levels of health insurance coverage,⁴⁷ families already cannot afford all the medicine they need and often delay treatment until diseases are advanced and costly to treat. Furthermore, as noted in section 3.3, if health care institutions are having to cut back on specialised diagnostic treatment for cost reasons, there could be a resurgence of previously eradicated diseases.

'In the 21st century diseases like tuberculosis reappeared here and we thought that they had been uprooted.'
(Health care institution, Teslic).

d) Access to Information and Entertainment

'There would be less listening to music, watching TV, playing video games and sitting until late in the evening.'
(father, Sanski Most)

Currently, surveyed children aged 7-18 in B&H watch an average of two hours of TV per day, while one third of children use a computer for an hour or more daily, and 10 percent access the Internet every day (Memic, 2007). 24-27 percent of households would attempt to reduce electricity bills by reducing TV watching. Another seven percent would reduce computer usage. This relatively small percentage reflects the fact that computer ownership is not particularly widespread in B&H (36 percent of households own one). Both adults and children also indicated that reducing the use of mobile phones and landlines, or even cancelling telephone

47) The CRIA survey showed that 94 percent of households are covered, with insignificant disparities by entity or rural/urban area. (Memic, 2007).

subscriptions would be another way to reduce costs.

We have not been using the telephone for years, except for the most urgent calls. (father, Mostar)

Furthermore, as noted in section 3.3 above, youth centres and other organisations that provide access to computing may reduce their working hours or increase user charges. All of these are likely to reduce children's (and adults') access to information. Parents participating in the focus groups were concerned about the implications of this.

It would affect children more, especially in terms of getting information. We would do anything to prevent that because we know how it is to live in the dark. (mother, Zavidovici)

e) Involvement in Organised Leisure Activities

The survey of children's time use showed that 7-18 year-olds in B&H have 'free time' (defined as some leisure activity such as reading, playing or listening to music) two to three times per week, and that one third of children participate in a sports activity every week (Memic, 2007). The combined effect of families needing to reduce spending and children having more household work to do, and less free time may be to reduce children's involvement in organised (and paid-for) leisure activities (sports, computer classes, attending youth centres, etc). This would particularly affect children in urban areas where such facilities are more common.

f) Children's and Young People's Safety

Children's safety may be put at risk by two other possible responses to increasing electricity prices: illegal connections and reduced street lighting.

Illegal Connections

Both adults and children taking part in the focus groups had heard of people making illegal electricity connections, but had varied opinions about how common it is and how feasible it is a response to rising

prices. Some respondents felt that illegal connections would quickly be detected and would cause the families concerned greater problems than high bills. Many respondents also considered illegal connections very risky because of the technical knowledge required and the inherent dangers of electricity.

Electricity kills; it is all dangerous. Somebody can get killed, a child for example. (father, Mostar)

There was one case where someone destroyed all appliances at home. (father, Gradiska)

Reduced Street Lighting

Though none of the municipality representatives stated that they would reduce street lighting in the event of higher electricity prices, having lived with limited street lighting during the war, this was a common concern of parents and older children. They felt it would lead to increases criminal activity and make life less safe for everybody.

They would have to come home at four O'clock in winter, and would be outside only during the daylight. Even now, without this increase, I often hear someone was attacked and robbed where there were no lights in the street, which is the real waiting point for the assaults. (father, Mostar)

Children would not have freedom of movement. (mothers, Banja Luka, Prijedor, Bosanski Novi)

Implications of 50 Percent Price Increases

Both adults and children felt that price increases of this scale would be completely unmanageable. They would mean an increase in median expenditure across B&H from 45 KM⁴⁸ to around 68 KM. Most children and adults felt that they already would have undertaken all possible economising measures and that the only option that remained would be to continue using electricity, but getting increasingly indebted to the electricity companies until they were disconnected. A few said that they would disconnect themselves.

The adults interviewed also predicted increased

48) Calculations based on CRIA household survey.

IMPACTS AT HOUSEHOLD LEVEL

social unrest with people protesting outside Elektroprivreda and government offices. Some also thought that the number of suicides or suicide attempts would increase.

Such an increase is not however untenable given that transitional European countries have experienced such magnitudes of energy price increases in recent years (see for example Javcak (2006) about the case of Slovakia where energy prices have risen on average 16.8 percent each year over the period 1997-2005).

CONCLUSIONS

The households surveyed are currently spending between 40 and 50KM per month on electricity and consider it essential for their well-being. From our survey, it is clear that households' main response to price increases would be to try to increase household income. Secondly, they would reduce their use of electrical appliances. Related to this, the use of other fuels, particularly wood, would be increased. Finally, they would cut other expenditures, including children's consumption of nutritious food, or educational expenditures (e.g. extra classes).

Our analysis suggests that households with children may respond to electricity price rises differently to households without children, and that these differences are more significant than households' socio-economic status. In particular, the preferred coping strategy of most households, namely to seek more adult employment, seems to be less popular the larger the number of children in the household, possibly reflecting difficulties in caring for children while adults are working. Around 10 percent of households also said that they would expect older children to seek employment, or to take on more domestic duties if adults were working more; the latter approach would have an im-

pact particularly on girls. Households that already use children's labour are more likely to choose other coping mechanisms such as substituting towards fossil fuels. Perhaps this is because there is little scope for extending employment within the household and alternative methods need to be sought.

Taken together, these coping strategies could have detrimental implications for children's health. The availability of hot water for washing, and the heating of rooms would probably be reduced, and some households mentioned using refrigerators and cookers less, which would impact on the quality and safety of food consumed. Reduced hot water and heating could lead to increases in skin diseases and respiratory diseases respectively. Nutritional problems, such as obesity might also increase as a result of households shifting to less nutritious, cheaper food. Any such outcomes would be exacerbated by health care institutions being forced to increase their fees, which would likely lead to reduced use of their services.

Children's access to information and thus educational outcomes might also be affected since reducing TV watching, going to bed earlier, and reducing expenditure on extracurricular activities were other likely household responses to increased prices. These responses were more common in the qualitative research than in the survey, perhaps reflecting the more disadvantaged sample for the qualitative research.

The households interviewed unanimously felt that price increases of around 50 percent would be completely unmanageable; around 16 percent of households would seek state support under such circumstances, sometimes even in the case of lower increases. This reinforces the need for financial assistance to ease the burden on poor families if electricity prices do rise substantially. Some options for this are discussed in section 6.



Indicators for Monitoring Impacts on Children

INDICATORS FOR MONITORING IMPACTS ON CHILDREN

WHY ARE INDICATORS NEEDED?

Analysing the effects of electricity price increases on children requires using the current situation as a baseline. This study is intended to provide a set of indicators which may be calculated now as a baseline. The CRIA research was designed to collect sufficient data to fill the gaps in existing regularly-collected data, such as MICS and the Household Budget Surveys. A certain period after electricity price increases (e.g. one year), it is envisaged that the CRIA survey will be repeated. By recalculating the indicators, an analysis of changes that have occurred since the price increase would be possible. Further qualitative research would be required to establish which changes occurred because of price increases and which are coincidental. It is also important to remember that many indicators are 'proxies' – they measure intermediate factors rather than final outcomes for children. However, this may make relating them to electricity price changes easier. It is also substantially less resource-intensive than attempting to collect data on outcome indicators for everyone.

RATIONALE FOR CHOICE OF INDICATORS

The following best-practice principles in the development of child poverty indicators are derived from Corak (2005) and Gordon et al (2003):

Content of Indicators

1. Make use of money-based indicators– the marketised and monetised nature of developed economies, such as B&H, provides a justification for money-based indicators. Also these can be compared based on regular nationally representative (or other surveys).
2. Measure children's material deprivation in relation to key goods and services directly. Indicators should be based in the CRC and, though varying from country to country, will include health, nutrition, housing and other goods and services necessary for children's development and social integration. These indicators should be few in number, rather than exhaustive.
3. Child poverty indicators should reflect established social norms, including children's social engagement.
4. Ensure that issues affecting children of all ages are reflected.
5. Ensure that indicators cover a wide range of areas of well-being, i.e. they do not overly concentrate on one or two areas.
6. Anticipate the future and provide baseline data for future trends.

TABLE 11: ESSENTIAL INDICATORS - EXISTING DATA SOURCES

Issue	Indicators	Comments	Source
Education	- Average length of schooling day - School performance - Use of electricity dependent teaching aids (TVs, videos, etc.)		- School records - Data from the B&H agencies for education standards and assessment - School records
School attendance	- Overall enrolment in specified age groups - Absenteeism: rate of non-attendance of school children at school within specified period	Top age group most relevant as this is when children are most likely to drop out for work	- School records, - Official statistics - School records
Receipt of social assistance/ discounted electricity	Proportion of households with children in lowest two quintiles receiving cash benefits/assistance		Centres of Social Work records

INDICATORS FOR MONITORING IMPACTS ON CHILDREN

Data Requirements

7. Measure issues where there is complete or very high data coverage of the population; data collection procedures should be rigorous and not change over time.
8. Data should be available for different population subgroups.

Other

9. Indicators need to be monitored and reviewed regularly.
10. They should be readily understood by the public.
11. They should have the same meaning in different contexts and over time.

Additionally, the data needs to be readily available, where possible from surveys that are conducted regularly and, preferably not dependent on international organisations for funding.

The proposed CRIA indicators draw on these principles, the CRIA conceptual framework and the findings of the CRIA survey and qualitative research. Given the importance of these indicators being easily monitored, we suggest a short list of essential indicators and a long list of desirable ones.

TABLE 12: ESSENTIAL INDICATORS - OTHER DATA SOURCES

Issues	Indicators	Comments	Source
Child Labour	<ul style="list-style-type: none"> - Proportion of girls/boys in specified age range who have worked outside the family in previous week - Proportion of boys/girls who have spent a certain period of time in unpaid domestic chores in previous week 	May be useful to concentrate on 10-14 and 15-17 age ranges, as CRIA research suggests that mainly older children will be involved in child labour	MICS/BHS and LFS
Free Time Use	<ul style="list-style-type: none"> - Average daily hours of TV usage - Proportion of children aged 6-18 using leisure facilities (e.g. sports clubs, classes) - Average daily time spent studying at home 	Each child is a separate unit for analysis	CRIA free time module for TV use and home-based study. Leisure use could be verified with leisure facilities' own records, though these will not be as specific as CRIA survey data.
Exposure to air pollutants/use of alternative energy sources	<ul style="list-style-type: none"> - Proportion of children 0-18 living in households which use coal or wood fuels as the main source of heating or cooking - Average hours of usage of wood and fossil fuel within households 	Derived from WHO project on children's environmental health	MICS, CRIA survey
Children's health	<ul style="list-style-type: none"> - Incidence of short-term infections (colds etc) - Incidence of chronic diseases (respiratory) - Incidence of nutritional problems (e.g. anaemia) - Incidence of fire-related accidents (all among children aged 0-18) 	These indicators can be calculated as the proportion of households that are affected by these incidents	MICS. Medical records. CRIA. MoH data.
Energy Affordability	-Proportion of households whose per-capita energy consumption exceeds the subsistence energy needs at current prices		BHS, MICS

INDICATORS FOR MONITORING IMPACTS ON CHILDREN

TABLE 13: DESIRABLE INDICATORS

Issue	Indicators	Comments	Source
Education	- Proportion of household budget spent on school/education related items for school age children (of different age groups). - Household budget spent on university/college students		CRIA/ LSMS/ HBS
Expenditures on Health Care	- Proportion of budget spent on health related items (medicines, health-related travel, and health care payments) for household as a whole and for children.		MICS/ CRIA/HBS
Use of hot water	Average number of hours water heated per day		CRIA survey

INDICATORS FOR THE ELECTRICITY SECTOR REFORMS

It would be usual in the context of electricity sector reforms to include indicators of coverage and reliability of the energy source. However in the case of B&H, coverage (as is confirmed by the quantitative survey) is virtually complete and there is perhaps little to be gained from such an indicator. Similarly, there does not

seem to be a problem of discontinuous supply. The proposed indicators below are therefore more directly related to monetary and health issues or are directly related to children's well-being.

The essential indicators, listed in tables 11, 12 and 13, are separated into those which may be formed from existing data sources within B&H and those which cannot. There is then a further list of desirable indicators. Where possible, indicators should be constructed for each income quintile.



Mitigating Policies

MITIGATING POLICIES

Recommendations Emerging from the CRIA Study

The main recommendations emerging from this study relate to two areas:

- reduced tariffs for public service providers
- poverty reducing measures to cushion the impact of reforms on vulnerable households

This section will discuss the second set of measures in the most detail.

1. Reduced Tariffs for Public Service Providers.

Public institutions and NGOs working with children currently struggle to pay their electricity bills, which are charged at the higher commercial rate. They suggested that they should pay at the household rate, or should be exempt from price increases. Tariffs could be re-scaled so that prices are not higher at the times of year when the need is greatest. The cost implications and possible funding sources for this would need investigating, but it is clear that many public services consider increased utility bills as likely to compromise the quality of the service they are able to offer.

2. Poverty Reduction/Income Enhancement

As the World Bank's analysis of potential electricity reforms in B&H points out, socially vulnerable consumers face not only the problem of a future price increase, but also the present problem of not being able to pay the current price of electricity. They have already had to cope with price increases related to the introduction of VAT in early 2006 and with concurrent, though modest, price increases in electricity tariffs.

In their analysis of options for cushioning the effects of tariff reform on disadvantaged households in Slovakia, Voll and Juris (2002) identify the following:

- subsidies to reduce tariffs faced by poor people
- income support measures to facilitate paying their

bills

- support for energy conservation measures to reduce consumption

SUBSIDIES ON TARIFFS

These could include lifeline tariffs, targeted lifeline tariffs and specialized discounted tariffs.

Lifeline tariffs involve providing for a block of electricity consumption, calculated to enable people to meet their basic needs, at a discounted rate. Any use of electricity over the 'lifeline' block is charged at a higher rate (Voll and Juris, 2002). World Bank analysis for B&H suggests that 200 kWh per month would enable people to meet basic electricity-related needs (World Bank, 2004),⁴⁹ given that average household consumption is 291 kWh per month.

Targeted lifeline tariffs involve restricting discounted basic needs consumption to socially vulnerable groups, typically people living on low incomes.

Specialised discounted tariffs usually involve charging lower tariffs for electricity use at certain non-peak times (e.g. late night). This is already in operation and widely known about in B&H, with many respondents stating that they already try to use electricity at the weekend when it is cheaper. They can also include lower tariffs for customers who agreed to an interrupted service, though this is less relevant for B&H.

INCOME SUPPORT MEASURES

These could take the form of:

Earmarked cash transfers to assist vulnerable consumers to pay electricity bills. World Bank (2004) sug-

⁴⁹They suggest that a basic needs package might involve 100-120 kWh per month in most of the country but more in the area covered by EPH-ZHB where the possibilities of using alternative fuel sources are more limited.

gests such a mechanism, which would be administered by the Elektroprivredas and take the form of discounts on electricity bills for low-income customers. Centres for Social Work would be responsible for developing and providing lists of eligible customers to the Elektroprivredas.

General income support to help cushion the overall impact of price increases. This would take the form of increasing the amount of social assistance payments to low income families or increasing the number of people eligible for it. Eligibility would be determined by Centres of Social Work.

SUPPORT FOR ENERGY CONSERVATION MEASURES

These might include grants to help people insulate better or use more energy efficient appliances. Voll and Juris (2002) warn that these grants are often given to better off people. However, given that many of the service providers interviewed for this study identified the costs of shifting fuel source as prohibitive, there may be a case for subsidies to help such organizations shift to more efficient, cheaper or less polluting energy sources.

WORLD BANK (2004) RECOMMENDATIONS

In 2004 the World Bank conducted a study of options for cushioning vulnerable customers who are currently, or might in the future, have difficulty paying electricity bills. This involved projections of the proportion of the population living in poverty in each of the areas covered by the electricity companies in 2012, an analysis of basic needs electricity consumption, of the level of subsidy needed to enable poor households to access this basic electricity consumption package, and some financing options for these measures.

The World Bank study recommends earmarked cash

transfers and life-line tariffs for the most vulnerable consumers. Earmarked cash transfers have been used as a protection mechanism in the Republika Srpska. Along with certain modifications that would be made by introducing the life-line tariff for the initial block of electricity, they could serve to achieve the protection objective. Specifically, the World Bank suggests:

Essentially, the combination of these two mechanisms would be a subsidy of the initial block of electricity (for instance, 100-200 kWh) by means of earmarked cash transfers; this amount of electricity would be free or partially subsidized for socially vulnerable consumers, while the costs of the power supply companies for this amount of electricity would be compensated from other sources.

It suggests the threshold for qualifying for these discounts should be an income of KM 62.25 per household member (at 2004 prices), and that they should be financed from entity budgets. If this is not possible, 'the price of electricity for a selected consumer group should be increased in order to accumulate funds for subsidy purposes'. As poverty rates fall, and the volume of customers eligible for discounts increases, the proportion of consumption subsidized could be increased.

Our analysis suggests that earmarked transfers and life-line tariffs remain the most focussed policies for the types of vulnerability that might exist. However, our analysis finds that households with children are particularly vulnerable to substitution strategies that may impact on health or long-term employment.

The World Bank's recommendations are based in terms of income per household member, and provided this calculation was made with regard to all children in the household, it should be able to effectively target the most vulnerable households.

MITIGATING POLICIES

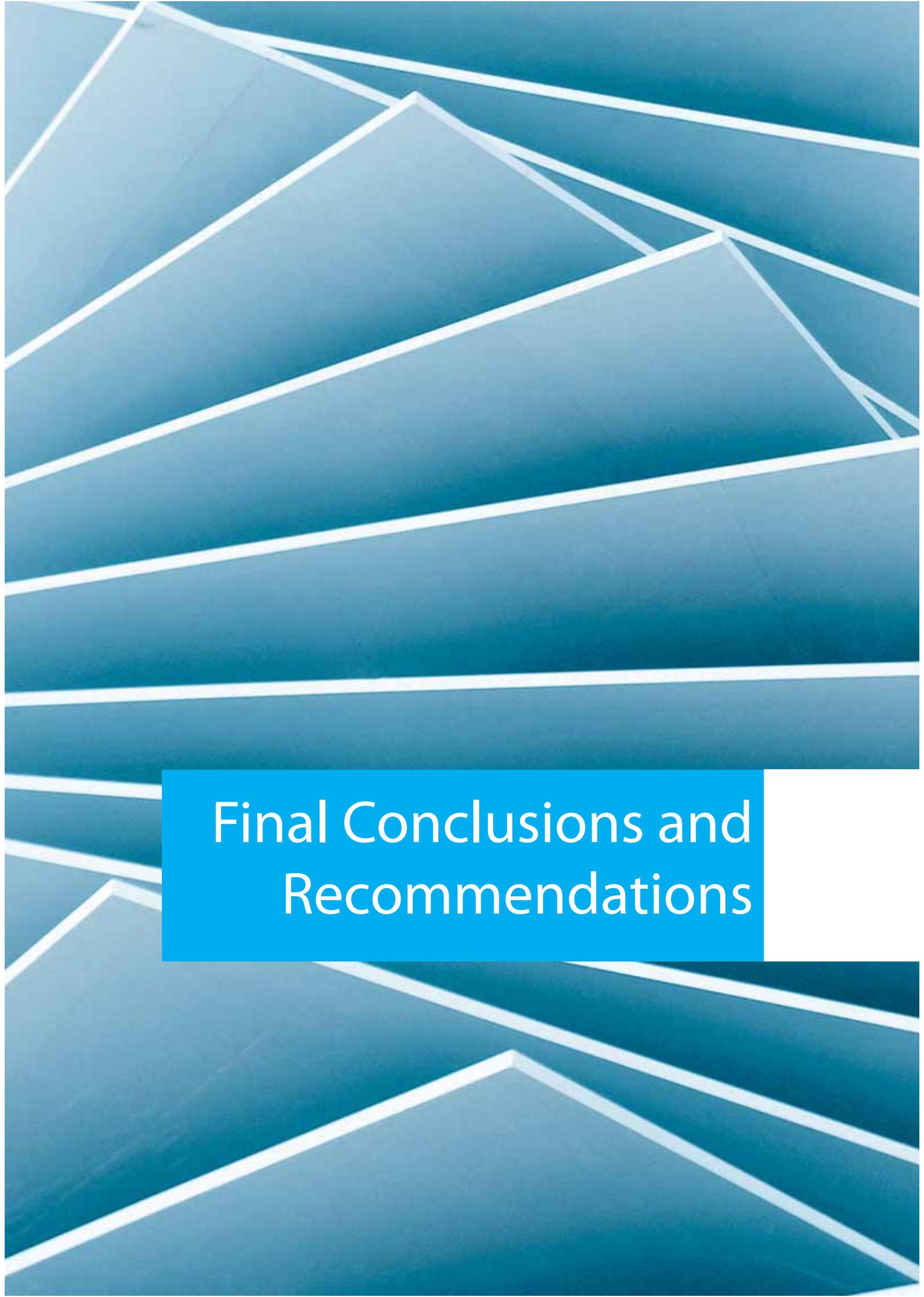
However, particular attention should be paid to households with children as particularly vulnerable.

CONSTRAINTS ON MITIGATION

The current fiscal situation in B&H places a considerable constraint on the introduction of any new mitigation measure funded through the government. The exceptional circumstances of B&H, in particular the war in 1992-1995, have meant a large and persisting budget commitment to war veterans and their families. While

this has some effect on poverty, the evidence suggests that such measures are not well targeted to alleviating the circumstances of the poorest households⁵⁰. In addition, social security contribution rates are internationally high. This does not leave much scope for further increases in the contributory burden and in itself leads to the informalisation of economic activity. These constraints imply that mitigatory measures need to be carefully targeted to the most vulnerable households and public services.

⁵⁰ The World Bank PIER report (2006) p86 suggests that social transfers reach only about a quarter of the poor.



Final Conclusions and Recommendations

FINAL CONCLUSIONS AND RECOMMENDATIONS

LIKELY IMPACTS OF ELECTRICITY PRICE INCREASES ON CHILDREN AND WAYS TO MITIGATE THEM

Education

The vast majority of households indicated that they would prioritise expenditure on children's education and would seek to safeguard this in almost all circumstances. However, the interviews with education service-providers suggest that educational services are likely to be strongly affected, regardless of parents' efforts to support their children's education, particularly at school level. Even with a 15 percent price increase, educational institutions envisaged having to make cuts in the quality of their services, in particular reducing the use of modern, electricity-consuming teaching aids. With bigger increases, they would reduce teaching time or cut staff. In other words, electricity price increases towards cost-recovery levels would be likely to have significant negative impacts on children's education at all levels from kindergarten through to secondary school.

It is also notable that though the majority of parents said that they would try to ensure their children's school needs were met, the qualitative interviews showed that some of the most vulnerable families (e.g. some single parents) would struggle to do this.

Furthermore, though parents would try to protect schooling related spending, the qualitative interviews showed that many would struggle in two other areas related to education: financing extra-curricular activities in sport, languages or computing for example; and in financing children's university education. This suggests that as well as diminishing children's quality of life and range of opportunities, electricity price increases, coming on top of VAT and other rising costs, could contribute to diminishing overall levels of human capital (skills and knowledge) in B&H. And, as noted previously, there is an existing structural problem in the economy in that too few children are being educated sufficiently to meet the needs of employers. This problem is likely to be exacerbated by electricity price increases.

Children participating in the CRIA study identified support for education as one of their priorities and recommended scholarships and textbook subsidies for disadvantaged children.

Our analysis suggests that education may be most affected by cuts that service providers are forced to make in order to pay bills, and that there is no clear case for household educational subsidies related to electricity price reforms. The case for broader income support or for electricity discounts for poor households is much stronger.

Health

The CRIA quantitative and qualitative analysis indicates that electricity price increases towards cost-recovery levels could have significant negative health consequences, stemming from less use of hot water, consumption of less nutritious food, greater use of wood fuel for heating and cooking, and forced economies among health service providers, particularly for more specialised services.

These potential impacts are consistent with other studies from the region, such as the Gamos studies from Albania, Moldova and Kyrgyzstan (Scott et al, 2004), which consistently indicate negative impacts on health as one of the most significant consequences of electricity sector reforms. These studies concentrated on poor urban people, but our findings for B&H suggest that negative health effects are likely in both rural and urban areas.

Ill-health in childhood can have significant long-term consequences, for individuals' health, for children's educational prospects, and thus their long-term employment prospects. Worsening adult health may mean increased poverty as families lose employment income and face higher medicine costs. The financial implications for the state are also a matter of concern; high levels of morbidity have significant costs for the public sector. There is some evidence that better health can underlie poverty reduction and improved economic growth.

Especially Vulnerable Children/Children in Institutional Placement

Although the overall numbers of children affected are relatively small (under 1500), the care, protection and quality of life of this particularly vulnerable group of children is likely to be compromised by savings in electricity use. The consequences will be reduced lighting for evening study and activities, reduced heating, less frequent washing, possible switch in food expenditures, and potential reductions in staffing.

MEASURES TO MITIGATE ADVERSE SOCIAL CONSEQUENCES OF PRICE INCREASES

These likely consequences of electricity price increases towards cost recovery levels suggest that some mitigating measures are needed at household and institutional level. These might include:

- 1. Lower tariffs for public sector service providers and community organisations/NGOs as service providers.** Currently these organisations pay 'industrial' or 'business' tariffs set at higher rates than those applied to residential customers. A new lower tariff for public service organisations between industrial and household tariffs could be created, or they could be moved onto residential tariffs. Alternatively they could be exempt from any further price increases. These options would all need further costing.
- 2. Life-line tariffs and electricity discounts for vulnerable households.** Life-line tariffs remain one of the most attractive mitigation measures given the patterns of coping found in this study. They involve fewer general effects on the economy of the type that might be expected by income based measures since they affect the tariffs and therefore the consumption of electricity directly. In addition, they require relatively little by way of information about the target groups since in the most general case of such tariffs, consumers select themselves as vulnerable by consuming only at the life-line tariff rate. Life-line tariffs may be targeted more precisely but the overall cost of administration and the efficiency of such tariffs make them the

preferred option in B&H. As noted previously, the World Bank in their 2004 study also recommend earmarked cash transfers to work in conjunction with lifeline tariffs. Depending on the level of the lifeline tariffs, such measures would enable a more directed policy to address specific needs (e.g. Roma groups or households with three or more children) whereas the lifeline tariff measures are more general.

METHODOLOGICAL RECOMMENDATIONS FOR THE REPLICATION OF A CHILD RIGHTS IMPACT ANALYSIS (CRIA)

The combination of qualitative and quantitative approaches has been vital in producing a nuanced picture of the potential impacts of electricity sector reforms. Quantitative analysis has indicated the significance of observations made in the qualitative research and vice-versa.

Quantitative Component

The use of an existing sample base (MICS3) from which to draw a smaller sample proved to be both cost effective and statistically robust given that the results from the survey could be checked against the larger study. Where possible this is an approach we would recommend.

Qualitative Component

The approach of asking children about sensitive issues through discussions of scenarios, rather than direct questioning worked well, and could usefully be replicated in other CRIAs. Direct questioning of adults around poverty and electricity reform issues was not problematic and could be repeated in other analyses.

Desirable Additional Research or Analysis

In addition to the qualitative interviews with institutional service providers, it would be useful to draw more extensively on their own official records of electricity expenditure, or on the electricity companies'

FINAL CONCLUSIONS AND RECOMMENDATIONS

records. This would enable triangulation of qualitative and quantitative responses, which proved invaluable in the household survey.

A more detailed quantitative analysis could take a number of forms. One direction would be a willingness to fund a survey which may enable cross-sectional demand functions for electricity to be estimated. This would allow a more complete picture to emerge of elasticities of demand in the sector and possible responses to price changes. The tariff structures in B&H have been relatively static over the past few years and this made it impossible to identify demand relationships in the current study. Another avenue would be a more general economic analysis estimating the effects on the supply side (employment and productivity changes, etc.), which would have second level effects on the economy. The data requirements for this type of analysis are however fairly large and the uncertainty of the exact arrangements for restructuring in the electricity industry made it difficult to model these general effects in the current study.

Capacity Issues

This CRIA benefited immensely from the involvement of two experienced Bosnian researchers - one a

specialist in statistical analysis and the other in qualitative methodology and work with children. Strong linkages with the FB&H Statistics Office and DEP B&H meant that their usual research capacity could be drawn on for the quantitative survey, which in turn meant that CRIA was able to draw on, and contribute to, existing capacity. With the qualitative component, the decision to work through UNICEF's partner NGOs increased the acceptability of the study in research locations and ensured that, for the most part, vulnerable groups were properly included. However, it meant that certain parts of the country were under-covered. While this approach helped develop research capacity in NGOs, a more systematic approach would be needed to combine the goals of both good-quality research and capacity building.

Replication of CRIAs in other sectors or contexts may have less existing technical capacity to draw on. They may also have less time if they are undertaken in the context of policy reforms with rapid implementation. We suggest the following measures to help address these problems:

- Use readily available data e.g. MICS, HBS, LSMS, DHS etc. for as much analysis as possible
- A smaller qualitative component, covering few locations in more depth may be as insightful as an attempt to cover the whole country.

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Appendix 1

The following results are based on logistic regressions undertaken in SPSS. The dependent variables in each case are binary variables which respondents answered with a yes (coded 1) or no (coded 0).

The data for the econometric regressions included only those households with children under 18.

Table 1/Part 1

	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Urban household	-0,02	0,96	-0,84	-0,20	0,71	0,01	-1,14	0,01	-0,88	0,06	0,32	0,60
Good housing conditions	-0,59	0,12	-0,31	0,71	0,06	0,18	0,67	0,18	0,67	0,44	0,91	0,28
Head of household male	-0,34	0,48	22,41	1,00	0,71	0,13	0,28	0,00	0,40	0,39	0,75	0,71
Age of head of household	-0,02	0,85	-0,09	0,71	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Age of head of household^2	0,00	0,92	0,00	0,39	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Poor household	-0,41	0,40	0,36	0,75	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
University degree of head of HH	0,16	0,76	0,29	0,71	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Head of HH without any diploma	0,35	0,57	-19,81	1,00	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Head of HH with primary sch. Diploma	-0,15	0,69	-1,52	0,11	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
No. of males in HH with income	0,11	0,51	-2,55	0,02	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
No. of females in HH with income	0,0	0,98	-1,36	0,14	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Income from the work in own company ,own farmland or from self-employment from independent periodical jobs	0,10	0,54	0,80	0,08	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Child allowance	0,01	0,98	2,18	0,02	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Allowance for work disability	0,62	0,01	-1,83	0,09	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to find any kind of job for unemployed household member	0,01	0,98	-0,90	0,02	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to bring in more coal leftovers from the nearby coal mine	-2,12	0,18	-0,12	0,91	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to get more fire wood from the nearby forest	-1,25	0,00	0,54	0,16	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to employ children at neighbours to help in house and farming chores such as cattle feeding	0,24	0,75	-0,46	0,64	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Cut the language, dancing, instruction courses for children	27,36	1,00	7,93	1,00	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Ask for help/assistance from the centre for social work	0,43	0,35	-2,05	0,00	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Reduce the number of rooms you heat during the winter period	-0,21	0,51	0,18	0,67	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Go to bed earlier in order to save electric energy and other energy sources	-1,14	0,01	-0,88	0,06	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Reduce time children spend at the computer	-0,84	-0,20	-0,31	0,71	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Reduce time children spend watching TV	-0,02	0,96	-0,59	0,12	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to employ children at neighbours to help in house and farming chores such as cattle feeding	0,24	0,75	-0,46	0,64	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to get more fire wood from the nearby forest	-1,25	0,00	0,54	0,16	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to bring in more coal leftovers from the nearby coal mine	-2,12	0,18	-0,12	0,91	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Try to find any kind of job for unemployed household member	0,01	0,98	-0,90	0,02	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Child allowance	0,01	0,98	2,18	0,02	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Allowance for work disability	0,62	0,01	-1,83	0,09	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Income from the work in own company ,own farmland or from self-employment from independent periodical jobs	0,10	0,54	0,80	0,08	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
No. of females in HH with income	0,0	0,98	-1,36	0,14	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
No. of males in HH with income	0,11	0,51	-2,55	0,02	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Head of HH with primary sch. Diploma	-0,15	0,69	-1,52	0,11	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Head of HH without any diploma	0,35	0,57	-19,81	1,00	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
University degree of head of HH	0,16	0,76	0,29	0,71	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Poor household	-0,41	0,40	0,36	0,75	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Age of head of household	-0,02	0,85	-0,09	0,71	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Age of head of household^2	0,00	0,92	0,00	0,39	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Good housing conditions	-0,59	0,12	-0,31	0,71	0,00	0,00	0,40	0,00	0,39	0,75	0,71	0,00
Urban household	-0,02	0,96	-0,84	-0,20	0,71	0,01	-1,14	0,01	-0,88	0,06	0,32	0,60

PRIOLOG 1 / Tabela 2-2

	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Give child to be cared for by neighbours or other members of the family																		
Give child to be cared for by a member of extended family																		
Delegate child care to a household member to be able to look for work																		
Reduce usage of electric equipment, drills, grinder, etc.																		
Reduce time necessary for cooking																		
Reduce time spend using the electric light in the house																		
Reduce watching TV																		
Iron clothes only in exceptional cases																		
Reduce the use of the vacuum cleaner																		
Reduce the use of the washing machine																		
Reduce expenses on hygiene																		
Reduce water consumption in the household																		
Try to find any job for your children																		
Getting money from family or pension/other income from abroad	-0,18	0,57	-0,16	0,43	0,35	0,10	-0,07	0,68	-0,08	0,68	-0,08	0,68	-0,02	0,91	-0,17	0,55	0,17	0,37
No. of children 6 to 15	-1,00	0,08	-0,22	0,54	-0,14	0,73	-0,24	0,47	0,32	0,34	0,32	0,34	-0,51	0,15	0,75	0,14	-0,18	0,60
No. of children under 5	-1,08	0,04	-0,32	0,32	-0,52	0,15	-0,11	0,71	0,44	0,17	0,44	0,17	-0,21	0,51	0,03	0,95	-0,03	0,93
No. of children 16 to 18	0,43	0,46	-0,79	0,10	0,51	0,29	-0,23	0,57	0,41	0,32	0,41	0,32	-0,41	0,34	0,60	0,32	-0,70	0,10
No. of HH members with chronic illness	-0,21	0,47	0,14	0,44	0,09	0,65	0,11	0,49	0,27	0,11	0,27	0,11	0,34	0,05	0,28	0,28	0,00	0,99
No. of medical visit that was not performed	-0,29	0,42	0,26	0,17	0,13	0,50	-0,06	0,72	0,43	0,02	0,43	0,02	1,08	0,00	0,84	0,00	0,13	0,48
No. of ILO employed in HH	-0,90	0,00	-0,16	0,43	-0,12	0,63	-0,05	0,79	-0,01	0,98	-0,01	0,98	0,07	0,67	0,13	0,64	0,19	0,30
No. child that worked last week	0,61	0,34	-0,15	0,77	0,27	0,59	0,50	0,21	0,71	0,09	0,71	0,09	0,59	0,16	0,81	0,15	1,22	0,00
No. child that worked last year	0,70	0,22	0,13	0,77	-1,20	0,09	-0,21	0,58	0,29	0,41	0,29	0,41	0,65	0,07	0,56	0,31	-0,29	0,47
No. child paid for the work last month	-15,48	1,00	0,80	0,20	0,69	0,32	0,42	0,50	0,98	0,17	0,98	0,17	1,04	0,18	0,57	0,48	-0,75	0,33
No. of child participated in washing	1,72	0,34	-0,34	0,83	1,02	0,47	-0,76	0,58	-1,83	0,27	-1,83	0,27	0,00	1,00	-1,00	0,63	-1,31	0,38
No. of child participated in field working	-0,14	0,93	1,37	0,28	2,75	0,03	0,72	0,51	2,90	0,02	2,90	0,02	2,35	0,06	3,39	0,01	2,34	0,01
No. of children without any cultural or sport activity	0,46	0,30	0,17	0,56	0,36	0,27	-0,06	0,83	0,26	0,32	0,26	0,32	-0,13	0,65	0,96	0,02	-0,33	0,24
Size of household	-0,16	0,78	0,18	0,62	0,14	0,73	0,11	0,74	0,10	0,75	0,10	0,75	0,41	0,23	-0,83	0,11	0,18	0,61
Constant	-12,16	0,02	-5,85	0,02	-2,78	0,28	-2,44	0,25	-4,04	0,04	-4,04	0,04	-0,69	0,75	-14,70	0,01	-5,88	0,01

Bosnia and Herzegovina, 2007.

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