KEY ISSUES AND RECOMMENDATIONS FOR CONSUMER PROTECTION: Affordability, Social Protection, and Public Participation in Urban Water Sector Reform in Eastern Europe, Caucasus and Central Asia

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EXECUTIVE SUMMARY

Background

This report analyses the social issues arising during municipal water sector reform, particularly those triggered by increasing charges for water supply and wastewater services, and provides national and local decision-makers with practical recommendations to address these problems.

They were developed for the Group of Senior Officials on Urban Water Sector Reform in Eastern Europe, Caucasus and Central Asia (EECCA), with the support of the OECD/EAP Task Force Secretariat.

The recommendations in this report are based on EECCA statistical data and information about the performance of the municipal water sector, income of the population, social protection measures to support water consumption by households, and analysis of public participation practices in the sector. The experience of OECD and other countries is reflected in the recommendations. This Executive Summary presents the main findings of the analysis as well as the key recommendations.

Affordability of Water Services for Households

Water charges generally represent a relatively small share of household expenditure. However, pricing of water is a politicised and emotional issue in many regions, including EECCA. There is a lot of political resistance, especially in national and local elected bodies, to increasing water prices in EECCA, which presents a serious obstacle to sector reform.

Water services were traditionally considered as social services and were provided at very low prices; thus the consumers in EECCA have problems accepting a rapid increase of prices, especially in a situation of deteriorating service quality. In Ukraine, for example, during the period of 1992-2001, communal services water prices have risen about 16 times faster than prices for other consumer goods and services, while the quality of drinking water and of water services has clearly decreased.

The situation in the region is aggravated by widespread poverty and growing disparities in income distribution, which reduces the ability of the population in general, and of specific groups in particular, to pay for these vital services.

If water becomes too expensive, consumers may reduce their water consumption below the socially optimal level, causing negative health externalities (such as an increase in water-related diseases), or they simply may be unable to pay for it. Indeed, the level of non-payment in most EECCA countries is alarming. In Armenia, for example, total residential debt to the water utility in the capital city of Yerevan reached AMD (Dram) 21 billion ($37.85 million) in 2002, compared to an annual cost of services of AMD 6 billion.

At the same time, the political debate about the social unacceptability of high charges for water remains largely speculative, as there is no established practice in the EECCA countries to estimate the actual water affordability of households. There are no standardised methodologies or legal requirements to carry out such studies at the national or local level.

Willingness to Pay for Better Services

A few studies, which have been undertaken by International Financing Institutions (IFIs) and donor agencies to measure willingness to pay (WTP) for water in the region, suggest that most consumers would be willing to pay higher charges for water services of higher quality, including the quality of the water and the reliability of the service. WTP studies carried out in Lutsk (Ukraine) showed that 22% of households would be prepared to accept a 10% tariff increase. It should be noted however, that the willingness to pay is not universal among various groups of consumers: it was higher in families with higher levels of income and with children, while pensioners were less prepared to accept tariff increases.

The *method of stated preferences* could be recommended for the analysis of the willingness of households to pay more for better services in EECCA countries. This method aims to identify the share of households who are willing to pay more for better services. The method of stated preference is based on customer surveys, when individual households are interviewed in order to find out their attitudes to proposed development scenarios.

This analysis allows determining an appropriate quality-price balance for water supply and wastewater services, as well as the most important improvements required by the consumers. The results could be useful for designing concrete

investment projects and to provide an analytical base for the tariff adjustment policy process.

At the same time, available statistics do not provide sufficient data for the assessment of stated preferences, and a special survey would have to be undertaken to support such an analysis. This method requires considerable time and other resources. Therefore, its application in EECCA is limited, probably to the most significant investment projects.

Ability to Pay at the Country Level

Even when households declare their willingness to pay higher prices for better services, their ability to pay may not be sufficient. In order to assess the economic ability of households to pay for water services in the EECCA region, the report compares current average household water charges with average household income/expenditures. The highest levels are reported for Moldova and Ukraine – 4.48% and 3.07% of household expenses for water respectively, and the lowest – in Turkmenistan and Belarus – zero (because there are no water charges for households) and 0.62%, respectively. Among the OECD countries, in comparison, the lowest levels are reported for Ireland and the USA (zero and 0.5 % respectively) and highest in Hungary and Poland (between 2.1% and 2.4%).

Results demonstrate that even at the present low cost-recovery ratio, nearly all the average or macro affordability figures for EECCA countries are equal to or higher than virtually all the OECD equivalents. In the case of Moldova, the level of household expenses for water services is already higher than the “rule of thumb” of 4% often used by IFIs for their investment projects. When the cost recovery rate goes up, the relative share of water expenses may become extremely high and a large share of households may face a serious affordability problem.

National governments should regularly measure these macro affordability indicators in order to monitor sector reform. Changes in macro affordability figures for a country as a whole may, under certain circumstances, give an indication about whether affordability is worsening or getting easier. Macro affordability analysis may also help national or local governments to establish a target maximum level of water expenses within household expenses, or an “affordability criterion.” Macro affordability indicators can also be useful for international comparison.

Affordability Criterion

To judge whether a service is affordable or not, it seems convenient to have an *affordability criterion*. Such a criterion could be set at the maximum income or expenditure share that households, more specifically poor households, are able to spend on the water and wastewater services without jeopardising their consumption of other essential goods and services.

It should be stated that there is no universal or international criterion of affordability, as it is impossible to have one measure that would satisfy all countries and regions with their diverse local conditions. In practice, there are many indicators and judgements on this subject. Water supply and sanitation charges in the OECD countries usually do not exceed 1.5% of the household expenditures, and some experts believe that these services could be considered very expensive at 3% to 5% level. In assessing small water supply systems' compliance costs in meeting proposed new drinking water quality regulations, the United States Environmental Protection Agency (USEPA) stipulates that a utility's median household water and wastewater bill should not exceed 2.5% of median household income. Another criterion is often used by IFIs, including the World Bank and the EBRD: average water and wastewater charges must not exceed 4% of average household income.

This report does not propose a specific affordability criterion for the EECCA region or for selected countries. The task requires a thorough and comprehensive analysis based on empirical data, and should be addressed at the level of specific countries.

Ability to Pay for Selected Groups of Consumers

Macro affordability figures should be treated with caution, as they ignore potentially important differences for various income groups, and do not take account of difference in local costs of service or the proportion of these costs covered by tariffs. For example, in Armenia and the Kyrgyz Republic, the levels of cost recovery are 20% and 48% respectively, and average water charges burden is 2.75 and 2.22%. However, at current prices, 18.5% and 9.7% of households already pay more than 4% of their total expenses for water and sanitation services. Micro affordability analysis in the city of Khmelnitski (Ukraine) has shown that 22% of households already pay more than 4% of their income for water services. If the price of water increased by 50%, the share of households in this category would reach 43%.

Identification of income groups or households with "high" expenses for water can help to measure the "depth" of the problem and the share of population for

whom the price of water may be reaching the limits of affordability, however those limits are defined. This, in turn, provides decision-makers at the national level with a basis for both water pricing policy and for assessing financing needs of social assistance programmes. Equally, identification of the levels of water expenses in a selected city can help local authorities to establish water tariffs at an appropriate level and design local social assistance programmes.

Micro-affordability analysis involves a breakdown of macro-affordability by specific groups of consumers. The most appropriate methodologies for measuring micro affordability for EECCA are the following: (i) assessing the different levels of water expenses for groups of households with different incomes across the income distribution and (ii) assessing the level of water expenses in a selected city or among the consumers of a selected water utility.

The first of these – *estimating the water charges burden on households across the income distribution as a percentage of household income* (or, where the informal sector is large, of total household expenditures) can be carried out only if detailed data on household water expenditures can be obtained from a nation-wide sample survey of household incomes and expenditures. Such an analysis is helpful in determining the share of households who have to spend "too much" on water, e.g. more than the adopted level. This will help to measure the scope of the problem, and the results could be used for designing measures to protect households with low affordability.

Second, *an analysis of households' actual water charges burden at the city or utility level* requires information, which can be obtained through a special survey of these residential customers. This method is most helpful for developing and approving new tariffs. Generally speaking, if tariffs are set at the local level, policy makers should be informed of the burden of expenditures for water not only in the country as a whole, but more importantly, in the city where the tariffs are revised. Therefore, the service affordability analysis should focus on a particular group of residential customers, or else results of the analysis will not be quite as reliable or indicative.

It should be noted that the amounts billed by water utilities for their services, and not the actual payments by households should be used in micro-affordability analysis. This indicator will reflect the amounts which households should pay in principle, and will thus allow for any non-payment error.

Micro-affordability measurements require reliable and sufficiently detailed information on household incomes and expenditures at the regional and/or municipal level, including expenditures on water. This information will be only available if the country conducts a sizeable sample survey of household

incomes and expenditures, from which results may be transferred appropriate to the socio-economic characteristics of the region/municipality being studied; or, where such transfer is impossible, a special survey of water and wastewater service customers at the local level has been undertaken.

Responsibility for Affordability Analysis

In order to substantiate the political debate and to equip decision-makers with data and information about actual affordability, analysis of water and wastewater affordability services should become an *integral part of the pricing policy*. Executive powers responsible for tariff-setting should be responsible for the affordability analysis: if tariffs are set at the national level, the responsibility for the affordability analysis should rest with central bodies, and if local governments are responsible for tariff setting, then they should carry out the affordability analysis.

While the responsibility for such an analysis should stay with the tariff setting authority, such an authority is not well placed to carry out the analysis and to ensure the reliability of the affordability methodology. To ensure the quality of the methodology, the actual analysis should be delegated to specialised agencies, such as commercial companies, public research institutions and other bodies with proven capacity in the field. Besides, the methodology can be standardised at the national level through establishing specific quality requirements or adoption of a model methodology.

As affordability analyses, particularly micro-affordability and willingness-to-pay methods, require significant resources, not all the executive powers would be able to finance such analyses. In order to ensure sufficient financing for such an analysis, the tariff setting authority may seek various sources, including financing by a water utility, support from a potential investor or from the national government, and limit the scope of the analysis by major tariff adjustment decisions.

In particular, it is recommended that:

- Affordability analyses for water and wastewater services should become *an integral and indispensable element* of tariff revision procedure; they should be introduced into the regular practice of local governments in the process of approving tariffs and strategic development plans of water utilities.
- Results of such analysis might also be useful in *revising water consumption standards* as well as levels and quality of services.
- Affordability assessments should be required by *feasibility studies for large investment projects* to ensure that consumers would be able to repay the investments.

- Results of the affordability and willingness to pay analyses serve as a valuable source of information needed for designing *social protection programmes* and for establishing eligibility criteria for social assistance.
- Results of the affordability and willingness to pay analyses should be used as a basis for *political debates about tariff adjustment and public hearings*; this may help overcome the resistance of political opponents, contribute to reconciliation of interests and win the understanding and support of local communities.

Objectives and Principles of Social Protection of Water Consumption by the Poor

Water is a basic human need as well as an economic good; governments are responsible for ensuring that all members of society have adequate access to safe water. Due to low affordability and the need to increase tariffs to support the reform of water utilities, governments may need to provide additional spending from already stretched public budgets to protect the most vulnerable sectors of the population and to make reforms socially acceptable.

When designing social assistance programmes to ensure adequate access to water services for poorer parts of the population, governments should follow several *principles*:

- Social protection measures for water consumption should ensure an *equal access* to water for all households to meet their basic physiological and hygienic needs, irrespective of income level.
- Social protection systems should be *targeted;* i.e. social support should be provided only to those who really need it.
- Social protection systems should be *effective;* i.e. the amount of provided support should be sufficient to ensure consumption by the poor.
- Social protection systems should be *realistic* i.e. financially sustainable, based on actual budget capacities to provide such support.
- Social protection systems should be *easy and cost effective to administer* as well as transparent and accountable; the state should bear the ultimate responsibility for all social protection measures.
- Social protection systems should provide incentives for *water saving* by consumers.
- Social protection systems should relieve social tension but prevent *side effects* such as market distortion.

Social protection measures can be divided into two basic groups: measures to reduce the charges of water services paid by low-income households and measures to increase incomes of low-income households. In the past EECCA

countries were favouring the first type of measure, including (i) general subsidy for water utilities, (ii) cross-subsidies for households paid by industrial users, and (iii) reduced or zero tariffs for so-called "privileged" consumers (again, involving cross-subsidisation). "Institutionalised" non-payment (i.e. payment not being enforced by the authorities) is another indirect form of subsidy. In the transition to a market economy, EECCA governments faced the need to reduce their budget spending and to reform their social assistance programmes.

General Subsidies for Water Utilities and Cross-subsidies

In aiming to reduce budget allocations for the water supply and other communal services, most EECCA governments (excepting Turkmenistan) have decided to move from financing of water supply and sanitation from public budgets, i.e. by taxpayers, to financing by water users. Some countries achieved significant budget savings. In Ukraine, for example, the share of public financing for housing and communal services, including water, decreased from 4.4% of GDP in 1994 to 0.6% of GDP in 2000. In other EECCA countries the level of budget allocations for the sector remains stable, in Russia, for instance, the total expenses for the sector were around 7% of GDP in 2000.

Public budgets in most EECCA countries are not able to continue supporting low water prices for all households through *general subsidies to water utilities*. At the same time they will continue to play an important role in the financing of the water supply and wastewater sector. Therefore, during the transition period it is recommended:

- To maintain limited state budget funding to support industry development, to develop clear strategic directions for such financing.
- To introduce a requirement for the tariff setting authorities (often local governments) to compensate the differences between the production costs of water utilities and established tariffs.
- To establish reduced or zero rate of value added tax on residential tariffs for water (especially for sewerage and wastewater treatment, where external benefits are higher).

Cross-subsidies between industry and households create significant market distortions and are being gradually phased out. While this is a positive trend, phasing out cross-subsidies should be a gradual process taking into account the ability of households to pay cost-based prices and the financial stability of water utilities. Cross-subsidies within the household sector, i.e. of lower-income by better-off households, may be acceptable so long as economic and environmental signals are not seriously compromised.

Discounted Tariffs or Privileges

Most EECCA countries continue the provision of *privileges*. Under this system, certain categories of citizens are granted discounted or free services based on their social or professional status (e.g. war invalids and handicapped; police, judges and firemen). While there are poor among the recipients of privileges, these programmes do not specifically target them, and often are not justified economically and socially. But there is a political resistance to removing them, even if budgets are not able to finance such programmes. So far, some countries (Armenia, Kazakhstan and Moldova) have undertaken radical steps to eliminate and transform the system of privileges, first of all occupational privileges.

Due to the extreme complexity of immediate termination of the existing tariff preference systems, most countries have opted for gradual reform of privileges. The following approach is recommended for these efforts:

- Occupational privileges must be replaced by targeted benefits by employers.
- Privileges for different categories of socially vulnerable citizens must be replaced by relevant social benefits based on means testing, where this allows to achieve a higher social benefit (i.e., administrative costs are sufficiently low).
- Water utilities and other communal service enterprises must be released of the responsibility to administer privileges (these functions should be transferred to social protection authorities).

It should be noted, that in some cases there may be a rational for continuing to operate the "privilege system" for certain categories of the population. When a certain social or professional category provides a good proxy for targeting the poor, using the privilege system may be preferable to more sophisticated, and hence costly to administer, means testing approaches. This needs to be assessed on a case by case basis.

Housing Subsidies

Several EECCA governments decided to replace the former "across the board" subsidies of all users with a targeted subsidy for the poor. Belarus, Kazakhstan, Kyrgyz Republic, Russia and Ukraine have established programmes of housing subsidies. Under these programmes, the central government provides compensation for housing and communal services (including water) when expenses exceed a certain level of total household income (e.g. households should not pay more than 20% of their income in Ukraine, 22% - in Russia, and 30% - in Kazakhstan). In 2001 in Ukraine 11% of households received the

housing subsidy in summer and 17% in winter, 100 USD per year on average. For single pensioners, this subsidy represented on average 49.2% of their pension.

Housing subsidies, covering communal services including water supply and sanitation and provided as a form of means-tested income support, allowed significant savings for public budgets; they helped channel support to those most in need, while ensuring revenue for utilities during the period of most rapid price increase. On these criteria, they have been effective in Russia and Ukraine. However, better targeting and building water saving incentives into these programmes remain challenges. Besides, provision of subsidies in non-cash form, as compensation transferred from the budget to the utility does not provide incentives for households to reduce their expenses.

The effectiveness of the housing programme in Kazakhstan remains unclear due to high eligibility level and the corresponding low number of recipients. Evaluation of the housing subsidy programme in the Kyrgyz Republic cannot be carried out at this stage due to insufficient data and information, requiring further investigation. The demand for the housing programme in Belarus remains low due to low cost recovery rate, but might become an important tool for social protection if the government resumes the sector reform.

The experience of EECCA countries shows that housing subsidies proved to be an effective tool to target social assistance for the poor and to protect them from the major price increase required for the sector reform. The following ways to improve housing subsidy programmes in EECCA countries are recommended based on the above principles:

- Improving *targeting* by enhancing the procedures for determining and verifying household incomes (introducing an institute of social inspectors, toughening means-testing).
- Moving from granting subsidies based on actual consumption levels and actual dwelling area to granting subsidies based on *social standards* of dwelling area and service consumption. This will not only ensure better targeting and fairness of the state social assistance but also encourage low income households to consume services economically.
- Providing subsidies in a *cash form* by transferring funds in the special accounts for consumers, where these funds may be used exclusively for paying service bills. This will streamline the granting mechanism and make people feel more responsible for paying the bills. Introducing cash subsidies would be possible only if budgets transfer funds on time.

Housing subsidies should be considered a transition measure: when water prices reach a high level of cost recovery and the income level of the population improves, such programmes could be discontinued. At that time, assistance to ensure access of the poor to water services could be provided under other forms of social assistance aiming to reduce poverty, as this would be a more effective and transparent form from the administrative point of view.

Poverty Reduction Programmes

Armenia, Uzbekistan and more recently Ukraine and Kazakhstan have launched programmes to provide means-tested *income support for families*. These programmes aim to ensure a basic income level, but do not target water or other communal services specifically. Such poverty reduction programmes are a more effective alternative to housing subsidies when the water bill is not significant in household expenses. Income support for families could substitute for the current housing subsidy programme in some EECCA countries, for instance in Ukraine.

At the same time, they may be insufficient when a major water tariff reform is planned and no special programme is in place to cushion the price shock for the poor. For example in Armenia, where the level of cost recovery is very low and a major price increase for water could occur if planned sector reforms move ahead, the existing family support programme would not be able to provide effective support for water consumption. In this case, governments need to consider establishing a special water support programme.

Tariff-based Measures

Means-tested income support is the preferred tool to provide social support to the poor in many countries. While means-tested social assistance preserves prices and thus the economic and environmental signals to the consumer about the cost of water services, this form of assistance does not provide strong incentives for water saving in EECCA countries because the billing is usually based on pre-set consumption norms and not on actual consumption. In OECD countries tariff-based measures are often used as an addition or sometimes an alternative to income subsidies. Such tariff-based measures include *lifeline and block tariffs*, which give households' access to basic water services at little or (occasionally) no cost, and price incentives to restrict higher levels of consumption. The use of tariff-based measures is not reported in EECCA. This is because implementation of such measures requires metering of households and this is not well established in most EECCA countries.

Given the high water consumption in EECCA countries, economic incentives to reduce water consumption are highly desirable, together with financing for removal of leakage and increasing production efficiency of water utilities. Therefore, installation of apartment and block meters should be encouraged, if economic and environmental assessment of such programmes proves to be favourable. In those countries where water metering covers a large percentage of the population, e.g. Moldova and probably Armenia, governments and utilities should test the effectiveness of increasing block and social tariffs.

The high level of household expenses for water and high meter coverage in Moldova make it feasible for the development of a special programme based on tariff measures. Such measures could only be successful if implemented in the context of a comprehensive sector reform aimed at improving service quality and coverage.

Debt Restructuring and Disconnection Policy

In addition to economic mechanisms to ensure water consumption by the poor, there are other legal and technical tools which can be used at the national and local level, including arrears management, disconnection policy and alternative water supply. Due to the high level of non-payment by consumers, arrears management, such as *debt restructuring* are used in some EECCA countries. In most EECCA countries, consumers can be *disconnected from the water services for non-payment*, but due to technical difficulties and political opposition, this measure is rarely used in practice.

The problem of indebtedness and non-payment should be addressed at the political level by enforcing payment discipline for all customers. Therefore, provisions for debt penalties should be maintained in the legislation to prevent debt accumulation and strengthen payment discipline. At the same time, compliance by households can be demanded only when the state meets its own responsibilities and pays wages, pensions and other social benefits on time. The current system of sanctions against non-payments or for late payments for communal services will only be effective in this case. Debt restructuring should be developed to address already accumulated arrears.

The possibility of disconnection should be maintained in the legislation as an ultimate sanction against non-payers and to strengthen the overall discipline. But it should only be used within limitations. Disconnection of apartment blocks with both non-payers and disciplined consumers should not be allowed. In cases where the consumers are disconnected from the centralised water supply, a minimum amount of water for basic human needs must be provided to them.

Main Consumer Rights and Framework for Public Participation

Relations between households and water utilities are marked by a deep lack of confidence. EECCA governments need to ensure the protection of consumer rights and promote public participation in the reform of the urban water sector in order to achieve *two main objectives*: to ensure public and political support for the proposed reform (including price increase), and to protect broad public interests from arbitrary decisions and abuse of monopoly powers of water utilities, in the frame of a broader regulatory reform.

Main rights of the consumers as identified by the UN Guidelines for Consumer Protection include the protection of consumers from hazards to their health and safety; the promotion and protection of the economic interests of consumers; access of consumers to adequate information; consumer education; availability of effective consumer redress; freedom to form consumer groups and the opportunity of such organisations to present their views in decision-making processes; the promotion of sustainable consumption patterns. These main consumer rights should be used during the urban water sector reform in EECCA countries: they should be introduced to the national legislation, and reflected in transparent and predictable state policy in this sector.

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to justice in Environmental Matters provides a *framework for public participation* in environmental decision-making. This framework can be used to promote public participation in the urban water sector reforms, including the following main forms: information; public participation in decision making processes; and access to justice.

Civil society organisations, including public associations, non-governmental organisations, associations of housing owners and consumer groups can play an active role in protecting consumer rights and facilitating public participation in the sector reform. Their activities should be acknowledged and supported.

Information for Decision-makers and for Consumers

As households are becoming the major customers of water utilities, the owners and operators of water supply and wastewater services should pay greater attention to the opinions and preferences of these consumers. *Consumer surveys and public polls* could be used regularly at the local level, in addition to or as a part of the methodologies for assessing water affordability presented earlier.

National and local governments need to improve information provision to the consumers, including the provision of full, regular and reliable information

about sector reforms and specific situations in particular locations. The *minimum set of information for consumers* should include the information on:

- Service standards, consumption norms, allowed interruptions of service provision
- Levels of and rules for establishing prices and tariffs, including advanced information about changes in prices and tariffs
- Rights and obligations of consumers, service providers and regulatory authorities
- Procedures and forms of conflict resolution
- Performance of service providers
- Available privileges and subsidies, procedures for and documents required for receiving them
- Current situation and challenges in the sector and reform measures.

Information should be provided in a *form accessible for consumers*, including:

- Contracts with the service providers containing detailed description of all the conditions
- Annual reports on the performance of water utilities based on performance indicators
- Detailed and informative bills for water supply and wastewater services
- Mass media, including official publications and announcements
- Visual and hand-out information
- Public relations units at water utilities.

It should be stressed, that all information, which does not present commercial secrets, should be made available for independent experts. Besides, *independent information* about the performance of the sector can play an important role during the reform process. The right of the public for carrying out a public audit or expertise of water utilities should be officially, possibly legally established.

Both national and local governments and utilities could play an effective role in increasing public awareness about the value of water as a public good and a limited natural resource. *Public awareness campaigns and educational programmes* can be an effective supplement to the economic incentives for responsible water use.

Public Participation

Public participation in the decision-making in the water supply and sanitation sector should be developed on the basis of the following *principles*:

- *Clear focus*: Consultative mechanisms (processes or bodies) established to promote public participation in urban water sector should have clearly formulated mandate and tasks, and focus on specific issues.
- *Representation and participation*: Interests of all main stakeholders should be represented in consultative mechanisms, including water utilities, public authorities and consumer group. Public participation mechanisms should be open for new members, and will benefit from participants with relevant expertise.
- *Transparency*: Information about the public participation mechanisms should be open, including information about the mechanism and its operational procedures, reached agreements and areas of disagreement. Such openness increases the responsibility of the stakeholders, and provides support to the implementation of the reached agreements.

Public consultations and hearings are among the most effective mechanisms of public participation in urban water sector reform, and should be stipulated by law, in the spirit of the Aarhus Convention. It should be noted, however, that public consultations and hearings require time, financial and human resources, and therefore should be organised at strategically important stages of reform. In particular, public consultations and hearings should be recommended on the following issues:

- Development of national legislation and strategic programmes
- Preparation and implementation of community development plans, including water utility reform
- Discussions about appropriate levels of services and tariffs
- Private sector involvement

Administrative mechanisms such as existing or specially established working groups, commissions and councils could provide another form for public participation in urban water sector reforms. They include special administrative bodies focusing on the issues of water supply and sanitation (e.g. consumer councils under the national sector regulation in the UK, expert examination of projects and programmes including EIA) and general bodies (e.g. committees for human rights in some Russian provinces). Public participation in specialised and general administrative mechanisms promotes information exchange, improves the quality of decision making, and attracts broader political and social support to the sector reforms.

Access to Justice and Conflict Resolution

Unclear contractual relations between the households and water utilities hinder effective prevention and resolution of conflicts between them. Typically, the

final consumer does not have *direct contractual relations* with the water utility. Some EECCA countries make efforts to tackle this problem by introducing direct contracts between utilities and households. While introduction of such direct contracts does not seem always practical, legal clarification of the service parameters, rights and obligations of the parties as well as elaboration of model contracts based on national legislation can be recommended.

Some countries support the development of *associations of house residents and condominiums*. The establishment of condominiums is considered as one of the most important approaches in reforming the housing and communal services sector in Armenia, Russia, and Ukraine. Such efforts may promote collective contracts and responsibility and should be promoted.

Service organisations, usually *housing maintenance companies*, act as mediators between the consumer and the producer of water supply and sanitation services. They can play an important role in the maintenance of the infrastructure and in direct relations with owners of individual apartments, but they are not responsible for the quality of the services or for the payment collection. Incentives to the service organisations for improving their performance need to be strengthened.

Settlement of conflicts related to water supply and wastewater services is very complicated in EECCA countries. The process begins with administrative procedures, which are often lengthy and exhausting. The next step formally open to consumers is the court. But only a limited number of consumers use this mechanism for the protection of their rights, as the court system is slow and cumbersome; *defending the rights of water services in courts* is not economically justifiable for individual households. Collective forms of court defence can become an important means for of consumer protection.

Softer forms of conflict resolution should be introduced in EECCA countries in order to reduce tension in the relations between the service provider and the consumer. Such softer forms may include conflict settlement in independent bodies outside courts (e.g. special administrative procedures and panels, ombudsman, consumer councils, special bodies attached to the regulatory authority, etc.), which allow for rapid and effective solutions.

Local authorities and water utilities can play an important role in preventing and resolving conflicts at early stages. To this end, service providers should introduce *transparent systems of dealing with complaints*, and should inform the consumers about such systems. A requirement of such systems may be included into the contracts between water utilities and local authorities. Another effective tool for resolving conflicts and strengthening responsibility of service provider

is *automatic re-calculation of charges* in case of the failure of the utility to provide services of proper quality.

LIST OF ABBREVIATIONS

EECCA	Eastern Europe, Caucasus and Central Asia
NIS	New Independent States of the former Soviet Union
CIS	Commonwealth of Independent States
CEE	Central and Eastern Europe
OECD	Organisation for Economic Co-operation and Development
EAP Task Force	Task Force for the implementation of the Environmental Action Programme for Central and Eastern Europe
IFI	International Financial Institution
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EU	European Union
US EPA	United States Environmental Protection Agency
DANCEE	Danish Cooperation for Environment in Eastern Europe, Ministry of the Environment
UN ECE	United Nations Economic Commission for Europe
WHO	World Health Organisation
UNICEF	United Nations Children's Fund
NGO	Non-Governmental Organisation
WTP	Willingness to Pay
CSE	Communal service enterprise, utility
vodokanal	Water utility
GDP	Gross Domestic Product
VAT	Value Added Tax
CPI	Consumer Price Index
EIA	Environmental Impact Assessment
PADCO	A commercial consulting company
COWI	A commercial consulting company

INTRODUCTION

Almaty Guiding Principles

At the consultation on Water Management and Investments in Eastern Europe, Caucasus and Central Asia (EECCA)[1], which took place in 2000 in Almaty, Kazakhstan, Ministers of economy/finance and environment defined and stressed the urgent need for reform in the urban water supply and sanitation sector. The Ministers further formulated the major strategic objective of such reform: "to ensure that good quality water and sanitation services are delivered liable, sustainable and at least cost to the population".

The Ministers adopted Guiding Principles for Reform of the Urban Water Supply and Sanitation Sector in EECCA, which identify the key elements of the sector reform. The Almaty Guiding principles identify the following recommendations related to the protection of consumer rights:

- Gradual tariff increases required for financial stability of the sector should take full account of affordability constraints and be part of a strategy for service improvement.
- Governments should take responsibility for ensuring that poor and vulnerable households have adequate access to water and sanitation services; transparent, targeted and efficient subsidies, which take account of tariffs and address integrated household needs, should be used to provide support for such households.
- Participatory, multi-stakeholder processes should be launched to support the development and implementation of strategies to reform the water supply and sanitation sector.

Following the Almaty meeting, a Group of Senior Officials for Urban Water Sector Reform in EECCA has been established to provide political support to

[1]. EECCA countries include Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation, Ukraine, Uzbekistan, Tajikistan and Turkmenistan. More recently this region is referred to as Eastern Europe, Caucasus and Central Asia (EECCA).

the implementation of the Almaty Guiding Principles. EAP Task Force/OECD is providing secretarial support to the Group.

History of this Document

At their first meeting in September, 2001, the Group of Senior Officials on Urban Water Reforms discussed social aspects of sector reform, and called for the development of Guidelines on Consumer Protection. At the second meeting in December 2002, the Group endorsed the main findings and recommendations of the report.

Two expert workshops were organised in March 2002 and January 2003 to identify key issues to be covered by the report, to finalise the report and to elaborate proposals for their implementation. The workshops brought together national and local government representatives from EECCA and from Central and Eastern Europe, experts from OECD and EECCA countries, and representatives from consumer groups, NGOs and the private sector.

For the development of the report, the EAP Task Force together with the team of consultants gathered statistical data and information about access of households to water services, water charges and prices, household income, social protection schemes and the practices of consumer and public involvement in the sector. These data and information were gathered through a standard questionnaire by consultants in all EECCA countries. The project team drew from the OECD work on social aspects of water pricing, the EBRD/DANCEE work on affordability of water prices in Central and Eastern Europe, the USAID/PADCO work on municipal water sector reform in Ukraine and other projects carried out by the EAP Task Force for the Group of Senior Water Officials.

The recommendations in this report are designed for the national and local government officers of EECCA countries who are responsible for reforming the water/wastewater sector as well as for social assistance. The report could also be useful for consumer groups and NGOs, managers of water utilities, representatives of the private sector and donors.

Structure of the Document

The report is composed of three major sections. Chapter 1 analyses current trends with affordability of water services in EECCA countries and provides recommendations on the most useful methodologies to measure water affordability. Chapter 2 evaluates the social protection measures currently used by the EECCA governments and recommends ways for their further reform.

Chapter 3 provides an overview of the existing practices of consumer and public participation in sector reform and identifies the most effective mechanisms. Detailed data and information gathered by the EECCA national experts who participated in preparation of this report are provided in Annexes.

CHAPTER 1. AFFORDABILITY OF WATER SUPPLY AND WASTEWATER SERVICES

1.1 Scope of the Affordability Discussion

This section will identify the main causes of the emerging affordability problem in the EECCA region, including rapid price increase and growing poverty and income disparities. It will further define affordability of water supply and sanitation services from the economic point of view as well as taking into account issues of social equity and political acceptability of water price reform.

1.1.1 Main Causes of the Affordability Problem

Over the last decade, the issue of the affordability of water supply and wastewater services has been increasingly brought to the attention of policy-makers and regulatory agencies, potential investors and consumer rights groups, as well as research institutions. Affordability has become an important issue in many countries around the world, including industrialised ones.

The affordability problems have recently emerged in the EECCA countries following the phasing out of price controls and reducing public subsidies for the communal services in the early 1990s. These changes caused by the process of transition to a market economy significantly affected the traditional "soviet" understanding of water services as social services, for which the state was charging a very low symbolic fee. Social communal services were gradually transformed into economic services charged according to market prices.

Rapid transition from financing water and other communal services by tax payers through public budgets to financing by users through user charges became the main cause of the affordability problem.

Liberalisation and Rapid Growth of Prices

The price and tariff liberalisation as a part of the market transition triggered a significant increase in prices for communal services. One of the most characteristic features of this general trend in many countries was an *outpacing* growth of housing and communal service[2] prices as compared to prices for all other consumer goods and services. For example, between 1992 and 2001 in **Ukraine** prices for consumer goods and services rose more than 89 thousand times, whereas the communal service tariffs marked a growth of 1.46 million times for the same period. Therefore, prices for communal service rose 16 times higher than all other consumer goods and services combined (see Table 1.1).

Armenia, for instance, reported the potable water price growth for the period of 1994 to 1998 being 1.2 to 17.4 times higher than for all other consumer goods and services (while tariff for water and wastewater services remained unchanged in Armenia during the last four years). In **Georgia**, this trend was estimated at 30% to 50% for the same period.

This trend continued in **Kyrgyz Republic** where the growth of tariffs for housing and communal services outpaced the growth of prices for other consumer goods and services by 10 percent in 2000 and by 22 percent in 2001. On the whole, tariffs for potable water increased 26 times in Kyrgyz Republic between 1993 and 2000.

The situation in **Belarus** is somewhat different. The government tried to liberalise the housing and communal service market (including water and wastewater services) in 1995. As a result, tariffs for housing and communal services grew three times faster than prices for all other consumer goods and services. However, the sector reform was suspended later, and from 1996 through 1999, the housing and communal services tariffs growth fell behind the increase in prices for other consumer goods and services. The tariff setting policy was revised in 2000: tariffs for housing and communal services for that year rose 544%, the general CPI being 208.0%. In 2001 tariffs for communal services rose 180% (water tariff 213%) or 1.23 times higher than prices for all consumer goods and services.

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[2]. Housing and communal services usually include provision of housing maintenance, electricity, gas, heat, cold and hot water supply, solid waste and wastewater management, coal and other fuel in rural areas.

Table 1.1. Consumer Price Indices and Housing and Communal Service Tariff Indices in Selected EECCA Countries (1993 through 2001)

	December-to-December ratio			*December-to-December, percent*					
	1993	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Ukraine									
CPI*	102.6	5.0	2.8	140.0	110.1	120.0	119.9	125.8	106.1
Tariff index	291.0	8.5	9.1	250.0	100.9	109.1	109.4	139.2	105.8
Tariff index / CPI, times	2.84	1.7	3.25	1.79	0.92	0.91	0.91	1.11	0.99
Armenia									
CPI	...	18.6	1.3	...	121.9	98.7	102.0	100.4	102.9
Tariff for water	...	22.5	23.0	...	195.4	151.4	100.0	100.0	100.0
Water tariff / CPI, times	...	1.21	17.4	...	*1.60*	*1.53*	0.98	1.00	0.97
Georgia									
CPI	...	65.7	1.6	...	107.3	110.7	110.9	104.6	103.4
Tariff for water	...	100.7	2.0	...	146.0	100.0	104.2	108.0	94.1
Water tariff / CPI, times	...	1.53	1.25	...	*1.36*	*0.90*	0.94	1.03	0.91
Kyrgyz Republic									
CPI	...	...	...	...	123.4	110.5	135.9	118.7	106.9
Tariff index	...	...	...	...	127.2	119.0	142.1	130.2	130.8
Tariff index / CPI, times	...	...	...	...	1.03	1.08	1.05	1.10	1.22
Belarus									
CPI	...	...	3.4	139.1	163.4	281.7	351.3	208.0	146.0
Tariff index	...	...	11.7	111.5	163.1	161.9	250.7	544.3	180.2
Tariff index / CPI, times	...	...	3.44	0.80	1.00	0.57	0.71	2.62	1.23

*CPI: consumer price index.

Source: State Statistics Committee of Ukraine; Annual Statistical Bulletin of the Southern Caucasus Countries, 2000, pp. 408, 412; Annual Statistical Bulletin of the Southern Caucasus Countries, 2002, pp. 345, 350; http://nsc.bishkek.su

Introducing Full Cost Recovery of Services by Households

Due to macroeconomic transformations and shrinking economic activity, national governments faced severe budget deficits, and were no longer capable of bridging the gap between the actual production costs of communal services and collections on consumer bills. Therefore, public budgetary subsidies (referred to as "dotatsija" in the EECCA region[3]) were rapidly reduced or eliminated.

[3]. "Dotatsija" is a subsidy allocated from the public budget to cover the difference between the actual costs of services and tariffs for residential customers.

In the mid 1990s, applying general market principles to water and communal services, EECCA governments declared the introduction of a "user pays" system, according to which the customers were supposed to pay for the provision of water and wastewater services.[4] A new task – *full recovery* of service costs by customers – was put on the agenda. It should be noted, however, that the definition of full cost remains unclear in many EECCA countries.

Governments of Russia, Kazakhstan, and Ukraine were the first to declare the transition to the full cost recovery policy. Initially, this task did not seem as complicated as it has proved to be in reality. Most countries planned to complete the transition within three or at most five years. However, the issue of 100 percent recovery of housing and communal service costs by households remains among the critical problems faced by communal service enterprises of EECCA countries.

The housing and communal service sector reform in **Russia** was declared by the Law "On Fundamentals of the Federal Housing Policy", December 24, 1992. The Law sets forth the transition of the industry to self-financing (i.e. residential consumers were to pay for all housing and communal services in full) within five years. Such a short transition period was chosen based on the assumption of an economic growth at the beginning 1992 and accompanied with the sharp rise of personal incomes. The forecast never came true. Moreover, real residential income declined, while increasing housing and communal service tariffs proved to be painful to residential consumers. In view of this, a decision was made in 1995 to extend a step-by-step transition to full payment for housing and communal services by households from five to ten years, i.e. until the year 2003.

At *the first phase* of the housing and communal service sector reform (1992 through 1996), the portion of the full service costs residential customers were responsible to recover increased from 2% in 1992 to 28% in 1996, on average; in some regions it reached 45% to 60%. The pace of the reform varied by regions depending on the state of the housing stock, natural and climate conditions, and political will at the regional level.

*The second phas*e of the reform was initiated by adoption of the "Concept of the Housing and Communal Sector Reform in Russia" approved by Presidential Decree # 425 dated April 27, 1997. The Concept set the timeframe for the

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4. OECD Council Recommendation on water resource management policies: integration, demand management, and ground water protection, 31 March 1989.

sector's transition to self-financing and defined four federal standards to be used as benchmarks by regions. The third standard – federal standard for service cost recovery by residential customers – envisaged that the full cost recovery would be attained by the year of 2003 (see Table 1.2).

Table 1.2. Rates of Cost Recovery of Communal Services by Residential Customers as Planned by the 1997 Reform Concept (1997 through 2003), Russia

Years	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Planned cost recovery rate (%)	35	50	60	70	80	90	100

Source: Concept of the Housing and Communal Service Sector Reform in Russian Federation approved by Decree of the President of Russia Federation # 425 dated April 28, 1997.

According to many regional officials, it would be utopian to expect residential customers to recover the full costs of services by 2003 under chronic wages arrears and a low salary level, insufficient to buy basic food products and clothes. They believed the transition would take at least 15 years. For this reason, the transition to 100 percent cost recovery was postponed until 2008. However, in March 2001 the Russian State Committee for Construction set the year of 2004 as the final term.

In 2001, the weighted average rate of recovery of water and wastewater service costs by residential customers was 45% whereas the weight of population serviced by communal service enterprises with the cost recovery rate below 50% constituted 74%.[5]

Kazakhstan was the second EECCA country to take residential payments for housing and communal services out of the state budget and fully place them upon consumers. In the late years of the Soviet Union, state subsidising of the housing and communal services sector in Kazakhstan reached 50% to 60% of the republican budget. Following the breakdown of the USSR in early 1990s, the government of Kazakhstan realised that it could not afford to fund the sector any longer. In 1993 a new government housing policy was adopted that aimed at full recovery of housing and communal services costs by the residents.

[5]. According to the indicative sample survey of 90 water utilities. Institute of Urban Economics/OECD, Moscow, 2002.

In fact, the whole transition was completed within nine months in 1996. On April 12, the government passed a resolution on a phased transition to full recovery. From April 1 through July 1, 1996, residential consumers had to pay 50 percent of the service costs; from July 1 until October 1, 1996, the recovery rate was 75 percent. Effective October 1, 1996 households paid the full costs of services.

Transition to full cost recovery tariffs led to a sharp increase of payments for housing and communal services and was accompanied by social protests. While in 1995, Almaty households paid 15% of their income for communal services, in 1999 this portion went up to almost 70%. The price for a one-room apartment became comparable to yearly charges for communal services.[6]

In February, 1994, the Government of **Ukraine** embarked on a programme to phase in full cost recovery by financially stable households according to the following schedule: 20% in 1994; 40% in 1995; 60% in 1996. The goal was attained: while in early 1995 Ukrainian households paid 6% to 8% of the actual service costs, in January 1996 they recovered as much as 60% of the costs. In the summer of 1996, tariffs for all housing and communal services rose again resulting in households paying 80% of actual costs.

As of the end of 2001 four out of 27 regions of Ukraine reached 100% cost recovery for water supply and 13 regions covered full costs for wastewater services. The weighted average rate of water and wastewater service costs recovery by the population was 77% in 2001 – four percentage points less than in 2000.

Table 1.3. Recovery of Water and Wastewater Service Costs by Residential Customers by Ukrainian Regions in 2001

Service Cost Recovery Rate (%)	*Number of Regions*	*Residents of These Regions as Percentage of the Total Ukrainian Population (%)*
35 to 50	3	7.7
50 to 75	7	29.2
75 to 99	14	53.2
100	3	9.9
Ukraine as a whole	27	100.0

Source: State Committee for Housing and Communal Services of Ukraine

6. Irina Kravtsova, "Instructive Experience of the Housing and Communal Sector Reform in Kazakhstan", December 3, 2002; http:/www.rosbalt.ru.

From the very beginning of the price liberalisation in **Belarus** residential payments for communal services were regarded as socially significant, thus subject to strict government regulation. Households paid their water and wastewater bills by *fixed* tariffs subject to approval by the Cabinet of Ministers and monthly indexing. The first attempt to liberalise the Belarus housing and communal service market was made in 1995: residential tariffs were raised considerably, and an increasing number of meters were being installed by residential and industrial customers. However, on August 30, 1996 the President issued the Decree "On Some Measures to Rationalise Pricing Policies in Belarus", which significantly expanded the area of administrative regulation. It established that households should pay toward their housing and communal services at most 50% of the actual costs of the services.

As a result, the cost recovery rate fell from 30.6% to 16.3% for all services between 1995 and 1999. As of the 2nd quarter of 2001, tariffs for housing and communal services covered at most 20% to 25% of their actual costs; the weighted average rate of water and wastewater service cost recovery by the population was 37% to 42%.[7]

In **Kyrgyz Republic** the reform of the housing and communal service sector was initiated by the adoption in April, 1998 of the "Araket" National Programme to Overcome Poverty and Concept of the Housing and Communal Sector Reform for the period until 2010. The Concept established the national standard for the level of residential payments for services with respect to the costs of providing these services. That standard envisaged increasing the rate of service cost recovery by households up to 50% by 2000 and to 75% by 2005. BishkekVodokanal reported that households recovered some 26% of the actual water cost through tariffs in January 2001. The tariff for water supply was doubled effective February 1, 2001.

Uzbekistan became the second EECCA country after Kazakhstan to see full communal service cost recovery by residential customers. According to the Concept of Intensifying the Housing and Communal Sector Reform dated November 3, 1998 full cost recovery was to be attained at the second phase of the reform between 2000 and 2004. The task was completed ahead of time, since it was officially reported that households paid 100% cost of services as early as 2000. However, a number of facts, particularly, low service quality,

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7. Elena Rakova, "The Price for Populism: Bankruptcy of the Communal Service Sector", Research Center within the Privatization and Management Institute, Minsk, November 8, 2001.

continuing growth of prices (the weighted average residential tariff for water and wastewater services rose by 65% in the year of 2001 alone), and high (three to four times) level of cross-subsidising suggest that the sector failed to reach the break-even point.

The population of **Moldova** paid, on average, 40% to 45% of the actual costs of water and wastewater services in 2001. At the same time, three towns – Beltsy (160 thousand residents), Drokiya (25 thousands), and Chimishliya (16 thousand) – recovered the full cost of services through residential tariffs.

Turkmenistan is the only post-soviet country where housing and communal services are considered as a purely public good: water, electricity, and gas are provided to people free of charge. The Presidential Decree dated September 30, 1992 set the maximum limit on free per capita water consumption at 250 litres per day.

Table 1.4 shows aggregate data on weighted average rates of service costs recovery by residential customers and plans to reach the full recovery of communal costs in EECCA countries.

Table 1.4. Rates of Actual Water and Wastewater Cost Recovery from Households in Selected EECCA Countries

Country	*Beginning of the Reform*	*Water/Wastewater Cost Recovery Rate (%)*	
		2001	*Plans to Attain the 100% Rate*
Armenia	February, 2001	20 to 22	82% to 86%[1)] by 2005
Belarus	no data	37 to 42	2005
Georgia	1998	17.6	2005[2)]
Kazakhstan	1996	100	attained in 1997
Kyrgyz Rep.	1998	50	75% by 2005
Moldova	1999	40 to 45	no data
Russia	1992	45	2004
Uzbekistan	1998	100	attained in 2000
Ukraine	1995	76.9	no data
Turkmenistan		0	0

1) According to ArmVodokanal and YerevanVodokanal financial projections for 2002 through 2005.
2) Planned by GruzVodokanal.
Source: National experts

It is necessary to point out, however, that the official cost-recovery rate can be substantially higher than it is in reality. One reason for this is that the official cost recovery rate does not always include all elements of the water utility cost structure, especially investment, but in some cases also abstraction and discharge fees, are not accounted for in these figures. Another reason for the probable overestimate of official cost recovery levels lies in the method used for the assessment of asset value, which tends to underestimate asset value[8]. As a consequence the depreciation component in tariffs may be far too low. In one case it was reported that assets had to be re-valued by a factor of 20, with a significant impact on the tariff level needed to achieve cost recovery.

High Level of Poverty and Inequality of Income Distribution

The process of transition to the market economy in post-soviet countries contributed to the poverty problem. Such a phenomenon as poverty was alien in the soviet society, since the prevailing ideological doctrine denied recognition of poverty. Results of sample surveys of household budgets identifying the poverty rate in the USSR were kept secret.[9] Only after breakdown of the Soviet Union, when soviet survey data became available to a certain extent, was it estimated that at most eleven percent of the population was below the poverty level.

A characteristic feature of "soviet poverty" was its geographical localisation in Central Asian republics, Azerbaijan and the autonomous republics of the Caucasus of the Russian Federation. While only 20% of all soviet residents lived in those regions, the local poor accounted for 60% of the total poor population. 23% of the poor lived in Russian Federation and 10% resided in

8. This is due to the fact that EECCA utilities usually use historic values, rather than replacement values.

9. Surveys of household budgets were conducted in the Soviet Union since 1924. However, that source of information like other socially unfavorable statistics had remained closed until mid 1989 where the Central Committee of the Communist Party and Soviet Union Cabinet of Ministers issued the Decree "On Measures for Radical Improvement of National Statistics". That Decree lifted longstanding bans on publishing any data which could directly or indirectly characterize any negative phenomena in the Soviet Union. At last, in 1990-1991 the Soviet Union State Committee for Statistics published major results of 1975-1990 sample surveys of household budgets.

Ukraine. The smallest number of poor households lived in Baltic republics – around one percent[10].

The former Soviet Union was characterised by relatively insignificant differentiation of the population by income level. In 1987 through 1990, the Gini coefficient[11] ranged from 0.25 in Belarus to 0.31 in Kyrgyz Republic. Most of the population (67%) could be attributed to the so-called middle class.

The breakdown of the Soviet Union and transition to the market economy increased both the rate and gap of poverty. According to the latest UNDP Human Development Report [12], as of 2000, former Soviet Union republics ranked from 42 (Estonia) to 112 (Tajikistan). For example, Russia ranked at 60, Armenia – 76, Ukraine – 80, Georgia – 81. If the ratings of all post-soviet countries were weighted by their population, then such an "artificial" Soviet Union would hold the 73rd position in this index, which is much lower than in the 1991 index (31st position). Poverty became large-scale and more acute in all post-soviet countries (see Table 1.5).

Table 1.5. Poverty and Gini Coefficients in EECCA Countries

Country	*The Poor as % of the Total Population (2001)*	*Gini Coefficient*	
		1987 though 1990	*1996 through 1998*
Armenia	50.9	0.27	0.61
Belarus	28.9	0.23	0.26
Georgia	51.1	0.29	0.43
Kazakhstan	28.4	0.30	0.35
Kyrgyz Rep.	47.6	0.31	0.47
Moldova	...	0.27	0.42
Russia	29.1	0.26	0.47
Ukraine	27.2	0.24	0.47

Source: Transition: The First Ten Years. Analysis and Lessons for Eastern Europe and Former Soviet Union. World Bank, Washington D.C., 2002.

In addition to the general increase in poverty over the last decade due to the general economic decline as reflected by shrinking GDPs, growing prices for

[10]. A. Revenko. From Poverty in the USSR to Poverty in the Post-Soviet Countries / First International Conference on Poverty Assessment in the Post-Soviet Countries. Yerevan, November 2002.

[11]. Gini coefficient characterizes unevenness of income (expenditure) distribution and reflects deviation of actual distribution by equal population groups from the line of the even distribution.

[12]. Human Development Report 2002. UNDP, New-York, 2002.

various consumer goods and services and massive devaluation of savings and deposits, there is a drastic polarisation of society. The middle class has practically vanished.

1.1.2 Economic, Social and Political Aspects of Affordability

Ability and Willingness of Consumers to Pay

The notion of *affordability of water and wastewater services* is rather broad and covers economic and financial aspects, as well as social and political aspects. This document will mostly focus on the *financial* aspects of affordability, which could be measured more precisely than social or political ones. Water supply and sanitation services are considered economically affordable if households can pay the water bill without a significant reduction of expenses for other essential goods and services.

When analysing financial water affordability it is important to distinguish between a customer's *ability to pay* for services and customer's *willingness to pay* (see Figure 1.1.). It should be noted that willingness to pay lies on the border between economic and social and political aspects. This report further proposes main methodologies to measure ability to pay for water services, including ability and willingness to pay.

Figure 1.1. Elements of the Water Supply and Wastewater Disposal Service Affordability

Key question: Is a customer *able* to pay?

An *ability-to-pay* indicator aims to answer the question of whether or not household income is sufficient to pay the increased price of services without serious prejudice for its ability to pay for other essential goods and services. A household is considered unable to pay the service price when this would require a substantial reduction of other essential expenses[13]. Ability to pay analysis is based on statistical data and is more objective.

Key question: *Will* a customer pay?

A *willingness-to-pay* indicator aims to identify the maximum amount a consumer would be willing to pay for a given number of units of the service of given quality. In addition, willingness-to-pay for improvement in quality can indicate the maximum amount a household would be prepared to pay for a better quality (e.g. intrinsic quality of water such as colour, taste, chemical composition, or quality of service). Willingness-to-pay analysis is based on subjective statements of households and their judgement about their income, the quality and the price of the service.

Social Fairness and Equity

Social acceptability of the prices for water supply and sanitation services is largely based on the public perception of the fairness of the price. To some extent it can be viewed as a collective "willingness to pay" of the society as a whole.

[13]. There is no universal definition of "essential" goods and services, such a definition can only be proposed for specific national and local conditions. Equally, there is no established definition of a "substantial" reduction.

Growing prices and deteriorating quality of water services together with the traditional perception that water is a social service and should be free make most consumers doubt that the price for water is fair. For example, a consumer survey carried out in Lutsk and Khmelnitsky (Ukraine) demonstrated that 76% and 82% of the cities' residents believed that prices for communal services were too high, and only 23% and 17% considered that prices reflected real costs. In addition, many water consumers in EECCA countries lack information and knowledge about the real costs of water supply and sanitation. It is hard to imagine that, with a belief that tariffs are exaggerated, customers would support the idea of raising tariffs. On the whole, ensuring a desirable level of social acceptability of new tariffs for services constitutes an important task and predetermines the overall success of reforms.

But the fairness of water prices is broader than only a lack of trust in the tariffs charged by utilities. Broader social policies need to address four basic equity dimensions in EECCA countries: (1) equity across customer income groups; (2) equity across regions; (3) equity across various water users (i.e. across sectors); (4) equity across generations.

Equity across income groups requires that low-income households should not pay a disproportionately larger part of their disposable income for services than better-off customers. The implementation of this principle requires government intervention aiming to either reduce the price of water or to increase the disposable income of the poor consumers.

Prices should reflect costs of water services and these costs may vary significantly in different locations. *Equity across region*s requires that in those regions where water prices are particularly high, water services would still be affordable to the population. Implementation of this principle may also require a government intervention, e.g. direct government subsidy to the high water-cost region (e.g. in Hungary), or alternative water supply (e.g. Kazakhstan).

Equity across various water users requires water resource management policies designed to ensure the equitable allocation of water for various functions: economic (as input for industrial and agricultural production processes, as well as for consumption by households), social (life-sustaining functions, as part of basic human needs, and cultural values) and environmental (supporting aquatic ecosystems, contributing to flood control, and serving as "sinks" for both rural and urban pollution).

Finally, *equity across generations* in the broader framework of sustainable development requires that consumption levels today do not diminish future generations' opportunities to benefit from water resources, as well as an equitable distribution of infrastructure financing across generations.

Political Acceptability and Balance of Interests

Political acceptability is reflected by the attitude of those who take decisions on water prices to the role of the state in supporting the water sector and is closely linked to public opinion. In EECCA countries tariffs for water and wastewater services are set by local governments. For this reason, instead of being an important *financial* tool for water utility development, water price is commonly considered a *political* instrument to win support and sympathy of the local voters, particularly in the periods prior to or during local election campaigns.

Naturally any consumer prefers to pay the lowest possible price for any good or service. But making political decisions based on such a short-sighted basis endangers the longer-term viability of water utilities and thus their ability to provide consumers with good quality water services, which may come into conflict with general public interests. Therefore, any policies to maintain or improve the service affordability for household consumers should not undermine the economic sustainability of water supply and wastewater service providers. In other words, tariff-setting authorities must seek the "golden section" to ensure a *balance of interests* for all participating parties. Policy-makers need to combine a thorough analysis of the affordability problem with sound political judgement. This general approach in practice should be translated into transparent operational rules minimising the discretionary powers of the tariff setting authorities and requiring utilities to elaborate programmes which meet present and future demand at minimum cost, subject to affordability criteria.

1.2 Measuring Economic Affordability

This section will identify the main parameters of water supply and sanitation services and prices. It will present available methodologies for measuring ability to pay at macro and micro levels, as well as the methodologies for the willingness to pay analysis. This section will also provide the results of affordability analyses in EECCA countries.

1.2.1 Access, Quality and Costs of Water Supply and Wastewater Services

To analyse affordability of water services, there is a need to clarify the key parameters of the service. For water supply and sanitation services, these would include access to the service or its availability, the quality of service and its price.

Technical Access to Centralised Water and Wastewater Services

According to official statistics, a rather large share of the EECCA population has access to the centralised potable water supply system. The coverage of urban residents with centralised water services exceeds 90% in Belarus, Georgia, Kazakhstan, Kyrgyz Republic, and Uzbekistan, and is somewhat lower in Russia, Turkmenistan, and Ukraine (78% to 86%). In rural areas, the coverage by centralised water services ranges from a low of 17.9% in Ukraine to the very high 83.3% in Uzbekistan. Access to water supply in EECCA can be considered high compared to countries with similar levels of income.

It should be noted, however, that EECCA countries use various approaches to calculating such indicators as "provision of the population with centralised water and wastewater services". For example, calculations for Ukraine take into consideration only residents whose dwelling units are directly connected to the water supply system and ignore those consuming water from public standpipes. Besides, EECCA countries use another indicator: "percentage of cities and towns equipped with centralised water supply systems." Usually, this indicator is high and incompatible with the "percentage of the population enjoying access to water supply services". The methodology of calculating this indicator is not available to the authors. Better harmonisation of methodologies is needed to ensure comparable information.

Table 1.6. Provision of the Population with Centralised Water and Wastewater Services in EECCA Countries as of 2001 (% of the Population)

Country	*Water*		*Wastewater*	
	Cities	*Rural Areas*	*Cities*	*Rural Areas*
Azerbaijan	81	17	65	
Armenia (ArmVodokanal)	93 to 95	50.0	60-80	5 to 10
Belarus	98.6	70.4	97.7	62.0
Georgia	90.0	20.0	75.0	10.0
Kazakhstan	92.0	21.0	71.0	5.0
Kyrgyz Republic	95.7	76.3	29.1	
Moldova	97/60/30[14]	7.0	75/50/20	0.0
Russia	86.0	39.0	84.0	30.0
Tajikistan	No data	No data	No data	No data
Turkmenistan	80.8	28.5	61.8	2.0
Uzbekistan	97.3	83.3	92.9	58.6
Ukraine	78.3	17.9	76.7	12.9

Sources: Ministry for the Housing and Communal Service Sector of Azerbaijan; ArmVodokanal; Ministry of the Housing and Communal Service Sector of Belarus; Ministry for Environment Protection, GruzVodokanal; Kazakh Statistics Agency; Aquaproject Institute, Moldova (survey data); State Committee for Statistics of Russia; Russian State Construction Committee; Research Institute for Methodology and Communal Service Sector Development within the Cabinet of Ministers of Turkmenistan; Ministry of Macro Economy and Statistics of Uzbekistan; State Committee on Housing and Communal Services of Ukraine.

[14]. Cities with the population over 50 thousand/cities with the population 25 to 50 thousand/cities with the population below 25 thousand.

The share of the population enjoying wastewater services is much smaller. This becomes particularly apparent in rural areas. The percentage of residents having access to centralised wastewater services is extremely low in Turkmenistan, Kazakhstan, Armenia, and Moldova (below 10%). It should be noted that being connected to the wastewater system does not necessarily means that the wastewater service includes wastewater treatment.

This analysis demonstrates that in order to meet the Millennium Development Goal and reduce by half the number of people without access to water supply and sanitation services by 2015 EECCA countries need to focus at ensuring the quality of services to the consumers already connected to public services, as well as provide technical access to those who do not have it at present.

Quality of Services

Technical connection to the public water supply or sewerage system does not mean that the service is actually or fully provided. In many EECCA countries, consumers complain that the water provided by the public water supply systems is of low quality and cannot be used for drinking; there are also often interruptions in water supply due to low pressure or accidents. As mentioned earlier, not all collected wastewater undergoes treatment. Therefore, the quality of drinking water and the quality of services have a high impact on consumers' willingness to pay.

The quality of drinking water, water consumption standards and wastewater treatment requirements are among the most regulated areas in theory, but rarely the services are provided in compliance with these requirements. These quality requirements are often outlined in legal acts, most of which date back to Soviet times and are outdated. Wastewater treatment requirements are overly stringent and economically unrealistic; the control of drinking water quality at the tap remains an unresolved issue, and consumption norms are often very high and cannot be controlled due to lack of metering.[15]

Some EECCA countries have taken steps towards reforming their legislation in this area: new laws regulating provision of water and wastewater services were adopted in Belarus, Kyrgyz Republic, Moldova and Ukraine; the Law on Drinking Water in Russia is under preparation. Russia, Ukraine, and Kyrgyz Republic have approved new sanitary regulations and standards setting requirements to the quality of water and wastewater, which are harmonised with

[15]. For more information on these issues, refer to respective projects of the EAP Task Force www.oecd.org/env/eap/

relevant World Health Organisation (WHO) standards. Ukraine is considering ways to bring its standards of potable water and urban wastewater treatment into compliance with the standards defined by EU Council directives.

The current EECCA legislation does not provide clear definitions of the quality of water and wastewater services. However, in each country there are lists of consumer parameters (or qualitative indicators) and guidelines concerning the regime for providing the services, volumes of service consumption, procedures and deadlines in case of accidents, permissible cut-off periods, etc. Lists of such parameters are approved by a number of government agencies, including housing and communal services, environmental protection and health authorities. EECCA national legislation delegates quite broad authority to local bodies of the executive power in terms of adjustment of individual characteristics of service levels. Annex 1 lists the service quality indicators legislated by Russia, Ukraine, Moldova and Kyrgyz Republic.

In all EECCA countries (except Turkmenistan[16]) the bill for water and wastewater services should reflect the quality of services and volume of consumption. In cases where the actual service quality parameters deviate from requirements stated in the regulatory documents, the charges must be adjusted downward. However, this regulation remains on paper due to the lack of effective monitoring of service quality.

This analysis demonstrates that there is a need to clarify and streamline regulations on the quality of water supply and sanitation services. Key indicators presented in Table 1.7 provide possible options and could provide the guidance for national and local authorities.

[16]. The Turkmenistan legislation caps free water consumption at 250 liters per day per capita.

Table 1.7. Water and Wastewater Service Quality Indicators

Quality Indicator	*Service*	
	Water	*Wastewater*
Access to services	*Service Coverage* – percentage of the population having access to water service • With direct service connection • Or public standpipes located within 200 m of the user's dwelling [17]. Households using bottled water or water imported in tanker trucks for drinking and domestic needs will be excluded from this accessibility indicator (WHO/UNICEF, 2000). However, provision of bottled or tanker truck-provided water may have no immediate alternatives under some conditions, and can be acceptable under this indicator.	*Service Coverage* – percentage of the population having access to wastewater service (through direct connection to the local wastewater system at home).
	Service quantity (in litres per day per capita) may be expressed through: • Actual consumption for metered customers. • Normative quantity, which is defined by the physical capacity, structure and depreciation levels of the capital assets of the service provider as well as to climate and other specific conditions of a given locality. • Lifeline (or minimum) consumption standard, for example, 15 to 20 litres per day per capita.[18]	*Service quantity* (in litres per day per capita) may be expressed through: • Actual service consumption by metered customers. • Normative quantity, taking into account the physical capacity, structure and depreciation levels of capital assets of the service provider as well as climate and other specific conditions of a given locality.

[17]. WB Benchmarking Start Up Kit, Water and Sanitation Performance Benchmarking Indicators. Water and Sanitation Division the World Bank. An alternative indicator for "reasonable access" is offered by WHO/UNICEF (Joint Monitoring Programme for Water Supply and Sanitation, 2000), as follows: "availability of at least 20 to 50 litres per person a day (the minimum requirement variable depending on the local climate conditions and actual daily hygienic needs), from a source within one kilometre of the user's dwelling".

[18]. Some studies offer other lifeline consumption standards, for example: "At least 10 liters per day per capita": Sandy Cairncross, Michel Girbert, Barry Lloyd. Water

Quality Indicator	*Service*	
	Water	*Wastewater*
Service provision regime[19]	• Uninterrupted round-the-clock water supply during the period specified by a contract. • For scheduled water supply, service interruption should not exceed 30% of the total water supply time, provided water is cut off not more than 2 times per month. • Permissible total cut-off time of water supply service must not exceed eight hours a day.	• Uninterrupted wastewater services.
Pressure	• Water pressure should not be lower than 0.6 kg-force/cm^2 (60 kPa)[20], as required to prevent secondary microbe contamination of potable water.	
Quality	• Water and wastewater composition and quality must comply with national quality standards, sanitary rules, and hygienic regulations. • Key parameters of the water and wastewater quality must comply with relevant World Health Organisation standards (WHO, 1996) or, for European countries, meet requirements set by EU Council directives (1980, revised version) and the Water Framework Directive (2000).	

Source: See footnote references for each indicator

Quality Standards. Prepared for the Workshop on Water and Health, UNED-UK Setting the Freshwater Agenda for the 21st Century, 16 June 1999; or "at least 15 to 30 liters per day per capita": Walter Wiederkehr, The Ten Theses for a Potable Water Tariff Policy, International Water Suppliers Associations (Budapest, 1993).

[19]. These parameters are listed in the Rules for Provision of Communal Services which are currently in effect in the NIS region. They effectively compile the indicators recommended by different newly independent states (Russia, Moldova, Ukraine, the Kyrgyz Republic and Belarus). For your reference: "Municipal water supply and wastewater disposal systems shall not be qualified operable when their actual operational daily workloads comprise less than 50% of their design daily capacity", WHO/UNICEF (2000).

[20]. Parameter, specified in the Rules for Provision of Communal Services in Ukraine. The report on "Key issues in Municipal Tariff Reform in the EECCA" give the following recommendation: "Water pressure shall not be lower than 1.5 Bars to prevent water contamination by back flow", EAP Task Force/OECD, 2002.

Cost of Services and Tariff Regulation

While EECCA countries have declared that service costs should reflect the full economic cost of services for the society, this principle is not implemented in reality. The definition of "full costs" is not well defined in most EECCA countries; only some operational and maintenance costs are currently treated as legitimate costs of utilities, while investments are rarely included in the full cost definition. Ukraine has recently provided an example of establishing a definition of full economic costs, which can provide a useful guidance to other EECCA countries. This definition covers accounting costs (including direct and indirect, fixed and variable production costs), operating cots (administration, billing and collection, and other operating costs), financing, capital and tax costs (see Annex 8). It should be noted that the actual economic cost of services is so high that it can hardly be recovered from the tariffs charged to the current generation of customers.

Most EECCA countries use the "cost-plus" method for tariff calculation and regulation, when profit is calculated as a percentage of the total costs. As a result, this method does not encourage service providers to reduce production costs. In practice, regulatory bodies exercise strict supervision over the cost elements included in tariff estimates, and this supervision has recently resulted in growing bureaucracy and political wrestling over the issue of whether or not tariffs are overstated and unreasonable. Such terms as "tariff audit" and "tariff expertise" are now commonly used by regulatory bodies, though the service quality on the consumption side still leaves much to be desired.

In order to ensure that tariffs provide incentives for water utilities to reduce costs and for consumers to save water, some OECD countries use incentive regulation methods, such as price caps to regulate tariffs. Ukraine has recently provided for such a regulatory option. This method can provide incentives for water utilities to reduce costs, but implementation of incentive regulatory methods requires significantly improved regulatory capacity. [21]

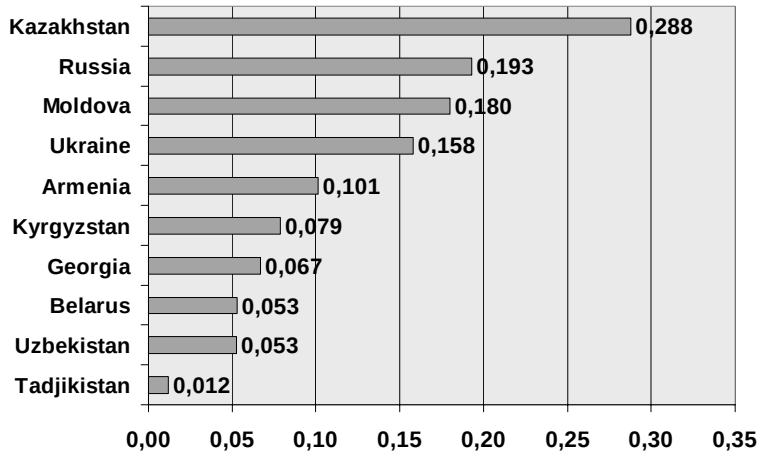
Price of Water Services in EECCA

Tariffs for water and wastewater services vary across EECCA countries reflecting national conditions, including availability of water resources and income levels, pace of water sector reform and utility performance as well as the level of social protection. For example, the price for 1 m^3 of water is lowest

[21]. For more information on tariff regulation, please refer to the EAP Task Force/OECD, 2002, Key issues in Municipal Water Tariff Reform in EECCA.

in Tajikistan (a little more than one US cent); in Uzbekistan and Belarus it is some five cents; residents of Georgia and Kyrgyz Republic pay seven to eight cents. Kazakh tariffs (around 30 cents) appear to be relatively high against this background.

Figure 1.2. Tariffs for Water and Wastewater Services for Households in EECCA Countries in 2001 ($/m^3)



Source: National experts (see Annex 3)

Box 1.1. How Much Does a Cubic Meter of Water Cost in OECD Countries?

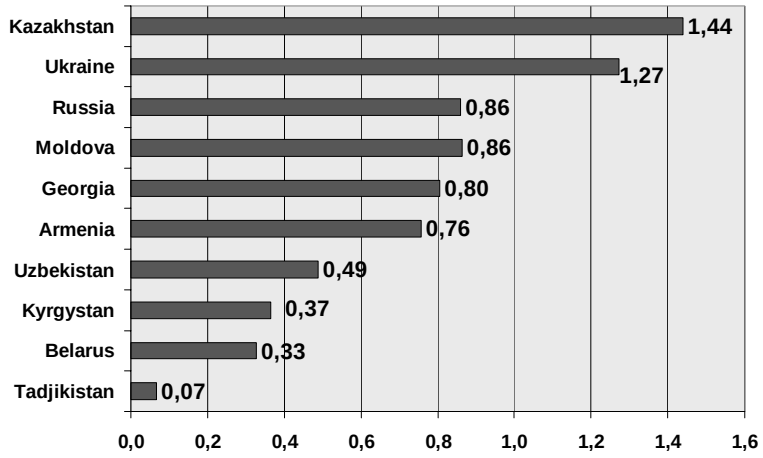
Despite rapid growth of tariffs for water/wastewater services in former Soviet republics over the last decade, they are still much lower than the cost of 1 m^3 of water in OECD countries. As statistics show, residential tariffs are characterised by differentiation across countries ranging from $0.60 per m^3 in Italy to $5.10 per m^3 in Norway. Therefore, the highest cost exceeds the lowest by almost nine times. In addition to Italy, water services are relatively low (by OECD standards) in Canada ($0.77), Greece ($0.84), Spain ($0.89) and such post-communist countries as Czech Republic ($0.99 per m^3). The cost of 1 m^3 of water slightly exceeds one dollar in Hungary and Poland ($1.09), whereas residents of Sweden, Netherlands and Germany have to pay almost three times as much ($2.86 to $3.47).

Source: Social Issues in Provision and Pricing of Water Services, OECD, 2003.

EECCA countries also vary by such indicator as the established consumption norm. The water consumption norm ranges from 4.8 m^3 per person per month in

Moldova to 12 m^3 per person per month in Georgia. The wastewater service differentiation is even more notable: from 3 m^3 per person per month in Tajikistan to 12 m^3 per person per month in Georgia. Price of water services for consumers without water meters is calculated by multiplying the tariff by the consumption norm. Therefore differences in water consumption norms influence countries' ranking by cost of water per household (see Figure 1.3). The statistics indicate that Tajiks pay the smallest rate – seven cents per person per month. At the same time, residential customers in Kazakhstan and Ukraine have to pay more than one dollar a month ($1.44 and $1.27 respectively).

Figure 1.3. Costs of Water and Wastewater Services in EECCA Countries in 2001 (USD per Person per Month)



Source: Authors' calculations based on data from national experts (see Annex 3)

In order to ensure sustainable and efficient provision of water and wastewater service to consumers, price for water and wastewater services will need to be increased. Maintaining and increasing the quality of services would require that prices cover all cost, including investments. Extending water supply and sanitation services in line with the Millennium Development Goals would require major investments. Efforts to improve cost efficiency, e.g. through better tariff regulation, could help to soften this price increase. Affordability analysis is needed to identify a realistic level of tariffs and the assistance required by the state.

1.2.2 Ability of Consumers to Pay for Water Supply and Sanitation Services

A household is considered unable to pay for water and wastewater services if paying would require a considerable reduction of expenses for other essential goods and services (food products, health, education etc.).[22] In other words, charges for these services should not become an intolerably large expenditure item in the household budget. Therefore, ability to pay analysis is associated primarily with identification of the maximum level of expenses for water and wastewater services households can afford.

Two main types of analysis for estimating the burden of payment for the family budget could be applied to the water supply and sanitation sector:

- Assessment of the current burden of payment based on macro economic data, by calculating the share of average water charges in average household income, i.e. at the level of society as a whole.
- Assessment of the current burden of payment based on micro economic data, by calculating the share of water charges in the income of individual households or groups of households (deciles or quintiles, regions or cities, family types such as social security recipients), i.e. at the household level.

1.2.3 Ability to Pay at the Country Level

Analysis of the average burden of the water bill, or macro-affordability analysis aims to assess the *actual average burden* of a service for the population of a country *on the whole*. Depending on the category of macroeconomic data available, the following approaches may be used:

- Share of the water and wastewater service bill in average household income (disposable or gross income); or, in the case when household income data are inaccessible or unreliable, in average household expenditures.
- Analysis of household expenditure structure as an indicator of household well-being.
- Household payment discipline as a response to tariff rise (the level of non-payment).

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[22]. It should be noted however that defining “considerable” reduction and “essential” goods and services remains a challenging task, and there is no universal definition applicable for all situations.

Approach 1. Ratio of the Water and Wastewater Bill to the Average Household Income or Expenditure

Macro-affordability is most often measured by relating household water and wastewater costs to average household aggregate incomes or expenditures.

$$X = \frac{W_s}{Y} \cdot 100 \qquad (1.1)$$

X = actual burden of the water bill for a statistically average household (%)
W_s = average monthly charges for water and wastewater services (per one household)
Y = average monthly incomes/expenditures per one household

Several variants of the above formula may be used, e.g.:

1. Using the cost of water service and the cost of wastewater service separately as the numerator.
2. Using median rather than average incomes/expenditures as the denominator.
3. Sometimes, the use of per capita GDP is proposed for the denominator in formula (1.1). But the ratio of water charges to average per capita GDP would serve as a poor substitute for the aggregate ability-to-pay measure, as it hides widespread informal income. Use of this indicator may be justified only in cases where no data on average household incomes/expenditures are available in the country.
4. In countries with a serious problem of residential customers' *indebtedness*, it would be reasonable to adjust the actual expenditures (the numerator) with regard to collection rate, i.e. consider amounts charged rather than payments actually effected.[23] In this case, it is possible to abstract from unpaid services and determine not 'how much people have paid' but 'how much they *have to pay*' according to the actual cost of services delivered.
5. As statistics on expenditures of population on water services in EECCA countries are not very reliable (it is typically difficult to 'isolate' these expenditures from the total amount of payments for all housing and communal services), the numerator may be estimated. In this case, it will represent the sum of water and wastewater charges to households, and will be determined by the formula:

$$W_s^* = C \cdot hhsize\,, \qquad (1.2)$$

[23]. In this case, the formula (1.1) numerator will be defined as $\frac{W_s}{0{,}01k}$, where k = collection rate for water/wastewater services (%).

W_s^* = estimate of average monthly charges to household ($/household)
C = average weighted monthly cost of water/wastewater services per capita
hhsize = size of a statistically average household (persons)

In those countries where there are no available statistics on the average weighted monthly cost of water/wastewater services per capita, it may be calculated in the following way:

$$C = tariff \cdot norm, \quad (1.3)$$

tariff = country-wide average weighted tariff for water and wastewater services to residential customers ($/m^3)
norm = country-average weighted *norm* of water/wastewater service consumption applied to non-metered households, which have to pay for these services according to established standards (m^3/person/month)

The low level of water meters usage in households in EECCA countries, except in Moldova, justifies the use of the average weighted norm in calculations. Where a significant part of a country's population is metered, another factor, 'average weighted *consumption level*,' should be used instead of the average weighted *norm*. This is determined taking into account the share of metered population and the average actual water volume consumed by metered households (also measured in m^3/person/month).

For example, in Moldova, the water consumption norm established for non-metered households (30% of all households) is 9 m^3/person/month. At the same time, 70% of households are metered and pay for water actually consumed (which is one-third of the norm on average – 3 m^3/person/month). Thus, the '*average weighted consumption level*' in the country will be $0.3 \cdot 9 + 0.7 \cdot 3 =$ 4.8 m^3/person/month. Having determined this factor, the average water charges to a statistical average household in the country (W_s^*) can be easily estimated using formulas (1.2) and (1.3). This indicator will be used as the numerator in formula (1.1).

Estimates of actual burden of water and wastewater expenditures for residential customers in EECCA countries are provided in Table 1.8. The calculations were done using formula (1.1), in which the nominator for Russia was calculated using formula (1.2) and for other countries using formula (1.3).

Table 1.9 provides similar indicators for the OECD countries, for comparison.

Table 1.8. The Water/Wastewater Charges Burden as Percentage of Household Aggregate Incomes/Expenditures in EECCA Countries (2001)

Country	*Expenditures on water/wastewater services, $/household per month*	*Aggregate household incomes/expenditures, $/month*	*Charges as percentage of incomes/expenditures*		
			Water	*Wastewater*	*Water & Wastewater*
Armenia	3.09	112.53 (incomes)	2.26	0.49	2.75
Belarus	0.85	138.11 (incomes)	0.37	0.24	0.62
Georgia	3.09	126.76 (expend.)	1.93	0.51	2.44
Kazakhstan	5.18	233.35 (expend.)	1.07	1.15	2.22
Kyrgyz Rep.	1.57	66.82 (incomes)	1.70	0.65	2.35
Moldova	2.48	50.32 (incomes)	...	...	4.48
Russia	2.67*	314.7 (money incomes)	…	…	0.84
Ukraine	3.47	113.05 (expend.)	1.86	1.22	3.07
Uzbekistan	2.68	116.22 (money incomes)	1.14	1.17	2.31
Turkmenistan	0.0				0.0

Authors' calculations based on data from national experts (see Annexes 2, 3, 5).

Source: Housing and Communal Services in Russia. State Statistics Committee of Russia, 2003.

Table 1.9. The Water/Wastewater Charges Burden as Percentage of Household Aggregate Incomes/Expenditures in Selected OECD Countries

Country	*Year*	*Denominator*	*Charges as percentage of incomes/expenditures*		
			Public Water Supply	*Sewerage and sewage treatment*	*Water charges (proportion of income or expenditure)*
Poland	1999	Disposable income			2.2-2.4
Hungary	2000	Net income	1.4	0.7	2.1
Turkey	1997	Income			1.2-1.7
Netherlands	1999	Disposable income	0.6	0.8	1.4
Mexico	2000	Disposable income	1.3		
Germany	2000	Disposable income	0.5	0.7	1.2
Denmark	1998	Disposable income	0.5	0.6	1.1
France	1995	Income			0.9
Slovak Rep.	2001	Net income			0.9
Japan	2000	Expenditure			0.7
Italy	1997	Expenditure			0.7
Korea	1997-1998	Expenditure			0.6
United States	2000	Disposable income			0.5

Source: OECD

To a certain degree of accuracy, the above data allows an assessment of the burden of water bills in family budgets. Macro-affordability varies from 0.62% in Belarus to 4.48% in Moldova. On the whole, *high* values of this measure mean a high cost of water in relation to average incomes/expenditures and thus relatively *low* average affordability (Moldova and Ukraine). At the opposite end

of the spectrum, *low* values of macro-affordability tend to suggest high average affordability (Belarus and Russia).

Comparison of the data in the last column of Table 1.8 with data on current volumetric tariffs and water costs (Figures 1.2 and 1.3, respectively) shows that:

- The highest absolute expenditures on water per one household member (e.g. Kazakhstan) are not necessarily high relative to household income.
- Relatively low water/wastewater tariffs (e.g., in Uzbekistan and Georgia) are sometimes associated with the cost of these services being rather high relative to household income.

Affordability Criterion

To judge whether a service is affordable or not, it seems convenient to have an a*ffordability criterion*. Such a criterion could be set at the maximum income/expenditure share that households are able to spend on the water/wastewater services without jeopardising their consumption of other essential goods and services.

In practice, this is a very difficult task. Establishing such a criterion for an average measure is very problematic, unless very good data about the distribution of income is available. In principle, the affordability criterion may be established for the poorer section of the community. Even in this case, the level can vary between the criterion for the lowest decile and the criterion for the lowest 1% of the income distribution, as virtually all the expenses of this income group are essential.

It should be stated that there is no universal or international criterion of affordability, as it is impossible to have one measure that would satisfy all countries and regions with their diverse local conditions. In practice, there are many indicators and judgements on this subject. Water supply and sanitation charges in OECD countries usually do not exceed 1.5% of the household expenditures, and some experts believe that these services could be considered very expensive at 3% to 5%. Even when on average water supply and sanitation services do not seem very expensive for the average OECD households, they can be already expensive for the lowest income group (e.g. average burden is 0.85% of gross income in England and Wales, but 3.75% for the lowest decile)[24] (see Table 1.10).

[24]. "Improving Water Management, Recent OECD Experience", OECD, 2003.

Table 1.10. Comparison of Water Charge Burden for Different Income Groups in the OECD Countries

Country	*Year*	*Percentiles or number of classes*	*Disposable income as a basis for measurement of water charge burden*	
			Burden of lowest income group	*Ratio of lowest income group burden to average burden*
England and Wales	1999-2000	Deciles	3.75	3.1
Mexico	2000	Deciles	3.84	3.0
Hungary	1999	Deciles	2.53	1.4
Scotland	1999-2000	Deciles	2.24	<2.9
France	1995	Nine	2.18	2.5
Netherlands	1999	Quartiles	2.38	1.7
Denmark	1998	Six	1.93	1.7
Italy	1995	Six	0.90	>2.1
United States	2000	Quintiles	0.66	1.3

Source: OECD

In assessing small water supply systems' compliance costs in meeting proposed new drinking water quality regulations, the United States Environmental Protection Agency (USEPA) stipulates that a utility's median household water and wastewater bill should not exceed 2.5% of median household income[25].

Another criterion is often used by IFIs, including the World Bank and the EBRD: average water/wastewater charges must not exceed 4% of average household income. However, while charges in excess of 4% indicate potential affordability problems, adherence to this figure by no means serves at any time as sufficient grounds for a conclusion that there is no such problem in the country. The use of such an indicator for decision-making could be misleading, as it may hide serious income distribution disparities. Besides, it cannot reflect a possible simultaneous price rise for other essential goods and services (e.g., increase in tariffs for gas and electric power), in which case even 4% may become too heavy a burden.

The task of defining such a criterion is anything but easy, and requires a thorough and comprehensive analysis based on empirical data at the level of specific countries. At this stage, it is not possible to set such a criterion for the EECCA region or selected countries.

[25]. USEPA: Information for States on Developing Affordability Criteria for Drinking Water, February 1998.

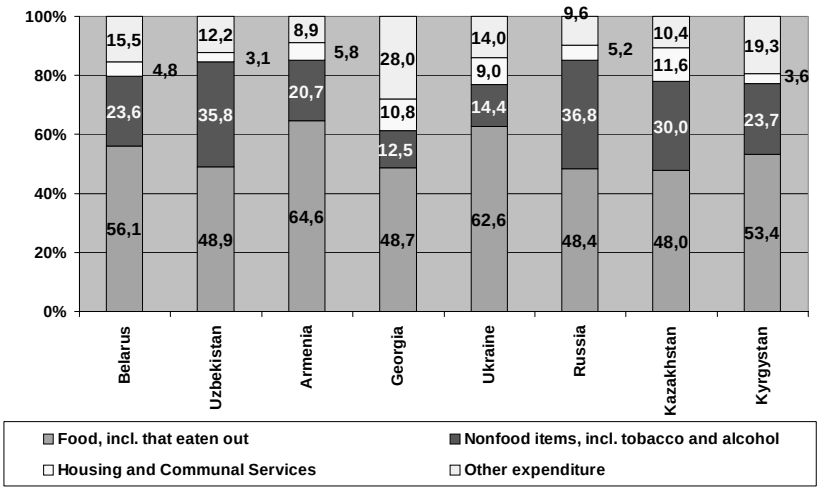
Approach 2. Analysis of Household Expenditures Structure as an Indicator of Well-being

The structure of household expenditures can be used as a good indicator of well-being. According to a World Bank structural criterion used for international comparisons, households spending 60% or more of their expenditures on food are considered poor, and when this figure reaches 80% - absolutely poor. Poor and absolutely poor families will find it difficult to pay for communal services.

In EECCA countries, food is the largest household budget item (see Figure 1.4). In Ukraine and Armenia, citizens have to spend more than 60% of their household budgets on food, in Belarus and Kyrgyz Republic, 50% to 60%, and in Russia, Uzbekistan, Georgia and Kazakhstan, nearly one half. According to the structural criterion of poverty, only Ukraine and Armenia may be classified as poor countries among EECCA, i.e. affordability problems can allegedly arise only in these two countries.

This conclusion does not look sound. This is confirmed by an analysis of data on the share of food in household budget structure in industrialised countries, where food accounts for a much smaller share than in EECCA countries but the ability-to-pay problem is, nonetheless, present.

Figure 1.4. Household Expenditures Structure, 2001



Source: National sample income/expenditure surveys (see Annex 5)

Since this approach is rather limited, any conclusions based on it cannot reflect the actual ability-to-pay situation to the full extent. The above approach can be useful as an auxiliary approach, as a benchmark able, to a certain degree of accuracy, to indicate *probable occurrence* of affordability problems. In other words, if food accounts for 50-60% of household budget, then, naturally, there is not much room for any increase in water charges.

The usefulness of this method could be enhanced, if the share of expenditures on water were determined in so-called *residual income* of household (household disposable income net of expenditures on food). This would serve as an indicator of household ability to pay for water and wastewater services without trimming food expenditures. Water charges exceeding 10% of household residual income are considered a signal of probable affordability problems.[26] Regrettably, the statistics available in EECCA countries do not allow testing this assessment method.

[26]. Water Prices in CEE and CIS Countries: A Toolkit for Assessing Willingness to Pay, Affordability and Political Acceptability. COWI, 2001.

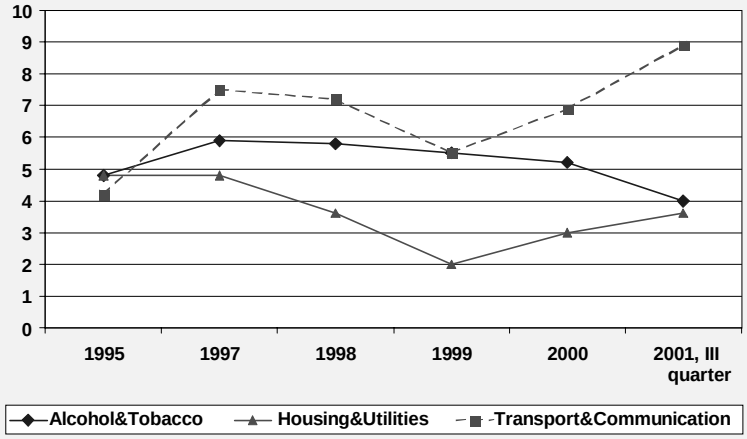
Box 1.2. How Does a Statistically Average Family in Belarus Spend its Budget?

A statistically average family spends about 60% of its expenditures on food. Public transport services account for 2.6% of expenditures, maintenance of a private vehicle, 3.7%, purchase of a car, 1.4%, and communication services, 1.5%. Educational services, kindergarten, culture, recreation, and sports together account for 3.2% of expenditures.

According to statistics, in 1997-2001, Belorussian families spent on average more on alcohol and cigarettes than they spent on housing and communal services. However, as of mid 2002, the share of these services in household budget had increased up to 7.1%.

It is noteworthy that, in the expenditure structure of the best-off quintile of Belorussians in 2001, transport and communication accounted for 12%, whereas housing and communal services were as low as 2.7%.

Expenditures on Some Goods and Services as a Percentage of Consumer Expenditures of a Statistically Average Belorussian Family



Source: E. Rakova, "*Tariff Rise: Just Started"*, February 9, 2002, www.uspb.org

Approach 3. Household Payment Discipline as a Response to Tariff Rise

Some experts suggest that changes in compliance rate resulting from increases in water charges be used as indirect indicators of macro-affordability. However, this approach will be valid only in countries where non-payment entails strict financial and other sanctions. If no such measures are in place, then the true reason for worsened compliance will be difficult to establish: some people will

not pay just because they are sure they are not going to be punished, and others, because the new price has made the service unaffordable.

Today, no fine is added for late payment for services in many former Soviet republics (Ukraine, Georgia, Armenia, and Moldova). Disconnection of non-payers is not widely used, because it is difficult to implement from the technical point of view. Therefore, people may opt not to pay or to pay partially, thus rendering impractical any macro-affordability analysis based on changes in compliance in response to an increase in tariffs.

Application of Macro-Affordability in the EECCA countries

In EECCA, there are no established methodologies or requirements to analyse water affordability for consumers. This is partly due to the novelty of the affordability problem, and is based on the practice wherein consumers pay one integrated bill for all communal services (rent, electricity, heating, water, etc.). In some EECCA countries, which have implemented the housing subsidy programme, there is a certain experience in assessing affordability of *all* housing and communal services combined. Housing subsidies are granted based on a special eligibility criterion expressed as the maximum percentage of expenses for housing and communal services in the total household income.[27]

Estimates of actual payments by households to pay for water supply and wastewater services based on macroeconomic data can provide useful input for international comparisons as well as for the first (global) indications of the existence or emergence of water affordability problems. Macro-affordability estimates are easy to calculate, can be based on available statistical data and do not require significant resources.

But macro affordability analysis has serious limitations. Average values may hide serious problems faced by low-income households, who live below the poverty line and need social assistance. Country-average indicators say nothing about the distribution of water bill burden across regions and municipalities where water price or consumption norms exceed respective country-average values or household incomes are significantly lower. In other words, country-average indicators say nothing about the situation of worst-off households, the regional differentiation of affordability, or the affordability of services provided by individual utilities. For these reasons, macro affordability data provide little help for the tariff setting process at the local level. In addition, country-average indicators do not allow the analysis of affordability by household types (e.g.,

[27]. Housing subsidies are discussed in detail in Chapter 2 of the report.

households of pensioners, households with children or unemployed, etc.), whereas this information may be very useful for social policy development.

The following data is required to carry out a macro-affordability analysis:

1) Average monthly aggregate household income (or expenditures, where the latter data is more reliable).
2) Average monthly household expenditures on water/wastewater services.
3) Average cost of water and wastewater services per capita per month (or average weighted tariff and average weighted consumption norm).
4) Share of metered households, and average actual consumption by these households.
5) Household expenditures structure (specifically percentages of expenditures on food and water/wastewater services).

Also useful will be information on average household size, level of residential indebtedness, and residential collection rate.

1.2.4 Ability to Pay for Selected Groups of Consumers

Micro-affordability indicators are a breakdown of macro-affordability by:

1) *Regions (oblasts)* of country; this will allow identification of territorial units that face, or might face in the future, water/wastewater affordability problems (e.g., even with affordable services in the country on average, there may be significant affordability differentiation across the country).
2) *Cities* or *water/wastewater utilities* (this will allow the measurement of the affordability of services provided to residents of specific cities or customers of specific utilities).
3) *Income/expenditures level*s of service customers (in order to find out how burdensome water charges are to worst-off households).
4) *Types (qualitative composition) of households* (in order to identify the most socially vulnerable, i.e. those for whom the problem of paying for water is most serious and who need social protection first and foremost).

Approach 1: Analysis of Household Distribution by Water Charges as a Percentage of Aggregate Household Expenditure

Where detailed data on household expenditure is available, it is possible to analyse the household distribution by water charges as a percentage of aggregate household expenditure. This information can typically be obtained from nation-wide sample surveys of household incomes and expenditure. The required information was only available for Armenia, Kyrgyz Republic and

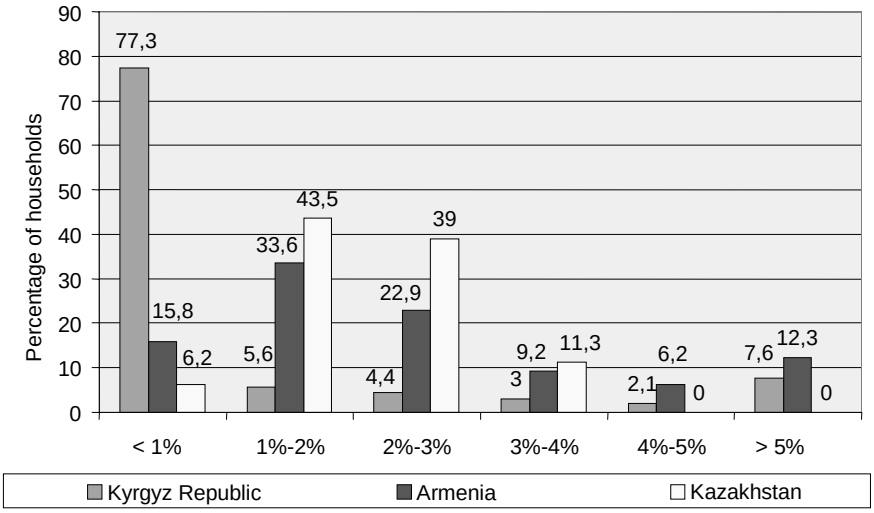
Kazakhstan, thus this method was tried only for these three countries (Figure 1.5).

According to the Kyrgyz statistics on water bills actually paid, an overwhelming majority (77.3%) of the country's population spent not more than 1% of their aggregate household expenditure on water, and a relatively small proportion (9.7%) had to spend more than 4%. If the 4% criterion is applied, then water affordability should not appear to be too serious a problem in this country.

The situation is somewhat different in Armenia. Half of Armenian households (49.4%) dedicate up to 2% of their aggregate expenditure to water and wastewater services, and nearly 23% of households dedicate 2% to 3%. Water costs in excess of 4% were reported by 18.5% of families. This indicates that almost one-fifth of the entire Armenian population may face affordability problems.

In Kazakhstan, by contrast, the cost of water and wastewater services to residential customers never exceeds 4% of aggregate household expenditure, with an overwhelming majority (82.5%) of households spending 2% to 3% of their budgets on water.

Figure 1.5. Distribution of Households by Water and Wastewater Charges as a Percentage of their Aggregate Expenditure, 2001



Source: National sample income/expenditure surveys reported by national experts

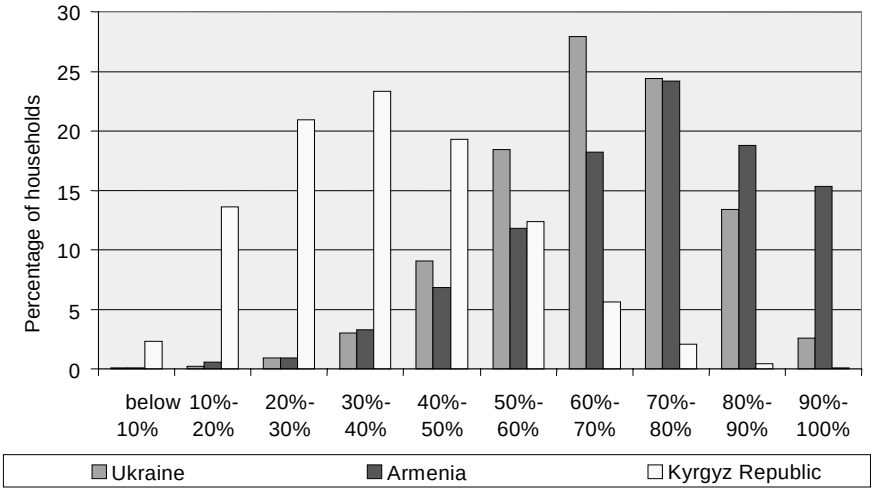
It is important to stress that the above statistics consider only bills actually paid, and not the charges as per bills due. Use of charges would have made estimates

reflect the ability to pay to a fuller extent. Therefore, there is every reason to believe that the water affordability is a more acute problem in reality.

Approach 2: Analysis of Household Distribution by Expenditures on Food as a Percentage of Aggregate Household Expenditures

Such a distribution allows the determination of the share of households who have to spend most of their budgets on food, thus moving into the 'risk group' with regards to affordability of water and other communal services. Figure 1.6 shows the household distribution by food expenditures in three EECCA countries. Using the 60% criterion as a poverty line, we may conclude that water and wastewater affordability problems are quite probable with 8% of the Kyrgyz population, as they spend 60% or more of their household budgets on food.

Figure 1.6. Distribution of Households by Food Expenditures as a Percentage of their Aggregate Expenditures, 2001



Source: National sample income/expenditure surveys reported by national experts

At the same time, serious difficulties can also be faced by households in Ukraine (68% percent have to spend more than 60% of their disposable income on food) and Armenia (76% are behind the 60% threshold). The household distribution in Figure 1.6 is thus a better indication as compared to country-average data on macro-affordability (see, e.g., Figure 1.4), allowing identification of that part of the population which finds payment for services an overburden right now. Like with macro-affordability, data on water charges as a percentage of household residual income would be more informative.

Approach 3: Ability-to-Pay Analysis at the City/Utility Level

Even more illustrative are the results of ability-to-pay analyses for residential customers of specific cities/utilities.[28] In order to obtain information needed for such analysis and to ensure reliability, a special survey of residential customers has to be carried out with a particular focus on the charges billed to consumers by the utilities.

Such a survey was carried out in the city of Khmelnitsky, Ukraine. The average affordability indicator of water and wastewater in the city is 2.4%, and thus does not indicate an affordability concern (Table 1.11).

Table 1.11. Housing and Communal Services Charges in Khmelnitsky

Item	*Charges in 2001*	
	UAH/household/month	*% of aggregate incomes*
All housing and communal services including:	93.3	14.7
• Centralised water/wastewater services	15.3	2.4
• Centralised hot water/heating services	44.4	7.0
• Other services (rent, gas, power etc.)	33.6	5.3

Note: Average weighted exchange rate in 2001 was $1/UAH 5.37

Source: Are Households Willing to Pay More for Better Services? / Results of Effective Demand Modelling for Communal Services / O. Romanyuk, V. Sarioglo and others. PADCO/USAID, Kiev, 2002.

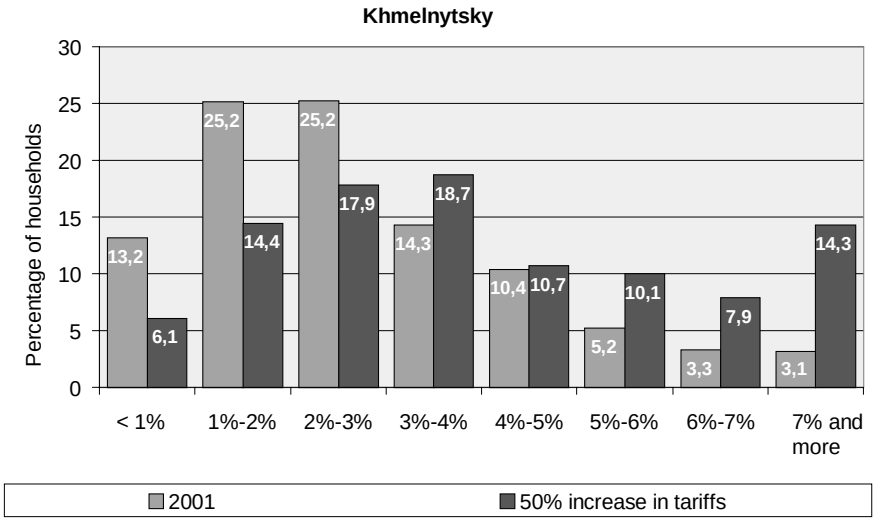
The picture, however, becomes different if we analyse the water charges burden for individual households (Figure 1.7). This analysis demonstrates that 22% of households spend more that 4% of their income on water. This is a signal that an affordability problem does exist, and that a specific group of households needs increased attention from the state.

Furthermore, in the event of a 50% increase in water tariffs, with other conditions being constant, 41% of households in Khmelnitsky might fall below the 4% criterion (with the city-average figure remaining at a decent level of 3.7% of aggregate household income). But if household incomes increase, the

[28]. In a small city, residents are typically served by one water/wastewater communal service enterprise (CSE). In this case, 'customers of a specific utility' and 'customers in a specific city' are synonyms.

planned tariff increase might be quite affordable to residential customers. That is why it is very important to take projections of population incomes and expenditure growth rates into account when assessing the affordability of new tariffs.

Figure 1.7. Distribution of Households by Water/Wastewater Charges Burden (year-2001 tariffs vs. 50% increase)



Source: Authors' calculations based on the Sample Survey of Communal Service Customers in Khmelnitsky. (Ukraine, December 2001)

Approach 4: Analysis of Water Charges Burden by Household Income Deciles

Information about household income deciles could not be found for any of the EECCA countries. Therefore, it was impossible to analyse the burden of water charges for various income deciles (or quintiles). Such analysis can be demonstrated by two available cases: the cities of Lutsk and Khmelnitsky, Ukraine. Table 1.12 provides data on water charges as a percentage of aggregate household income by per capita income deciles.

Table 1.12. Water Charges as a Percentage of Aggregate Household Income in 2001 (by per capita income deciles)

City	*Per capita income deciles*										*City average*
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	
Lutsk	4.66	3.16	3.07	2.52	2.48	2.46	2.29	2.20	1.71	1.37	2.55
Khmelnitsky	4.61	3.92	3.44	2.93	2.84	2.29	2.17	2.00	1.61	0.92	2.40

Source: Authors' calculations based on the Sample Survey of Communal Service Customers in Khmelnitsky and Lutsk. (Ukraine, December 2001)

The above statistics show that the relative burden of water charges varies significantly across deciles, declining substantially as we move from the lowest toward the highest income decile. This example confirms that often households from the lowest income deciles have to pay a much larger share of their income for water than households from higher income deciles. In Lutsk the worst-off households pay 3.4 times more than the richest, while in Khmelnitsky the poorest decile pays 5 times more than the richest. At the same time the ratio of the expenses for water and wastewater services by the poorest 10% households to the city average is 1.8 in Lutsk and 1.9 in Khmelnitsky.

Application of Micro-Affordability Analysis in the EECCA Countries

Micro-affordability analysis has a number of advantages: it provides relatively objective and accurate information about the ability to pay among the consumers of specific income groups or of specific water utilities. Approach 1, assessing the level of water expenses for groups of households with different levels of income, and Approach 3, assessing the level of water expenses in a selected city or among the consumers of a selected water utility, demonstrate the best performance.

Micro-affordability measurements require reliable and sufficiently detailed information on household incomes and expenditure at the *regional and/or municipal* level, including expenditure on water. This information will be only available if countries conduct sample surveys of household incomes and expenditures. Where such surveys are not conducted, a special survey of water/wastewater service customers has to be carried out.

Even where sample surveys of household incomes and expenditures are conducted in EECCA countries, additional difficulties may arise, associated with the degree of reliability (representation) of the survey data at the regional/municipal level. When this data is not sufficiently reliable (or absent),

special statistical mathematics techniques need to be used, which will allow an enhancement of the representation of sample survey estimates.

To obtain reliable micro-affordability estimates, it is utterly important that sample surveys focus not only on housing and communal services *generally* but also on water/wastewater services *particularly*. This constraint alone (availability of data on services as a whole without breakdown into individual services including water) is a factor limiting the use of officially published data from sample surveys of household living conditions, even in countries where such surveys are conducted (e.g., Ukraine, Belarus, and Armenia). One way to address this problem is to use water charges in calculations of the share of water expenditures.

Micro-affordability analysis requires the following data:

1) Household distribution by expenditures on water as a percentage of aggregate household expenditures (or income).
2) Household distribution by expenditures on food as a percentage of aggregate household expenditures (or income).
3) Expenditures on water/wastewater (or water/wastewater charges) by household per capita income deciles/quintiles.

1.2.5 Willingness of Consumers to Pay for Water Supply and Wastewater Services

The term "willingness to pay" describes consumer preferences with respect to changes in the quality of water and wastewater services and prices for these services. Therefore, "willingness to pay" analysis aims to estimate the share of customers willing to pay more for better services or to prevent deterioration of service quality in the future.

There are two widely accepted methods that may be used to assess household willingness to pay more for water and wastewater services [29]:

- Method of revealed preferences.
- Method of stated preferences.

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[29]. Water Prices in CEE and CIS Countries: A Toolkit for Assessing Willingness to Pay, Affordability and Political Acceptability. COWI, 2001; Willing To Pay But Unwilling To Charge: Field Note / UNDP-World Bank, 1999.

Revealed preferences

Information on revealed preferences reflects real *observed behaviour* in response to a change in quality of service. It is based on the calculation of the service demand *elasticity* coefficient by price and income. However, application of this method is feasible only for metered households and if the consumer do have a choice between services of different quality; in this case there is a direct relationship between changes in demand and price. On the other hand, it is not possible to calculate elasticity for unmetered households by income or price because they have only two options: (a) to pay bills or (b) to refuse payment and service consumption at all. Therefore, a traditional analysis is not applicable when households pay for services based on consumption standards.

Stated Preferences

The method of stated preferences aims to identify the share of households that are willing to pay more for better services. The method of stated preference is based on customer survey results and includes the following main elements:

- Selection of focus groups and in-depth interviews.
- Design of a questionnaire (background questions, stated preference questions, testing a pilot survey).
- Survey of at least 150 persons conducted by a local expert.
- Data analysis.

The survey employs a set of thoroughly developed scenarios, which are usually based on real development plans of water utilities. For example, in Kaliningrad, Russia, in order to estimate the willingness of consumers to pay, two scenarios were developed. One aimed to maintain the current level of quality of services and avoid further deterioration, requiring a 10% price increase, while the other aimed at improved quality, requiring a 50% price increase.

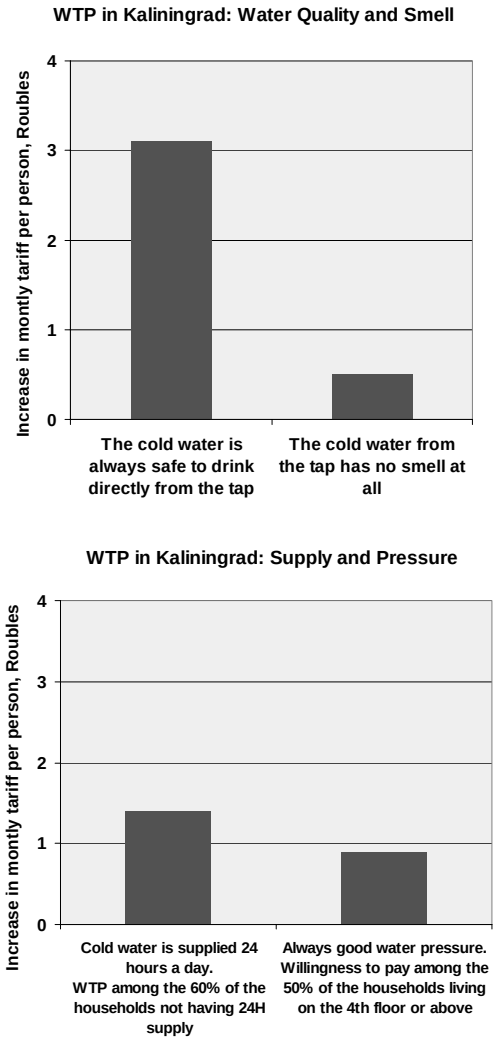
Box 1.3. Kaliningrad Development Scenarios

Option A	**Option B**
• WATER QUALITY: always safe to drink directly from the tap	• WATER QUALITY: as now
• SMELL: no smell at all	• SMELL: as now
• SUPPLY AND PRESSURE: water supplied 24 hours a day and always good pressure	• SUPPLY AND PRESSURE: as now
• COST: 50% higher	• COST: 10% higher

Source: COWI

The results of the survey demonstrated (Figure 1.8) that a large share of the consumers were willing to accept a 3 rouble tariff increase in order to ensure that cold water was always safe to drink directly from the tap. Measures to eliminate the smell in the cold water were considered less important. 60% of consumers who currently suffer from interrupted water supply were also prepared to pay 1.5 roubles more for ensured cold water supply 24 hours a day.

Figure 1.8. Willingness to Pay for Service of Better Quality in Kaliningrad

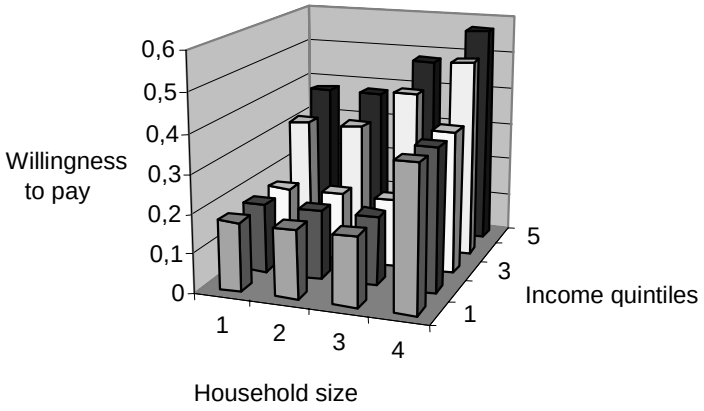


Source: Water Prices in CEE and CIS countries, DANCEE, 2002

A survey of consumer willingness to pay an increased tariff was also conducted in Lutsk, Ukraine in December 2001. The survey sample included 1,436 local households (2.2% of all city households) connected to water and wastewater services. This public opinion poll showed that 28.5% of the surveyed households were willing to pay more, provided that service quality would improve. In so doing, most respondents in this group (22%) reported their willingness to pay more on the condition that the price rise would not exceed 10%.

At the same time, willingness-to-pay indices showed wide variability depending on types and sizes of households and income levels (households in the sample were divided in quintiles) - see Figure 1.8. Willingness to pay more tends to increase with household size and income level, as the most welcoming attitudes toward the upcoming tariff rise were reported by households consisting of four or more members and falling into the fifth quintile.

Figure 1.9. Willingness to Pay More for Water/Wastewater Services Depending on Household Size and Income (Lutsk, Ukraine, 2001)



Source: Authors' calculations based on the Sample Survey of Communal Service Customers in Lutsk, 2001.

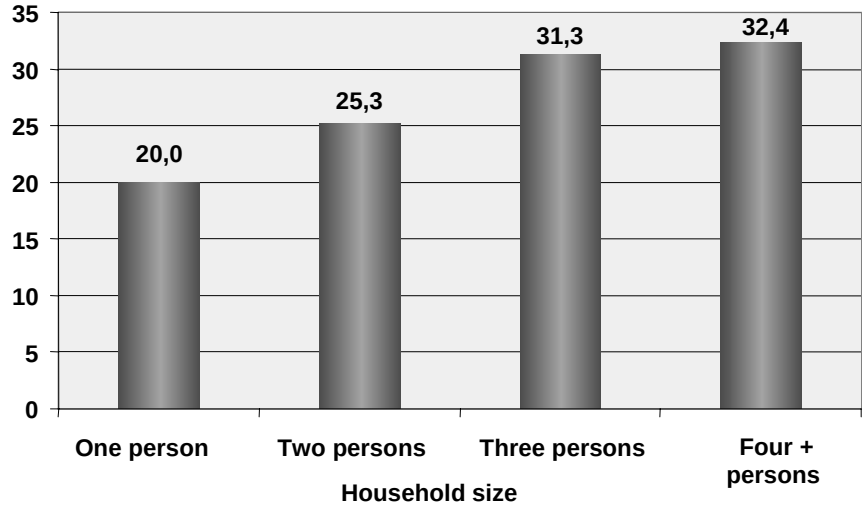
Furthermore, the survey data show that willingness to pay varies largely with the household type. For example, among households having pensioners, only 18% were willing to pay extra, as compared to 34% among households without pensioners (Figure 1.10). Households with children under three were more prepared to pay a higher price: 46% of the willing-to-pay opinions in the group as compared with only 27% for households without children of this age.

Figure 1.10. Dependency of Willingness to Pay on Whether There Are Pensioners or Children under Three in a Household, Lutsk, Ukraine (% of Surveyed Households)

Source: Are Households Willing to Pay More for Better Services? / Results of Effective Demand Modelling for Communal Services/ O. Romanyuk, V. Sarioglo and others. PADCO/USAID, Kiev, 2002.

There is a clear positive dependence between willingness to pay and household size (Figure 1.11). It is probable that low quality of water service (scheduled supplies, low pressure in the distribution networks, poor water quality, and the need for in-home water filters or bottled/imported water etc.) is more painful for large households.

Figure 1.11. Dependency of Willingness to Pay on Household Size, Lutsk, Ukraine (% of Households in Each Group)



Source: Are Households Willing to Pay More for Better Services? / Results of Effective Demand Modelling for Communal Services/ O. Romanyuk, V. Sarioglo and others. PADCO/USAID, Kiev, August 2002.

Application of Willingness to Pay Methodologies in EECCA

Despite the advantages provided by the method of *revealed preferences*, it is not applicable in EECCA countries in view of the small percentage of metered households.

The method of *stated preferences* allows the determination of an appropriate quality-price balance, while identifying the most important improvements required by consumers. These results could be used when developing service quality improvements and concrete investment projects, designing technical and financial plans for enterprise development and tariff-adjustment initiatives and designing social programmes to support the most vulnerable residential categories. Survey results based on face-to-face interviews can convince decision-makers that customers are ready to pay for better services and could be also used for communicating with the broad public to make new tariffs more acceptable to the population.

National and sector statistics in EECCA countries do not provide the data required for willingness-to-pay analysis. Therefore, in each case a *special*

interview-based survey has to be carried out. Preparation of the survey questionnaire may require significant time and human resources. The same is true for preliminary studies of financial and operating performance of water utilities, pricing specifics, households' payment compliance, sanctions to non-payers and other data-gathering activities. Conducting interviews, processing the information and developing results also require significant time and resources.

It should be noted that surveys must be conducted in each individual city (or cover customers of a particular water utility). Transposition of results from one city to another is not recommended due to significant local variations in service quality, tariff levels, consumption standards, household well-being, and other key characteristics. However, such transfer of results might become feasible within similar areas of a country and once a significant "bank" of results from household surveys has been assembled.

1.3 Recommendations

Affordability of water supply and wastewater services is a new problem for EECCA countries. Rapidly increasing prices, deterioration of quality of water services and widespread poverty and income disparities are among key factors triggering the affordability problem in the region. There is a lot of political resistance, especially in national and local elected bodies, to increasing water prices in EECCA, which represents a serious obstacle to sector reform.

At the same time, the political debate about unacceptably high prices for water remains largely speculative, as there is no practice in the EECCA countries of measuring actual water affordability for households. There are no standardised methodologies or legal requirements to carry out such studies at the national or local level. While the same can be said about the OECD countries, where such analysis is undertaken by academics or campaigners, who then draw the attention of the public and the policy-makers to the results, the severity of the affordability problem in the EECCA countries calls for a more structured policy response.

Generally, water prices represent a relatively small share of household expenditures, but some groups of consumers already experience a very heavy price burden for water and other communal services. Prices for water services will need to be increased further in order to ensure a sustainable water supply of good quality. When prices become too high, the consumer may either refuse to pay for the services or will need to reduce water consumption below the socially optimal level.

While the quality of water supply and wastewater services is visibly deteriorating, levels of water consumption in EECCA are rather high. The costs of water production are relatively high as well due to system inefficiencies. There is a need to clarify key parameters of the service and price, and to introduce measures for water demand management and reduction of service costs. These measures, together with changes of income level of households, can significantly affect levels of affordability.

Affordability is a complex notion including economic aspects, which can be measured to some extent, as well as social and political aspects, which are more subjective. Economic affordability is understood as the level of water price which consumers can pay without significant reduction of other essential expenses. There are several methodologies developed by IFIs and OECD countries that can be used to measure economic affordability of water supply and wastewater services, including the actual burden of water expenses for households and willingness of consumers to pay. But the experience with such methodologies is limited in EECCA countries.

Macro-Affordability

The most appropriate method to measure *affordability at a macro, or country level* is to estimate the share of household income or expenditures for water and wastewater services. This is the most common and easily produced indicator. Identification of household expenses for water as a share of household residual income (disposable income net of expenditures for food) is also possible. But this approach is more labour-intensive and is not commonly used, which limits its application for comparison across countries. Macro affordability estimates are most useful for initial assessments about the existence and extent of affordability problems and for international comparison. It is not sufficient, however, for specific decision-making concerning tariff adjustments and social protection.

Micro-Affordability

The following two methodologies are most appropriate for measuring micro affordability for EECCA: assessing the level of water expenses for groups of households with different levels of income (presented as Approach 1) and assessing the level of water expenses in a selected city or among the consumers of a selected water utility (presented as Approach 3).

Distributing households by expenses for water as percentage of total household expenditures is helpful in determining what share of households have to spend "too much" for water, e.g. more than the affordability criterion. This will help to measure the scope of the problem, and the results could be used in designing measures to protect households with low affordability.

Analysis of households' ability to pay at the city or utility level is most helpful for developing and approving new tariffs. Generally speaking, if tariffs are set at the local level, policy makers should be informed of the burden of expenditures for water not only in the country as a whole, but more importantly, in the city where tariffs are being revised. Therefore, the service affordability analysis should focus on a particular group of residential customers, or else results of the analysis will not be quite as reliable or indicative.

Micro affordability analysis requires detailed and reliable information about water charges and household expenditures. Countries should at least have detailed data of a sample survey of household incomes and expenditures. More complete and objective estimates can be obtained through a *special survey* of consumers, which will require additional resources.

It is important to note that in such surveys, amounts charged for water and wastewater services should be used instead of actual expenditures/payments. This approach will ensure the accuracy of the analysis by discounting the backlog of overdue service bills, and will demonstrate how much households "must pay" rather than "how much they actually pay".

Affordability Criterion

Establishing an affordability criterion as a target indicator of the threshold of affordability could be a useful tool for decision-making. The maximum permissible household expenditures for water and wastewater services as a percentage of individual household income or expenditures may serve as such a criterion. No single known affordability criterion is universally acceptable for all countries and regions, or for all income groups. Its value depends on a variety of national and even sub-national factors. That is why the responsibility for selecting the affordability criterion should rest with each country.

If governments choose to establish an affordability criterion, they need to ensure that the criterion be simple and understandable for all stakeholders and based on available sources of reliable statistics. In addition, its value should be revised periodically to allow for the changing situation. A criterion setting process

should be public, since this needs to be a political decision accepted by the society.

Willingness to Pay

The method of stated preferences is recommended for an analysis of the willingness of households to pay more for better services. This analysis allows the determination of an appropriate quality-price balance for water supply and wastewater services, as well as the most important improvements required by the consumers. The results could be useful for designing concrete investment projects and for providing an analytical base for the tariff adjustment policy process.

Available statistics do not provide sufficient data for the assessment of stated preferences. A special survey has to be conducted to support this analysis. It should be noted that this method requires sufficient time and other resources. Therefore its applicability in EECCA is limited, probably to the most significant of investment projects.

Responsibility for Affordability Analysis and Using its Results

In order to substantiate the political debate and to equip decision-makers with data and information about actual affordability, analysis of water and wastewater affordability services should become an integral part of the pricing policy. National authorities may choose to recommend tariff-setting authorities to carry out such analyses (where democratic practices and effective responsibility at the local level are well proven) or to introduce it as a mandatory requirement prior to major tariff decisions. In particular:

- Affordability analyses for water and wastewater services should become *an integral and indispensable element* of tariff revision procedure. Such analyses should be introduced into regular practice of local governments in the process of approving tariffs and strategic development plans of water utilities.
- Results of such analysis might also be useful in *revising water consumption standards* as well as the level and quality of service.
- Affordability assessments should be required by *feasibility studies for large investment projects* to ensure that consumers would be able to repay the investments.
- Results of the affordability and willingness to pay analyses serve as a valuable source of information needed for designing *social protection programmes* and for establishing eligibility criteria for social assistance.

- Results of the affordability and willingness to pay analyses should be used as a basis for *political debates about tariff adjustment and public hearings.* This may help overcome the resistance of political opponents, contribute to reconciliation of interests and win understanding and support of local communities.

Executive powers responsible for tariff setting should be responsible for the affordability analysis. In other words, if tariffs are set at the national level, then responsibility for the affordability analysis should rest with central bodies, and if local governments are responsible for tariff setting, then they should carry out the affordability analysis.

While the responsibility for such an analysis should stay with the tariff setting authority, such an authority is not well placed to carry out the analysis and to ensure the reliability of the affordability methodology. To ensure the quality of the methodology, the actual analysis should be delegated to specialised agencies, such as commercial companies, public research institutions and other bodies with proven capacity in the field. Besides, the methodology can be standardised at the national level through establishing specific quality requirements or adoption of a model methodology.

As affordability analyses, particularly micro-affordability and willingness-to-pay methods, require significant resources, not all the executive powers would be able to finance such analyses. In order to ensure sufficient financing for such an analysis, the tariff setting authority may seek various sources, including financing by water utilities, support from a potential investor or from the national government, and limit the scope of the analysis by major tariff adjustment and investment decisions. Under certain conditions, it may be possible to apply "results transfer" by drawing carefully on the results of a national study, or another region/city study, so as to allow for the socio-economic and other characteristics at the local level. Such extrapolation of results can only be possible when a significant bank of data has been accumulated, including reliable data on household income and utility prices.

Methods for carrying out affordability analysis presented above can be applied not only for analysing affordability of water supply and sanitation services, but for other individual services or for the whole set of housing and communal services. The selection of the appropriate scope for the analysis largely depends upon the local conditions. It should be noted however, that in such cases special attention should be given to appropriate adjustments in the data inputs.

CHAPTER 2. SOCIAL PROTECTION OF WATER CONSUMPTION

2.1 Principles and Criteria for Social Protection

This section will propose basic principles for establishing and reforming social protection measures aimed at ensuring water consumption and criteria for assessing social protection measures. It will further provide a brief overview of social protection measures for water currently used in OECD countries.

2.1.1 Principles and Criteria for Social Protection of Water Consumption

Social protection is a set of measures taken by governments to protect the social rights of citizens established in legislation and reflecting the social values of societies. Social measures are designed to support poor and socially vulnerable households and individuals, as well as to ensure minimal acceptable living standards for them. Social protection systems in respect to the water and wastewater sector aim to ensure fulfilment of the basic human need of water for all citizens, irrespective of their income level.

In addition to ensuring social rights of citizens, social protection to the poor households is an important factor ensuring a healthy economic environment, where prices can be established on economic grounds, thus effectively helping water utilities to operate on a commercial basis. Social protection to the poor and vulnerable should be provided *prior* to the increased burden for the population, such as price increase.

The Almaty Guiding Principles underline the need for special measures to alleviate the negative implications of tariff rises for the poor and vulnerable. The Guidelines emphasise that targeted subsidies (i.e. provision of assistance only to low income households) constitute the most efficient mechanism in solving social problems under the conditions of the housing and communal sector reforms in economies in transition.

Building on the Almaty Guidelines and taking into account social and economic conditions in EECCA as well as typical problems in the water and communal

services sector, the following basic *principles* for social protection systems for water consumers are proposed:

- Social protection measures for water consumption should ensure *equal access* to water for all households to meet their basic needs, irrespective of their income level.
- Social protection system should be *targeted*, i.e. social support should be provided only to those who really need it.
- Social protection should be *effective;* i.e. the amount of the support should be sufficient to ensure consumption by the poor.
- Social protection systems should be *realistic* i.e. financially sustainable, based on actual budget capacities to provide such support.
- Social protection systems should be *easy and cost-effective to administer* as well as transparent and accountable; the state should bear the ultimate responsibility for all social protection measures.
- Social protection systems should provide incentives for *water saving* by consumers.
- Social protection systems should relieve social tension but prevent *side effects* such as market distortion.

The social protection systems operating in the EECCA countries are extremely cumbersome and complex, providing for the coexistence of a wide variety of social protection measures inherited from the central planning economy and introduced more recently as a reaction to social hardships of the transition period. They include social benefits, such as pensions and health protection, privileges for various social and professional groups, support for low-income households and subsidies and/or compensations for housing and communal services. Not all social protection programmes are means-tested; they use different eligibility criteria and some programmes duplicate each other. Often, low-income households can apply for social assistance under several or even all programmes.

Another inefficiency of current social protection systems related specifically to water is linked to rather high levels of water consumption in EECCA. The lack of water meters does not provide consumers with an incentive to save water. Even low-income consumers, who are not able to pay their water bill and need state support for their water consumption, are supposed to consume water according to often exaggerated consumption norms. Besides, large amounts of water are lost in water supply systems. Therefore, public budgets have to spend their limited resources on water, which is wasted and/or lost.

There is an urgent need to streamline social protection systems in the EECCA in order to improve the effectiveness and efficiency of public spending. The

progress in this direction depends on numerous political factors. Competing for the support of voters, politicians promise to maintain existing social guarantees and even expand them, with no consideration for the actual capacities of public budgets. Consequently, governments face serious problems financing declared social benefits, and often the financial burden of such decisions is passed to water and other communal service utilities, undermining their financial stability.

The following criteria, based on the principles presented earlier, may help governments assess the measures in place or newly proposed measures, and ultimately reform the social protection systems related to water supply and wastewater services:

- *Access and coverage:* share of the poor households reached by the social protection measures.
- *Targeting*: share of the social protection measures reaching the poor, and spillover to the rich.
- *Effectiveness:* amount of the provided assistance as a share of the total charges for water supply and sanitation services.
- *Financial realism:* level of funding of social protection programmes.
- *Administrative simplicity and cost-effectiveness:* simplicity of administering social protection programs for both enterprises and recipients and the share of administrative costs in the total programme costs.
- *Water saving:* incentives for water saving built into the programme.
- *Side effects:* level of cross subsidy, other market distortion effects.

Most criteria presented above can be measured in quantitative terms, which may be useful in an objective assessment of social protection systems and prevent arbitrary decisions.

It should be pointed out that some of these criteria can be conflicting. Most notably an accurate targeting of social protection measures can frequently only be achieved at the expense of reduced administrative simplicity and increased transaction cost. When designing social protection measures, governments need to take these trade-offs into account. Sometimes the social benefit of a subsidies scheme involving less accurate targeting might be higher than that of a more sophisticated one, due to substantial savings in administrative costs. Hence, governments need to weigh the additional administrative costs that more sophisticated (better targeted) schemes involve against the loss of subsidies due to spill-over to people who should normally not be entitled on a case-by-case basis. This issue should be kept in mind when reading the discussions on different means of subsidising the poor.

2.1.2 OECD Experience of Social Protection Measure for Water

There are two general ways to increase affordability of water and wastewater services to low income customers: lower service prices, i.e. lower charges to customers, or increase households' ability to pay, i.e. increase their incomes. Accordingly, social protection measures can be divided into two basic groups (Figure 2.1 presents these methods):

- Measures aimed at lowering tariffs or tariff methods.
- Measures to increase incomes of low-income households.

The price of water service is increasing in most OECD countries following the implementation of the "user pays" and cost recovery principles, the tightening of environmental requirements and the financing needed for the renewal of ageing water infrastructure. It should be noted that the efficiency of water supply and wastewater treatment services is much higher in OECD countries and that demand management measures help reduce overall costs and volumes of water consumption.

In many OECD countries, consumers are paying full, or close to full costs for the operation and maintenance of water supply systems. At the same time, cross subsidies between various groups of consumers are often found in many OECD countries, while the general trend is toward their reduction and elimination. The state continues to play an important role in the financing of wastewater treatment infrastructure (often considered as public service).

Tariff measures aiming to reduce water consumption and thus the water bill of households (lifeline and raising block tariffs) are common in many OECD countries. Some countries are practising social tariffs - provision of discounted water to strictly defined and limited groups of consumers. Well-developed general social protection measures provide substantive relief to the poor, including relief for water needs. A variety of smaller scale schemes are also in place, including technical and legal methods. [30]

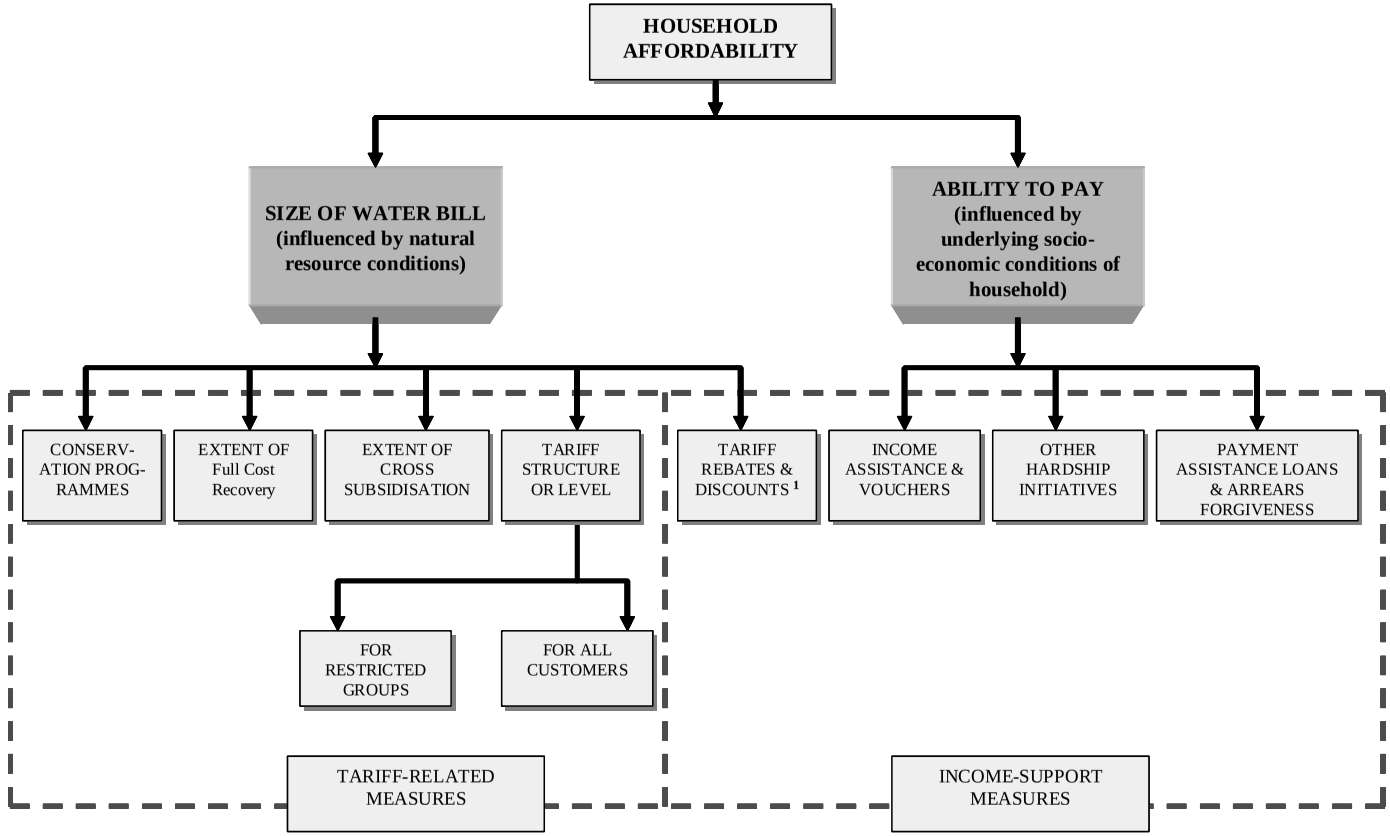
While the scale of the affordability problems in OECD countries is generally less dramatic than that in the EECCA, their long-term experience in providing social support for water consumption could be useful for the analysis and reform of relevant measures in the EECCA region.

[30]. For more information about social protection measures in OECD countries, please refer to Annex 9.

2.2 Measures to reduce the price of water and wastewater services

This section will provide an overview of measures, which aim to reduce the price of water supply and wastewater services for all households. Such measures include budget subsidies to producers and cross subsidies between households and other groups of consumers. Discounted water tariffs for selected household types will also be presented in this section. These measures were inherited from the central planning economy and are currently used by most EECCA countries.

Figure 2.1. Ways to Improve Service Affordability



Source: Social Issues in Provision and Pricing of Water Services, OECD, 2003

2.2.1 Public Budget Subsidies for Water Utilities

Prior to 1991, under central planning, the prices for housing and communal services, including water and wastewater services, were heavily subsidised by the national government. The state subsidy or "dotatsiya" aimed at direct recovery of service providers' costs. During the transition to the market economy, pubic budgets could not continue to finance this producer subsidy.

Subsidies to the housing and communal sector were gradually phased out in practically all EECCA countries (except Turkmenistan). Comparative analysis of government expenditures from budgets of all levels for supporting the housing and communal service sector and patterns of these expenditures in the process of market reforms in this industry are presented below, with a special focus on Ukraine and Russia.

Ukraine

Government financial support of the housing and communal service sector is reduced from year to year. Between 1994 and 1999, budget funding of the Ukrainian housing and communal service sector was reduced from 4.4% of the GDP to 0.9% of the GDP. UAH 1.084 billion, or 2.25% of the total budget expenditures (0.6% of the GDP), was allocated for these purposes in 2000. However, these figures do not include budget costs of social assistance programmes to service customers. The total year 2000 expenditures from budgets of all levels for the housing and communal service sector combined with the costs of social assistance to service customers amount to UAH 3.58 billion or 7.45% of the total budget expenditures (2.1% of the GDP).

Public budget financing for the water and wastewater sector can be divided into three categories:

- *Government subsidies (dotatsiya)* – budget funds allocated by local budgets to cover the difference between actual service costs and residential tariffs (dotatsiya to the housing and communal service sector have not been allocated from the national budget since 1998).
- *Housing subsidies* – funds transferred to communal service enterprises (utilities), including water utilities, to cover the cost of services for which residential customers are granted social assistance under the housing subsidy programme (to be discussed later).
- *Privileges* – funds transferred to communal service enterprises to cover the cost of services for which residential customers are granted rights for discounted tariffs.

Table 2.1 shows data on budget funding of the water and wastewater sector in 2000 and 2001. In the year 2000 government subsidies covered 9.5% of total service costs, while in 2001 they fell to 0.4%. Such considerable reduction was caused by the offset between communal service enterprises and budgets of all levels in late 2000 due to debt restructuring. Therefore, starting in 2001, the water and wastewater sector received practically no budgetary support and became self-financed.

Table 2.1. Government Subsidies to the Ukrainian Water/Wastewater Sector in 2000 and 2001

	2000			*2001*		
	UAH ,000	*% of the Total Service Costs*	*% of the Budget Expenditures*	*UAH ,000*	*% of the Total Service Costs*	*% of the Budget Expenditures*
Government Subsidies (Dotatsiya)	212704.6	9.5	0.4	9116.6	0.4	0.017

Source: State Committee for Housing and Communal Services of Ukraine

Housing subsidies and privileges to residential customers are planned in the national budget and have been transferred to local governments as subventions from the national budget. Table 2.2 shows data on the costs of subsidies and privileges granted to residential customers and reimbursed to utilities in 2000 and 2001.

Table 2.2. Housing Subsidies and Privileges to Residential Customers for Water and Wastewater Services in 2000 and 2001

	2000		*2001*	
	UAH ,000	*% of the Total Costs of Residential Services*	*UAH ,000*	*% of the Total Costs of Residential Services*
Housing Subsidies	125147	10	88661.3	6.9
Privileges	92155.6	7.3	60530.2	4.7

Source: State Committee for Housing and Communal Services of Ukraine

On the whole, Ukrainian water and wastewater enterprises received UAH 430 million in budget funds (0.89% of the total consolidated budget expenditures) in 2000 and UAH 158.3 million in 2001 (0.29%). Government support of the Ukrainian water and wastewater sector was reduced significantly.

Russia

Support to the Russian housing and communal sector has remained the state's most wasteful expenditure. Federal and local budget subsidies to the sector consumed 1.1% to 1.3% of the GDP in the period of 1987 through 1990, 3% to 4% in 1996, 6% in 1997, and 7% in 2000. The portion of expenditures in this sector exceeded the aggregate expenditures for national defence and law-enforcement agencies, not to mention education and health care.[31]

The share of expenditures in the "Housing and Communal Services Sector" of the Russian Federation consolidated budget stood at 23.2% in 1998, and 19.4% in 1999. Practically all Russian regions (Table 2.3) spend 20% to 25% of budget funds to support the housing and communal service sector (except in the Chuvash republic where this figure is lower).

At the same time, budget funds allocated to the housing and communal services sector have been insufficient for many years. For example, the cost of communal services to residential customers was RUR 297 billion. Out of this total, residential customers paid RUR 118.5 billion (40%) whereas RUR 117.5 billion (39.5%) was received as dotatsiya from various budgets. Because of delayed payments and wages arrears, these budgets underpaid some RUR 61 billion (20.5%). As a result, the industry's debt amounted to RUR 245 billion, whereas its receivable mounted to RUR 168 billion. This brought most enterprises to the verge of bankruptcy.[32]

Table 2.3. Percentage of Expenditures in the "Housing and Communal Services Sector" Section of the Russian Federation Consolidated Budget (%)

	1998	*1999*	*9 Months of 2000*
Russian Federation	23.2	19.4	19.6
Belgorod oblast	20.8	20.2	18.6
Vologda oblast	21.7	13.7	19.7
Samara oblast	24.8	22.5	23.0
Chelyabynsk oblast	25.1	22.6	25.4
Chuvash republic	16.7	15.3	16.1
Khabarovsky krai	27.0	19.7	18.4

Source: Materials of the Conference "Overview of Budget Expenditures for the Housing and Communal Service Sector", Institute of Urban Economics, Moscow, July 19-20, 2001.

[31]. The "Socio-Economic Problems in Russia" Bulletin, the Fund for Information Support of the Russian Reforms, "Norma", St. Petersburg, 2001.

[32]. The "Socio-Economic Problems in Russia" Bulletin; the Fund for Information Support of the Russian Reforms, "Norma", St.Petersburg, 2001.

Other EECCA Countries

The **Kyrgyz Republic** state budget included subsidies to the utilities amounting KGS (Som) 666.5 million or 6.6% of the budget expenditures in the year 2000, and KGS 800.9 million (6.8%) in the year 2001[33]. However, the water and wastewater sector reportedly receives little of the promised funds, and thus, must rely exclusively on self-funding.

The national government subsidises the **Armenian** water and wastewater sector through partially covering a portion of the electricity costs of the two Armenian water utilities.[34] In 2000, state subsidies amounted to AMD (Dram) 1,277 million (0.5% of the budget expenditures); in 2001, state subsidies totalled AMD 837 million (0.3% of the budget expenditures); and AMD 1,500 million was allocated for 2002. All of these funds are channelled directly to electricity providers, so utilities have little money for development programmes, such as energy saving programmes.

The national government of **Kazakhstan** earmarked KZT (Tenge) 15,706 million in the 2000 national budget (3.3% of budget expenditures) and KZT 23,790 in the 2001 national budget (3.9% of budget expenditures) for national housing and communal sector development purposes. These funds are invested in the construction and rehabilitation of water and wastewater facilities of national importance.

Belarus assigned 60.9% and 63% of its budgets expenditures for social programmes in the years 1999 and 2000, respectively. The national government continues to increase the expenditure part of the consolidated budget for various social assistance programmes. The state subsidises milk, bread, public transport, rent and communal services. The Law on the 2002 Budget envisages that budget funds will cover 50% of the costs of housing and communal services to residential customers.

In **Moldova,** the government support of the water and wastewater sector becomes apparent in the sporadic allocation of funds for urgent emergency repairs, totalling three to four million Leus a year. In addition, there is national and local government support in the form of loan guarantees. For the past five years, four credits worth USD 8 million total were supported by budgetary funds.

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[33]. Kyrgyzstan in Figures. National Committee for Statistics, Byshkek (2002).

[34]. In Armenia, water services are provided by two enterprises: YerevanVodokanal serves the city of Yerevan and ArmVodokanal serves the rest of Armenia.

Value Added Tax

In most EECCA countries, water and wastewater services to residential customers are subject to the value added tax (VAT). In all countries except Kazakhstan, Belarus, and Uzbekistan, the rate of the VAT is set at 20%. In Kazakhstan, the VAT is imposed at 16%. In Uzbekistan and Belarus the VAT rate is zero for residential services and 18% (Uzbekistan) and 20% (Belarus) for services in other customer categories. However, many experts believe that water supply provides a social service and could be subject to a reduced VAT rate. Many OECD countries apply this measure to keep residential tariffs down. For example, Great Britain, Finland, and Switzerland exempt water services to residential customers from the VAT, while Belgium, Spain, France, Portugal, and Czech Republic tax these services at a lower rate (5% to 7%).

2.2.2 Cross-Subsidies

Cross-subsidies imply that communal service tariffs for residential consumers are set at a lower level than for other consumer categories. In this way, other consumers, often industry in EECCA, are subsidising households. Cross subsidies together with direct budget interventions allow household tariffs to stay at a low level. However, such practice is unfair toward industrial and other consumers who have to pay unjustifiably high prices for water. These consumers can reduce their consumption of water utility services or completely refuse such service, making households the largest customers and payers for water services.

Cross subsidies in one form or another exist in all EECCA countries, except **Kazakhstan**. In 1995 municipal water for industrial consumers in Kazalinsk, Kazakhstan, was priced at $9.50 per cubic meter, 300 times larger than the household price. To avoid such high prices several major industries have switched from municipal water supplies to imported water delivered by trucks, resulting in heavy losses for local water utilities. This dates back to 1995, before the tariff reform started in Kazakhstan, but it clearly shows the destructive consequences of cross-subsidies for the financial viability of water utilities. In 2001, unified tariffs were set in Kazakhstan for all consumers at $0.14 per m^3 for water and $0.15 per m^3 per wastewater services (the highest tariffs across EECCA).

Armenia, like Kazakhstan, has established unified water and wastewater tariffs, but only for customers of YerevanVodokanal, the water utility providing services to the capital of the country. ArmVodokanal, the utility providing services to consumers outside the capital, establishes tariffs 1.3 and 1.6 times

lower for households for water and wastewater services respectively than for other customer groups.

In **Ukraine,** the highest tariffs, as a rule, are set for industrial and commercial enterprises, somewhat lower tariffs are set for institutions and organisations funded from state and local budgets (e.g. schools, hospitals, etc.), and the lowest tariffs are set for residential consumers. In 2001, average Ukrainian water and wastewater tariffs for residential customers were 2.5 to 2.7 times as low as the tariffs for industrial and commercial customers and two times lower than for budgetary organisations (see Table 2.4).

Cross-subsidies in Ukraine show some regional differences: in some regions, tariffs for various customer categories differ by up to 10-12 times. For example, in Kharkiv oblast, the difference between tariffs for households and other customer categories is ten times, while in Crimea it reaches 12.2 times. At the same time, in one Ukrainian oblast – Volyn – local authorities decided to introduce unified tariffs effective in 2000. Then, in 2001, they had to eliminate unified tariffs and raise tariffs for non-residential customers. This rise was caused by continuous growth of prices for electricity and energy fuels. During the election campaign, local authorities did not allow the enterprise to raise tariffs for households. On the whole, the level of cross-subsidies in Ukraine slightly increased between 2000 and 2001.

Table 2.4. Average Tariffs for Water/Wastewater Services for Various Customer Groups in Ukraine as of 2001 (UAH per m^3)

	Water	*Wastewater*
Residential customers	0.51	0.34
Budgetary organisations	1.04	0.70
Other customers	1.38	0.86

Note: $1 = UAH 5.37

Source: State Committee for Housing and Communal Services of Ukraine

Cross-subsidies are widespread in **Russia**. Commercial and industrial consumers continue to finance a major share of housing and communal service: 30% of total payments in 1990, 40% in 1995 and 1997, and 22% in 1999.[35] In 1992 in Moscow, on the eve of the housing and communal sector reform, water tariffs for industrial consumers were 87 times as large as residential tariffs. The ratio declined to 9 in 1996. A similar situation was reported in Volgograd and other industrial cities, as well as in Leningrad, Kursk and Belgorod oblasts. In

[35]. The "Socio-Economic Problems in Russia" Bulletin, the Fund for Information Support of the Russian Reforms, "Norma", St.Petersburg, 2001.

Karelia, tariffs for enterprises have already been set at or close to the economically reasonable level.

Unlike Ukraine, tariffs for Russian budgetary organisations are supposed to be set at the same level as their residential counterparts in most cases. The State Committee for Construction reported in 2001 that cross-subsidies for water services did not exceed two times. At the same time, according to the 2001 survey of 90 water utilities, tariffs for water/wastewater services for other customers were 3.6 times as high as tariffs for households and budgetary organisations[36]. The survey also revealed a trend towards reducing cross-subsidies. Cross-subsidies are expected to be phased out in Russia by 2004.

Uzbekistan, Kyrgyz Republic, Moldova and Georgia also continue cross-subsidising. The level of cross-subsidisation can be as high as 4 to 5 times. Some countries have set an objective to phase out cross-subsidies and move to unified tariffs. Moldova has adopted a National Environmental Action Plan, envisaging gradual introduction of unified tariffs for all communal services, including water and wastewater services. Unified tariffs have already been implemented in the city of Beltsy and are expected to be introduced in Chisinau. However, many municipal authorities resist approving higher residential tariffs. Uzbekistan has adopted a number of regional development programmes according to which unified tariffs are to be implemented by 2004 or 2005.

In **Belarus,** tariffs vary by customer categories: i.e. households, budgetary organisations, public catering and public service enterprises, utilities and agricultural business and self-funded enterprises, including industrial, construction, trade and other companies. Since the national government sets low residential tariffs for the whole country, local authorities set tariffs for other customer categories so that they cover the loss from households. As a result, industrial companies and organisations have to pay 10 to 15 times as much for water and wastewater services as local household consumers. For example, in the city of Vitebsk, water and wastewater tariffs for industrial customers were, respectively, 14 and 6 times higher than residential tariffs in June 2001. In Novogrudsk, Grodno oblast, the difference reached 15 times for water and 19 times for wastewater services[37].

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[36]. Indicative Survey of Water/Wastewater enterprises. Final Report on Russian Water/Wastewater enterprises. The Institute for Urban Economics / OECD, Moscow (2002).

[37]. "Tariffs/Payment, Penalty, and Tax Calculation". The 2001 Report of the Zapadnaya Dvina River Department. TACIS.

Another type of cross subsidy can be found between various groups of households: e.g. households who pay their water bills fully and on time provide a subsidy to those who do not pay. In some cases, there are inequalities between consumers who have installed water meters and pay only for the water consumed inside their apartment and those who do not have meters and pay based on consumption norms, including water losses in the system. However, these forms of cross-subsidies are not studied in detail in this document.

2.2.3 Discounted Tariffs or Privileges

Privileges for housing and communal services provided for selected categories of residential customers have been applied in EECCA countries since Soviet times. Privileges are provided in the form of a discount of 75%, 50% or 25% or exemption from paying service charges, and resemble social tariffs in OECD countries. There are two types of privileges:

- Privileges based on the social status of individuals as a compensation for a special contribution to the society in the past, e.g. war veterans, victims of political repression, Chernobyl disaster victims.
- Privileges based on the occupational status of individuals, e.g. police, military and firemen, judges and prosecutors, certain professionals based in rural areas.

Privileges are granted in a non-cash form by utilities, and the costs of privileges are supposed to be recovered from state budgets. Most countries take little care in keeping records of privilege recipients, and utilities normally receive budget transfers to cover the value of privileges based on general reports they file or on rough assessment studies. However, service providers receive budget transfers only after a significant delay if they receive them at all. In Armenia, Russia and Ukraine utilities face a painful problem of budget indebtedness. In Uzbekistan such compensations are not even planned in the budget. Recently, Kazakhstan and Moldova have replaced non-cash privileges with cash payments to qualifying categories of the population.

Privilege qualification procedure (determination of eligibility for privileges and calculation of the cost of privileged services) is administered by each enterprise providing housing and communal services to residential consumers. Privileges are granted on the basis of an application and supporting documents verifying the eligibility of the individual for certain privileges determined by law. There is no requirement to assess the financial situation (means-testing) of the applicant or his/her family members. As a rule, all family members of privileged individuals are entitled to the privilege as well.

Despite these weaknesses of the privilege system, it should be noted, that in some cases there may still be a rational for continuing to operate that system. When a certain social or professional category provides a good proxy for targeting the poor, using the privilege system may be preferable to more sophisticated, and hence costly to administer, means testing approaches. This needs to be assessed on a case by case basis.

As reported by the Ministry of Labour of **Belarus**, the national legislation in effect provides as much as 300 privileges for different categories of individuals. The most common types of privileges are those in the areas of rent and communal services, health, loans, tax concessions, education, gas, heat, electricity, use of sport facilities, public transport, social insurance, retail trade and communication. On the whole, 64.2% of all households in the country enjoy privileges. In so doing, 19.5% of Belorussian households receive housing and communal services privileges [38].

As privileges do not target the poor and communal services are heavily subsidised, better off households often enjoy more benefits than the needy. The reason for this is that better off households receive better services, and they rent or own more spacious dwellings, while privileges are usually granted based on the volume of service consumption. In the 2nd quarter of 2002 the value of benefits made up BUR 11,349 ($7.5) and BUR 3,976 ($2.6) per well-off and poor households, respectively, and the difference reached 2.85 times [39].

The **Uzbekistan** legislation in effect provides 136 tariff privileges and benefits for as many as 14 categories of residents. On the whole, more than 2.2 million households countrywide enjoy different forms of direct state support. In 2001, 900,000 residents qualified for 50% to 100% discounts on rent and communal service tariff privileges. These expenditures were covered by other customer categories through cross-subsidies.

According to various estimates, approximately 25 percent of the **Ukrainian** population had enjoyed privileges in payment for housing and communal services, and about a quarter of them qualified for occupation-based privileges in early 2000. Needy households received UAH 6.1 ($1.1) worth of privileges per adult per month, whereas better-off households got as much as UAH 13.1 ($2.4). Besides, the percentage of privileges in a household's total income was

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38. "Privileges and Benefits to Each Belarusian", E.Rakova, Minsk, 2001.

39. The Institute of Privatization and Management Research Center, Belarus Republic and "Belorussian News", E.Rakova, Minsk, 2002.

5.5% in the first income decile, whereas in the tenth income decile it was as high as 8.1%[40].

This forced the Ukrainian government to start phasing out privileges in 2000 and 2001.Occupational privileges were suspended, while social privileges were retained only for the most vulnerable residential categories (war veterans, Chernobyl victims, etc.). These measures resulted in:

- 21.5% reduction of the number of households enjoying privileges.
- 54.5% reduction of the number of privileged individuals.
- 51.1% reduction of budgetary transfers to utilities to cover the costs of privileges.

While in 1998, the yearly value of privileges was UAH 2,478.03 million (5% of the budget expenditures), in 2000, budget transfers to cover privileges for rent and communal services amounted to UAH 957.8 million (2.0% of the budget expenditures). However, the Law of Ukraine "On the 2002 State Budget" restored all privileges for the year 2002, reflecting the political situation in front of parliamentary elections. The issue of how to finance these privileges remained unanswered by the Law.

In **Russia** the financing of numerous privileged categories of consumers in the housing and communal sector is a problem of paramount importance: 43 privilege categories account for 63 percent of the total population (military personnel, judges, prosecutors, labour and war veterans, invalids, etc.). The legislation exempts them from paying for housing and communal services (fully or partially), while neither Federal nor sector budgets are responsible for covering the value of these privileges. The yearly value of such privileges is estimated at RUR 27.3 billion (2001). The total number of privilege recipients reached 47.8 million people or 33% of the total population in 2001. It should be mentioned that family members of privileged individuals enjoy an equal right to discounts for housing rental costs. At the same time, one third of the Russian population, mostly rural population residing in their own houses has never enjoyed privileges for rent.

Armenia largely ruled out traditional privileges for rent and communal services in 1997. Privileges were retained only for a few categories of residents (including war veterans and some other customer groups) that enjoy a 50% discount on the communal service tariff, with the exception of electricity tariffs. Privilege recipients do not exceed one percent of the total population.

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[40]. "Privileges for Housing and Communal Services", PADCO/USAID Policy Report, Kyiv, 2001.

Kazakhstan replaced former privileges with state cash benefits or compensations effective April 1999. The Law "On Special State Benefits" dated April 5, 1999 identified twelve vulnerable categories of individuals who would receive monthly cash benefits ranging from KZT 720 to KZT 71,501 ($4.9 to $487), depending on category and economic status. Eligible categories include World War II veterans and invalids, Heroes of the Soviet Union and Socialist Labour, Chernobyl clean up workers, invalids, families with many children, and political repression victims. Information on the exact number of privilege recipients is not available; however, it is estimated that few people fall into these categories.

Prior to July 2000, **Moldova** had a traditional system of privileges for payment for housing and communal services. The Law "On Social Protection of Certain Population Categories" adopted in April 2000 introduced targeted cash allowances in lieu of former privileges. Privileges for 47 population categories were eliminated and targeted allowances were introduced for only nine population categories. These are distributed by *social protection and family protection offices* directly to *recipients* out of the state budget through a social insurance fund. Targeted allowances, as a rule, are granted in the amount of 25% to 50% of the cost of services. Currently, allowances are received by 260,000 people (6% the total population), including 100,000 invalids and 44,000 participants in military conflicts.

At the same time, Transdnistrian Republic[41] has retained its system of tariff privileges for housing and communal services. Depending on the status of privileged individuals, various population categories receive discounts in payments for communal services ranging from 50% to 100%.

Table 2.5 shows aggregate data on privileges for rent and housing services in EECCA countries.

[41]. Self-declared Sub-Dnister republic is an area in Moldova on the left bank of the river of Dnister with its own authorities.

Table 2.5. Privileges for Rent and Communal Services in EECCA Countries

	Form of Privileges (Cash / Non-Cash)	*Recipients*		*Average Value of Privileges (USD)*
		Number	*% of the Total Population*	
Armenia	Non-cash	25 689	0.86	No data
Belarus	Non-cash	1 590 000	15.90	10.20
Georgia	Non-cash	No data	No data	No data
Kazakhstan	Cash	No data	No data	No data
Kyrgyz Rep.	Non-cash	No data	No data	No data
Moldova	Cash	260 000	6.00	No data
Russia	Non-cash	47 800 000	33.01	11.67
Tajikistan	Non-cash	No data	No data	No data
Uzbekistan	Non-cash	882 000	3.51	No data
Ukraine	Non-cash	6 900 000	14.00	4.71

Source: National experts

The above analysis demonstrated that public budgets in most EECCA countries were not able to continue supporting low water prices for all households through public subsidies to water utilities. At the same time they continue to play an important role in the financing of the water supply and wastewater sector. Governments need to clarify their financial support to the sector, while establishing clear strategic goals for this support.

Cross-subsidies between industry and households create significant market distortions and are being gradually phased out. While this is a positive trend, in general, the phasing out of cross-subsidies should be a gradual process taking into account the ability of households to pay cost-based prices and the financial stability of water utilities.

Current privilege systems are socially unfair. Privileges are poorly targeted and contribute to increasing income disparities, exacerbating economic inequality. Besides, most countries fail to define sources for funding privileges. The responsibility for administering privileges rests with enterprises, thus shifting the burden to other, non-privileged consumers. But there is strong political opposition to the elimination of privileges. Some countries (Armenia, Kazakhstan and Moldova) undertook radical steps to eliminate and transform the system of privileges, first of all occupational privileges. In other countries, this process is about to begin.

2.3 Measures to Increase Ability of Households to Pay

Many EECCA countries have decided to replace "across the board" subsidies to water utilities by targeted consumption subsidies to poor households. Others have chosen to support the income of poor families, not directly related to water consumption. This section will present the two main forms of such assistance used by EECCA countries: housing subsidies and social assistance to poor households.

2.3.1 Housing Subsidies

The existing social assistance system was not able to ensure effective protection of low-income households when tariffs for communal services skyrocketed. In order to provide such protection five countries of the region, Russia, Kazakhstan, Ukraine, Kyrgyz Republic and Belarus, have introduced targeted housing subsidy programmes.

Ukraine

In 1995, the government of Ukraine introduced a housing subsidy programme in order to mitigate the negative impacts of a drastic tariff rise in the housing and communal service sector. As of May 1995, Ukrainian households should not spend more than 15% of total household income for rent and communal services. In July 1998, the threshold was raised to 20%, but it was retained at 15% for the neediest categories of the population (single pensioners and other individuals unable to work). Housing subsidies cover a portion of household expenditures for rent, water, wastewater, heat, hot water, electricity, garbage collection, liquefied gas and other fuels in rural areas. They are provided in a form of reduced monthly charges; utilities receive compensation for the reduced charges from the national budget.

Housing subsidies are granted by *social protection offices* based on an application accompanied by documents proving the eligibility for housing subsidies, including income certificates and other documents about the economic status of each household member. Social protection officers may check the authenticity of this information. Depending on the applicant's category, housing subsidies are granted for six to twelve months. In early 2000, means-testing of housing subsidy candidates was improved: a household is not eligible for housing subsidies if it (1) rents out houses; (2) owns several houses; (3) owns a car younger than ten years old. All households wishing to qualify for the housing subsidies were required to clear the backlog of arrears on communal services.

The amount of a subsidy is calculated based on the actual level of service consumption, including the actual floor area of the dwelling within established standards (for example, subsidies for heat and rent are granted for an area not exceeding 21 m^2 per household member plus 10.5 m^2 per household). Water, hot water, and wastewater service consumption standards are set at the local level depending on average per capita indicators. These local standards range from 3 m^3 to 12 m^3 per capita per month. The average national water consumption standard is 8.0 m^3 to 9.0 m^3 and usually includes hot water.

The programme resulted in relevant budgetary savings estimated at UAH 1.23 billion (an equivalent to USD 600 million) in 1996 and about UAH 2 billion annually in 1997 and 1998. The total value of housing subsidies granted in 2001 was UAH 1.3 billion. In the same year, UAH 2.1 billion of budget funds were needed to cover the cost of privileges for rent and communal services. The budget cost of housing subsidies ranged from 3.2% to 4.2% of total budget expenditures in 1997 through 2000. Administrative costs account for 2% of the total programme cost.

About 2.8 million Ukrainian households receive housing subsidies in wintertime, while 1.8 million households enjoy subsidies in summer, making up 17% and 11% of the total national population, respectively. Statistical reports from 2001 show an estimated average monthly number of subsidised families at 2.3 million (14.1% of the national total). The average monthly subsidy was valued at UAH 46.72 per household (an equivalent to about USD 8.78). Single pensioners enjoyed subsidies that totalled about 49.2% of their average pensions.

One specific feature of the programme is that often subsidised households pay fixed charges for housing and communal services, which are limited to 15% or 20% of the aggregate household income, regardless of actual consumption of services. This situation effectively discourages any service conservation efforts on the consumption side, since reduction of service consumption always triggers a downward adjustment of the subsidy amount, with no discounts on service bills received by the household. Recently, an attempt was made to correct the situation by introducing a provision requiring the maximum percentage of household income spent for services to be marked down by 1% per every 10% of actual savings in service consumption by the household.

The housing subsidy programme has become a key element of the social protection system for the most disadvantaged categories of residents at a time of skyrocketing tariff rise. The government has made persistent efforts to streamline the subsidy granting procedure, income accounting mechanism, and verification procedures. The programme may be considered successful in this

respect as it has significantly contributed to the targeted social protection of the most vulnerable household consumers and helped to release the mounting social tension triggered by rising prices and tariffs for housing and communal services and energy. Implementation of the programme allowed Ukraine to raise prices for housing and communal services, which became the first step toward introducing market relations to the housing and communal service sector.

Russia

The housing subsidy programme was introduced in Russia in 1994. Currently, the programme is being implemented in all members of the Russian Federation, with the exception of Chechnya. Like in Ukraine, housing subsides are paid in a non-cash form by reducing bills for communal services.

The amount of housing compensation (subsidy) is calculated as the difference between the charges for services consumed within *social norms* and the maximum acceptable percentage of a household income. This percentage is regulated by a federal standard defining the "maximum expenditures for rent and communal services within social norm of dwelling area and service consumption as a percentage of the household total income". Table 2.6 shows the implementation schedule envisaged by the 1997 Concept of Reforming the Russian Housing and Communal Service Sector.

Table 2.6. Maximum Household Expenditures for Rent and Communal Services as Percentage of Household Total Income (Russian Federation Standard)

Year	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Percentage of household total income	16	18	19	20	22	23	25

Source: Concept of the Housing and Communal Service Sector Reform in Russian Federation approved by Decree of the President of Russia Federation # 425 dated April 28, 1997.

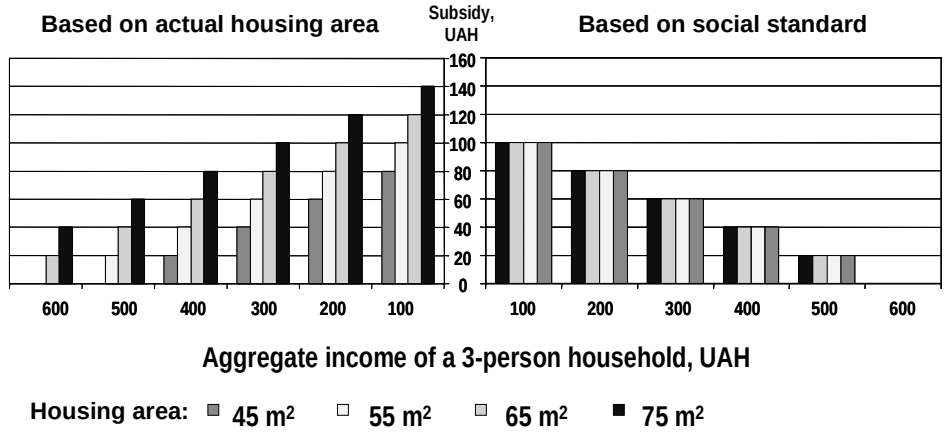
The federal budget is a source of funding for the housing subsidy programme. By the end of 2001, 3.5 million or 9.1 percent of Russian households (11.6 million individuals) were receiving housing subsidies. Between 1996 and 2001, the number of subsidy recipients remained stable in Russia (7% to 8% of the population) despite government statements that a quarter of Russians cannot afford to pay the mounting housing and communal service bills.

The total value of subsidies stood at RUR 1.96 billion in 1999, and RUR 4.42 billion in 2001. The average monthly subsidy was RUR 161.13 ($5.35). The maximum percentage of household expenditures for services was set by Federal Standard at 22 percent for 2001; however, the actual weighted average (by regions) was lower.

Unlike in Ukraine, the calculation of subsidies in Russia is based not on actual consumption, but on a social norm established by a Federal Standard. The social norm of housing establishes the maximum housing space of 18 m^2/person for households of three or more persons, 42 m^2/person for households of two persons and 33 m^2 for one-person households. (For comparison, in Ukraine: 21 m^2/person plus 10.5 m^2/household.) The subsidy is granted not for actual housing space, but within the established social norm.

Figure 2.2 compares the two housing subsidy models – one based on actual housing space (Ukraine) and one based on social norm (Russia). In the analysis, a 55 m^2 dwelling is assumed as a social norm for a three-person household. It appears that under the system based on actual consumption, households with equal income but living in smaller dwellings are eligible for a smaller subsidy compared to those living in larger apartments. Under the social norm method, households with the same income will be eligible for the same subsidy irrespective of the housing area they occupy. This analysis demonstrates social inequity of the first model.

Figure 2.2. Comparative Analysis of Two Housing Subsidy Models

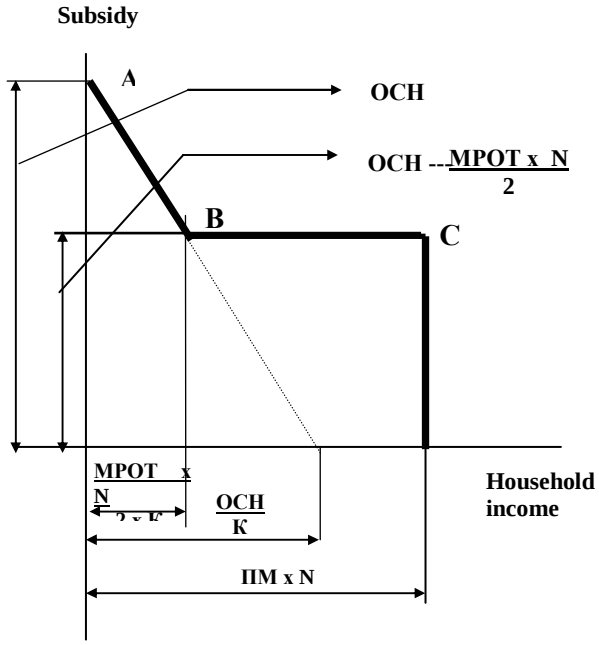


Source: Authors' calculation

Subsidies based on social norms have another advantage in their encouragement of metered households to save water. Because the subsidy amount does not directly depend on the volume of services consumed, any savings due to reduced consumption of water below the norm will stay with the family. Where a family consumes water above the norm supported by the subsidy, it will have to pay more for the service with the same subsidy.

The above examples demonstrate an effective subsidy scheme, which was employed in Russia until 1996, when the State Duma adopted amendments to the Law on Fundamentals of Federal Housing Policy. The modified law provided consumers with a choice of two grounds for applying for the subsidy. First, the one described above, and second, which states that housing and communal charges to individuals with aggregate household per capita income equal to or below the official subsistence level may not exceed one half of the minimum wage established by federal law. The new subsidy calculation procedure may be illustrated by figure 2.3 below.

Figure 2.3. Housing Subsidy Calculation under RF Government Decrees No. 707 dated June 18, 1996, and No. 887 dated August 2, 1999



OCH – Charges for social norm of housing floor area
MPOT – Minimum wage
N – Number of household members
K – Ceiling for housing and communal services charges burden on household income
ПМ – Subsistence level

Source: T. Kutakova. Social Protection in Transition to Full Cost Recovery and Social Norms of Water Consumption in the Russian Federation. OECD Expert Seminar on Consumer Protection and Public Participation in Reforms of Urban Water Supply and Sanitation in NIS, Paris, March 2002.

The figure demonstrates that, while the first approach AB ensures that the housing subsidy depends on the household income, the new approach BC provides a constant subsidy independent of income. This approach conflicts with the basic principle of means-tested social assistance. Besides, a new problem emerges with the new approach: at point C, any marginal increase in household income will make the family ineligible to receive any state support.

This amendment caused already serious social consequences, and created problems for the operation of housing subsidies, as both grounds are acceptable for their provision. There is also an increased probability of fraud in the provision of information by applicants. The social subsidy burden on government becomes heavier, while projections of housing subsidy requirements become more complicated.

Kazakhstan

Kazakhstan increased charges for housing and communal services simultaneously with the introduction of social protection measures for the population in the form of housing subsidies. The programme was launched in 1996 and was designed similar to the housing subsidy programmes of Ukraine and Russia except for the fact that it is financed by local governments.

The significant difference of the Kazakhstan housing subsidy programme from those of Russia and Ukraine is rather large share of acceptable expenditures for payment of housing and communal services in the aggregate household income (30 percent). This precluded many low-income households from benefiting from the programme, pushing them into a miserable condition. As soon as the programme in Kazakhstan is regulated at the local level, some local governments decided to lower the acceptable household expenditure threshold. As a result, in 2001, some cities (Kustanai, Petropavlovsk, etc.) established 20 percent as the entry level.

Another specific aspect of the Kazakh housing subsidy mechanism is that local authorities decide in what form to provide housing subsidies – cash or non-cash. In the first case, housing subsidies are transferred directly into recipients' accounts. Housing subsidies are suspended should recipients fail to pay their portions of charges within a month. Households eligible for both privileges and housing subsidies ought to choose to participate in either social protection programme.

278,000 households (7.5% of the population) participated in the housing subsidy programme in 2001. The average subsidy is KZT 820 ($5.6) which is 6% to 8% of the charges for rent and communal services.

Kyrgyz Republic

Kyrgyz Republic implemented its housing subsidy programme on a phased basis. Bishkek, the capital of the country, began providing housing subsidies to low income households back in 1996. At that time, the programme covered primarily residents of multi-storey apartment blocks.

In 1998, the Concept for Reform of the Kyrgyz Housing and Communal Sector set four national standards (similar to Russia): (i) social standard for dwelling area; (ii) standard for service costs per 1 m^2 of dwelling area; (iii) standard for service cost recovery by residential customers; and (iv) standard for maximum household expenditures for communal services as a percentage of household total income.

A plan was made to raise tariffs gradually to the 100% cost recovery level. One step of this plan was to reach the level of 50% cost recovery level by the year 2000. The social standard for dwelling area was set at 18 m^2 per person, 35 m^2 per single person household; and 42 m^2 per two person household (in 2000, the standard was reduced down to 14 m^2 per person). The Concept also envisaged that maximum expenses for services as a percentage of household income would increase to reach 25% by 2000 and 30% by 2005.

In January 1998, to ensure better control of the spending of government funds and better targeting of subsidies, a payment book was introduced for households enrolled on a national level. The payment book was intended to keep records of payment for energy, fuels and communal services by subsidy recipients. The government also set three levels of tariffs for electricity and heat: a discounted level for consumption within social standards; a medium level for consumption above the established standards by all customers regardless of their economic situation; and a highest level for excess consumption of electricity and heat.

In 2000, the government took supplementary measures to protect needy customers. The government issued the Decree "On Compensations of Low Income Households and Individuals for Gas, Heat, and Hot Water Under Rising Tariffs for Energy Fuels," which introduced an additional type of social assistance to individuals with incomes below KGS 200 per family member. Like the housing subsidy programme, the new social assistance programme is administered by social protection offices. The amount of assistance is calculated as the difference between charges based on current tariffs and charges based on socially protected tariffs. The government will revise the socially protected tariffs each year so that they are brought up to the current level of tariffs by the year of 2005.

In 2001, 100,000 Kyrgyz households (or 9% of the total number of households) received housing subsidies in one form or another. The average housing subsidy was $3.82. The total budget cost of the housing subsidy programme was KGS 92.5 million (0.92% of the budget expenditures).

In **Belarus** a national housing subsidy programme was launched in 1997, though less than 0.1% of legal tenants received subsidies. Households qualified for non-cash subsidies under this programme if their charges for housing and communal services exceed 15% of total household income, taking into account effective privileges. This suggests that in a country where expenditures for social assistance account for 14% of the GDP, the existence of the targeted housing subsidy programme could be hardly justified.

Major statistics on housing subsidy programs in six EECCA countries is shown in Table 2.2.

Table 2.7. Major Indicators of Housing Subsidy Programmes in EECCA Countries, 2001

	Share of Households Receiving the Subsidy, %	*Average Monthly Subsidy per Household (USD)*	*Subsidy as % of Charges for Services*	*Maximum Expenditures for Services as % of Household Total Income*
Belarus	0.1	3.50	25.3	15
Kazakhstan	7.5	5.59	6 - 8	30
Kyrgyz Rep.	9.0	3.82	42.3	25
Russia	9.1	5.35	31.1	22
Ukraine	13.03	6.46	54.2	15/20

Source: National experts

The experience of EECCA countries shows that housing subsidies proved to be an effective tool to target social assistance for the poor and to protect them from the major price increases required for sector reform. They performed well in Russia and Ukraine, but further efforts are needed to ensure better targeting of the scheme. It is too early to evaluate housing subsidies in Kazakhstan, thought the high entry level and the low level of enrolled households give an indication of weaker performance of the scheme in this country. Performance of housing subsidies in Kyrgyz Republic needs to be studied further, while Belarus' experience indicates that the level of water utility reform is insufficient to call for such a form of social support.

One of the disadvantages of the housing subsidy is that the consumption standards within which the subsidies are granted are often overstated and set based on average consumption (Ukraine). Granting subsides based on actual consumption discourages people from economical consumption. Besides, the

provision of subsidies in non-cash form requires complicated transactions between social protection offices and utilities. Furthermore, they do not encourage customers to conserve resources.

The following ways to improve housing subsidy programmes in EECCA countries are proposed:

- Improving targeting by enhancing procedures for determining and verifying household incomes (introducing an institute of social inspectors, toughening means-testing).
- Moving from granting subsidies based on actual consumption levels and actual dwelling area to granting subsidies based on social standards of dwelling area and service consumption. This will not only ensure better targeting and fairness on the part of state social assistance, but also encourage low income households to consume services economically.
- Providing subsidies in cash form by transferring funds into special accounts of consumers where these funds may be used exclusively for paying service bills. This will streamline the granting mechanism and make people feel more responsible for paying bills. Introducing cash subsidies would be possible only if funds were transferred on time.

In the longer term, when prices for water services approach established cost recovery targets, the need for housing subsidies may diminish significantly. Probable growth of income of households can also reduce need in such programmes. At that stage, governments could discontinue housing subsidies. At the same time, there may still be smaller groups of consumers having difficulties with the water bill. General social programmes aiming to reduce poverty (described later) could cover the need for such water-related support.

2.3.2 Social Assistance for Poor Households

Several EECCA countries did not introduce housing subsidies, but instead opted for a different approach to protect communal service consumers. They introduced income support programmes for low-income household groups. Uzbekistan and Armenia were among the first to introduce such programmes. Ukraine and Kazakhstan have recently applied this approach as well.

Uzbekistan

In 1994, Uzbekistan introduced a system of social assistance, which differs from other post-Soviet countries, and is based on *mahalla* (a traditional cultural form of local government). Mahallas, or local communes, elect a chairman and a board of elders, who decide which households need assistance, and what kind

of assistance. There are approximately 12,000 mahallas in Uzbekistan. Every mahalla includes from 150 to 1,500 households (400 on the average).

In order to receive social assistance, households have to file a written application or be recommended by a mahalla chairman. Then, a committee of the "most respective citizens", including advisers to the chairman and some state governance agencies (local representative officers of the Labour Ministry, Tax Inspection, and Finance Ministry), makes a decision on whether or not to allocate the assistance. If the decision is positive, the next step is to determine the amount of assistance. This procedure includes visiting the premises of the applicant and preparation of a report on the composition of the household, employment status of its members, income and assets, as well as availability of a land plot for farming purposes. Based on the recommendations by the committee, the next mahalla meeting makes a final decision. Assistance is provided in the form of cash grants for three months. These grants are not earmarked for payment of communal service; it is up to the recipient to decide how to spend the money.

The primary source of all funds for social purposes managed by mahallas is the central budget. Regional budgets in principle could also finance these funds, but in practice they have no significant financial resources for this purpose[42]. Central funds are allocated at the beginning of each year by the Finance Ministry through regional and district representative offices. Funds are allocated among mahallas depending on the total number of households within their region, and not on the number of poor households. Thus mahallas in better-off regions receive the same amounts per household as mahallas in the poorest regions.

According to official data, 9% of households were given assistance in the fourth quarter of 1994, 21% in 1995, 15% in 1996, 17% in 1997, and 7% in 2001. There is a significant divergence in the share of households receiving social assistance by region: from 14% in Andizhan to 37% in Navoi. Children, families with single mothers, unemployed, rural and ethnic Central Asian households are among the main recipients of the assistance. The amount of assistance equals 1.5 to 3 minimal wages – in 2001 the average amount was UZS 3,350 ($6).

In addition to the social assistance to needy families, there are separate programmes of assistance to families with children under 16 and to mothers

[42]. Voluntary contributions to mahallas can, in principle, be made by enterprises and private individuals. To a certain extent, such contributions are tax-deductible for businesses and individuals.

with children under two. On the whole, the national social assistance system covers over 2.2 million households. The total yearly cost of social protection programmes is 45% to 50% of the Uzbek state budget expenditures[43].

Mahallas can assess the financial situation of households based on a number of criteria, instead of just on cash income indicators, thus identifying the poorest. The system is decentralised and flexible, and does not create heavy bureaucracy. At the same time, it allows for arbitrary decisions, which may lead to groundless exclusion or inclusion of individuals into the needy category. Allocation of central funds to mahallas is not based on the difference of living standards in various regions, thus it fails to provide support to the poorest households of the country. Assistance provided by mahallas does not ensure that the consumers will actually pay for communal services, including water.

Armenia

In Armenia, a system for social protection of the poorest households was introduced in the mid 1990s, when a severe economic crisis affected almost every family in the country. In 1994, a means-testing programme to estimate income level of households was launched based on a comprehensive database of households. In 1999, a unified state family benefit system, PAROS, was introduced.

The ministry of social security is responsible for the development of social protection policy and for its implementation. The programme is fully funded by the state budget. It is managed by 55 local offices of the Ministry of Social Security: in each region (marz) there are three or four social service offices, and 12 offices in Yerevan.

Family benefits are granted based on a means-testing score system. Any family applying for benefits is required to fill out a *family passport* and provide supporting documents. On this basis a score for the family is calculated; to become eligible for social assistance the family has to score at least 36 points.

Means-testing includes verification of a large number of parameters: social category (orphan, disabled, pensioner, small children, unemployed, student), and material well-being (financial income, possession of vehicles, securities, housing, livestock, land, modern video and audio equipment, purchase or sale of valuable items over last six years, the amounts of electric power and

[43]. "Up to the half of the total Uzbek state budget expenditures is spent for social protection programs for the needy", // Uza.uz// December 28, 2001.

international calls bills). To check information provided by the applicants, social workers may visit families.

Family benefits are granted to households for a period of 12 months, at expiry of which the eligibility needs to be renewed. Benefits are delivered to the place of residence in cash by post on a monthly basis. The large volume of information and complex and fast data processing needed for the programme are managed by the intensive use of computer technologies. All local social service offices are equipped with computers.

State budget funds earmarked for family benefits are being reduced every year, e.g. in 1999 the amount was AMD 21 billion (9% of budget expenditures), while in 2002, it was AMD 12 billion (4.5%). For this reason, the means-testing criteria had to be reviewed to better target the poor. As a result, the total number of recipients over four years from 1998 to 2001 decreased from 657,000 to 532,000, i.e. by about 20%. Over the same period, the number of pensioners decreased by about 8%; however, the number of children of all categories increased by 4%. Average family benefit in Armenia dropped from AMD 7,400 per household in 1999 down to AMD 6,500 in 2001 (approximately $12). For comparison, a teacher's wage is about AMD 8,000 - 10,000.

The main drawback of the programme is that it levels out all benefits: whereas the eligibility for a benefit depends on the family situation, the size of the benefit is not related to specific factors. As a result, families that apply for a benefit but are turned down become automatically poorer than those to whom benefits are granted.

The family benefit programme has played an important role in mitigating the energy and general economic crises in Armenia. At the same time, it may not be sufficient in the case of a serious reform of the water supply and sanitation sector. A low level of cost recovery and the need for a major tariff increase may cause a serious affordability problem. In this case, a special, water-related assistance programme may be needed.

Ukraine

In April 1999, the government of Ukraine introduced a programme of targeted social assistance to low-income households. The new programme became the second Ukrainian targeted social assistance programme after the housing subsidy programme, and the next step towards creation of a unified targeted social assistance programme, which would be based on a unified approach towards eligibility and the provision of social assistance.

This assistance is provided in cash to low-income households with an average monthly income below a minimum subsistence level determined by the law. The amount of assistance is determined as the difference between the minimum subsistence level and the aggregate monthly income of the household. However, the public budget does not have sufficient funds to finance this programme in full at present. Until the economic situation improves, the amount of assistance will be determined on the basis of available funds, set annually on the basis of the actual capacity of the national budget of Ukraine. For instance, it was set at UAH 80 ($15) per household member for the year of 2001.

Under this programme, social assistance to a low-income household is granted for a period of six months. In order to encourage households to be self-sufficient, the level of social assistance can be gradually reduced to 50% if a household fails to exercise opportunities for finding additional sources of income.

The programme is to be funded from the state budget. Local governments can provide supplementary payments based on the approved regional minimum subsistence level, to be funded from local budgets and regional social assistance funds.

The new programme of social assistance to low-income households was designed as a core social protection system aimed at supporting the income level of a household rather than funding its expenses, as in housing subsidy programmes. During the initial two years, the programme covered a relatively small percentage of households because of the strict eligibility criteria. In 2000, only 13,400 household were enrolled in the programme and assistance totalled UAH 1.7 million. In 2001, the number of participating households increased to 412,000 and the total value of assistance reached UAH 149 million.

It is expected that in future this programme will become the main mechanism for social protection, and may replace the housing subsidy programme.

Kazakhstan

In January 2002, Kazakhstan introduced a state targeted social assistance programme. In many respects the mechanism for implementing this programme and determining eligibility for assistance is similar to the current Ukrainian programme.

Under the state targeted social assistance programme, cash benefits are granted to individuals or households with an average monthly per capita income below the poverty line that is set by regions and cities of Astana and Almaty. According to the Government Decree "On Approving the Temporary Regulation on Granting Targeted Social Assistance," the assistance will be granted to households whose total incomes fall below the doubled official threshold of KZT 1,600 ($11).

The aggregate income of a household includes all types of income net of housing subsidies and targeted social assistance actually received in cash or in-kind form during a certain period of time. Targeted social assistance is assigned for the current quarter and is paid on a monthly basis. Funding is provided by local budgets. At this stage, it is premature to evaluate the effectiveness of this programme.

2.4 Legal, Technical and Other Measures

This section will present legal and technical measures to protect water consumption by poor households. It will focus on debt forgiveness and prohibition of disconnection from services, which can be considered a form of social protection, as they provide an economic relief for customers unable to pay their bills because of economic difficulties. The section will present the opportunities for alternative water supply. Finally, the section will point out the measures that are currently not used in EECCA countries, but could become important measures in the future.

2.4.1 Debt Management

According to a survey, five out of twelve EECCA countries (Belarus, Kazakhstan, Kyrgyz Republic, Russia, and Uzbekistan) have established sanctions for delays in payment for housing and communal services. Most countries except for Azerbaijan, Georgia, Moldova, and Tajikistan use judicial methods to collect debts. There have been few cases of evicting non-payers in Russia, Kyrgyz Republic and Belarus although eviction is theoretically possible under many countries' legislation.

Ukraine

The arrears for housing and communal services accumulated between 1996 and 2002 reached UAH 7.1 billion ($1.32 billion). Collection rate remained very low in 1997 through 2001: while in 1997 almost 30% of bills went unpaid, in 2001 the share of unpaid bills fell to 15%. Despite the improving compliance, by 2002 the debt of an average household in Ukraine exceeded 12 months.

Government policy has significantly facilitated this high level of indebtedness. In particular, wages and other social guarantee arrears of the state have been accumulating at the same time. In addition, penalties for untimely payment for services were suspended in 1996, and many households use this as an opportunity to delay payments until they become "cheap" due to inflation.

The government has tried to use other legal instruments to influence non-payers:

- An enterprise can sue a debtor in court, and arrears can be recovered by taking out a certain percentage (25 percent) from debtors' monthly income, or at the expense of debtors' property. Due to an ineffective legal system, this procedure is complicated and not often used.
- Owners of privatised apartments can theoretically be evicted upon a court decision on arrears recovery through debtor's property. But this issue has not been adequately settled in legislation and such practices are not common.
- Housing subsidy recipients can enter into agreements with communal enterprises on restructuring arrears and repaying debt over a negotiated period (up to two years) conditional to 100-percent current payments for services consumed.
- Upon the decision of local authorities, arrears can be written off but this is possible only in exceptional cases and upon availability of good reason, mostly in order to protect the underage. The national government may decide to write off debts incurred by certain categories of the population[44].

All the above measures have proved to be either inefficient or ineffective. Only in November 2002, the Parliament passed a law resuming penalties for late payment and allowing utilities to restructure indebtedness for a period of up to 60 months. But, there is no mechanism in place to implement this law.

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[44]. For instance, in 1999, on the eve of the Presidential election, a one-time writing off arrears for housing and communal service was made for WWII veterans and invalids (for arrears accumulated as of October 1, 1999).

Armenia

Total residential debt to YerevanVodokanal alone reached AMD 21 billion ($37.85 million) in 2002, compared to an annual cost of services of AMD 6 billion. In December 2002, Armenia enacted the Law "On the Terms of Repayment of Debts for Water, Wastewater, Wastewater Treatment and Irrigation Services". According to this Law, residential customers, urban and rural communities, condominiums, cooperatives and other consumers of water and wastewater services were forgiven their debts for service consumed prior to January 1, 2000 provided they enter into a debt restructuring agreement, requiring 50% to 30% repayment of debts accumulated in 2000-2002. Households receiving family assistance will pay their debts at the 30% or 15% rate. According to the Law the mandatory condition for entering into a debt restructuring agreement is installing water meters at the expense of a customer with a possible six-month credit for the cost of its purchase and installation. For the poor families, which are enrolled in the family benefit system, the period of repayment for the cost of meter may be extended to 5 years. This program is aimed at improving the quality of services and overcoming the non-payment crisis in the country where by 2001 the compliance rate was at 35-40%.

Uzbekistan

In addition to the legal actions presented above, Uzbekistan also uses other measures to ensure the payment for communal services. A mahalla is responsible for dealing with debtors, and can retain 6% to 20% of collections for communal service should the collections exceed 75% of the total charges for services. Since mahallas are also responsible for distributing social assistance, they can easily find out whether debtors really need social assistance.

Russia

Under the Law "On Fundamentals of Federal Housing Policy", customers that have not paid rent and communal services for over six months must be evicted from apartments into dormitories. But this law does not work because there are no dormitories for non-payers to be evicted into. In Moscow, notary-certified applications to court have only been filed against less than one percent of non-payers. It is true, though, that Moscow and some other cities have started constructing so-called social housing, which might be a solution to housing problems not only for those who are not able to pay for large apartments, but also for those who cannot afford to buy spacious housing at market prices.

Indebtedness of households is among the main reasons for financial problems of utilities. At the same time, accumulation of debt is not directly linked to a low

ability of households to pay. Many public opinion polls and sociological surveys demonstrate that most poor households, including pensioners and subsidised households are among the most disciplined payers, as they are afraid of possible fines for late payment or to loss of the subsidy. The worst non-payers are usually relatively well-off residents that can afford to pay, but are not encouraged enough to do so and those accustomed to the situation and looking forward to the debt write off. Therefore, provisions for debt penalties should be maintained in the legislation to prevent debt accumulation and strengthen payment discipline. Concurrently, debt restructuring should be developed to address already accumulated arrears.

2.4.2 Disconnection of Non-payers

Legislation in EECCA countries usually allows disconnecting consumers for non-payment of housing and communal services[45]. Debtors living in separate houses can be cut off from service. In practice, however, disconnection is rarely used (see Attachment 7) due to the technical difficulties incurred in the disconnection of selected apartments of non-payers in large apartment blocks. Cases of entire building disconnection occur when the total indebtedness of the apartment house has reached a very high level. In such cases, however, customers who pay on time are disconnected from services as well.

In some EECCA countries, another form of disconnection has been reported: the cut-off of water utilities from electricity supply for non-payment. In this case, water supply is suspended for the entire city, leading to local epidemiological disasters.

The possibility of disconnection should be maintained in the legislation as an ultimate sanction against bad non-payers and to strengthen the overall discipline. In cases when the consumers are disconnected from the centralised water supply a minimum amount of water for basic human needs must be provided to them.

[45]. The Ukraine Supreme Rada Decree "On Payment for Housing and Communal Services by Residential Consumers of Ukraine" dated March 18, 1999 *prohibits* disconnecting electricity, heat, water and gas supply and evicting citizens for failure to pay housing and communal service bills due to arrears of wages, pension benefits and subsidies. However, decrees of the Supreme Rada are declaratory and not mandatory for enforcement.

2.4.3 Alternative Water Supply Sources

National governments and local authorities can play a key role in providing alternative water supply. Alternative supply may be required for areas not provided for by public water supply systems, in cases of disconnection from the system or accidents, or as a source of high-quality potable water where piped water is not safe for drinking.

Alternative supply can be provided through standpipes, wells and fountains, or through tanked and bottled water. Ukraine has a traditional system of free street standpipes and wells in residential neighbourhoods, primarily in rural areas. Recently, many Ukrainian cities and towns have embarked on a large-scale programme of creating networks of free standpipes. A considerable portion of population in Kazakhstan, Kyrgyz Republic and Uzbekistan consumes water from standpipes, yet pay for water based on the consumption standard (3 m^3 to 3.5 m^3 per capita per month).

There is a rule in Ukraine, Russia, Armenia, and possibly other countries requiring water providers to provide an alternative water supply in the event of disconnection to ensure a limited water supply for basic human needs.

Bottled water is sometimes considered as an alternative supply. The consumption of bottled water has significantly increased in all EECCA countries over the last decade. It should be noted, however, that bottled water should not be considered a sustainable alternative to centralised piped water supply due to its much higher costs.

2.4.4 Tariff Measures and Special Water Programmes

Tariff-Based Measures

Tariff-based measures are widely used in the OECD and other countries. They aim to provide incentives for reducing water consumption and in this way reduce the bill for water services. Tariff-based measures include lifeline and progressive tariffs consisting of a connection fee and flat or increasing volumetric fee.

Tariff-based measures are not used in any of the EECCA countries. Use of individual water meters is still limited. One of the main reasons for this is the

low rate of water metering in individual apartments[46]. Therefore, the use of two-tier or progressive tariffs is not feasible in most EECCA countries at present.

At the same time, given the high water consumption in EECCA countries, economic incentives to reduce water consumption are highly desirable, along with financing the repair of leakage and increasing the production efficiency of water utilities. Therefore, installation of apartment and block meters should be encouraged. In those countries where water metering covers a large percentage of the population, e.g. Moldova and recently Armenia, it is feasible to introduce two-tier and multi-tier tariffs.

Special Programmes for Water and Wastewater Customers

Currently, no special programmes in EECCA countries to protect water and wastewater service customers exist separately from communal and housing services. Water is still largely viewed as an element of an integrated communal service on the whole, and not the most expensive one. Therefore, the most vulnerable water consumers normally receive support in the frame of existing social protection mechanisms, including housing subsidies or allowances for poor households. However, considering the social importance of water services and the potential significant increase of water prices due to sector reform, special programmes may be needed in several countries, e.g. Armenia and Moldova.

2.5 Recommendations

Principles for Provision of Social Assistance for Water Consumption

EECCA governments have started to reform the social protection systems in their countries. They have introduced new, targeted programmes to support the poor and to ensure their water consumption. At the same time, some outdated and ineffective programmes coexist with these new tools. Therefore, governments need to review the overall system in order to increase their performance. The following principles can guide them:

- Social protection measures for water consumption should ensure an *equal access* to water for all households to meet their basic physiological and hygienic needs, irrespective of income level.

[46]. For more information on water metering in EECCA countries, please refer to the working paper on this issue www.oecd.org/env/eap/

- Social protection systems should be *targeted;* i.e. social support should be provided only to those who really need it.
- Social protection systems should be *effective;* i.e. the amount of provided support should be sufficient to ensure consumption by the poor.
- Social protection systems should be *realistic* i.e. financially sustainable, based on actual budget capacities to provide such support.
- Social protection systems should be *easy to administer* as well as transparent and accountable; the state should bear the ultimate responsibility for all social protection measures.
- Social protection systems should provide incentives for *water saving* by consumers.
- Social protection systems should relieve social tension but prevent *side effects* such as market distortion.

Public Budget Subsidies, Cross-subsidies and Privileges

Public budgets in most EECCA countries are not able to continue supporting low water prices for all households through public subsidies to water utilities. At the same time, they continue to play an important role in the financing of the water supply and wastewater sector. Therefore, during the transition period it is recommended:

- To maintain limited state budget funding to support industry development, to develop clear strategic directions for such financing.
- To introduce a requirement for the tariff setting authorities (often local governments who own water utilities) to compensate the differences between the production costs of water utilities and the established tariffs.
- To establish reduced or set a zero rate of value added tax on residential tariffs for water.

Cross-subsidies between industry and households create significant market distortions and are being gradually phased out. While this is a positive trend in general, phasing out cross-subsidies should be a gradual process, taking into account the ability of households to pay cost-based prices and the financial stability of water utilities. Cross-subsidies within the household sector, i.e. of lower-income by better-off households, may be acceptable so long as economic and environmental signals are not seriously compromised.

Under the system of privilege, discounted or free services are provided to certain categories of citizens based on their social or professional status. This system does not target the poor, and is often not justified economically or socially. Due to the extreme complexity involved in immediate termination of the existing tariff preference systems, most countries have opted for a gradual reform of privileges. The following approach is recommended for these efforts:

- Occupational privileges must be replaced by targeted benefits by employers.
- Privileges for different categories of socially vulnerable citizens must be replaced by relevant social benefits based on means testing, where this can achieve a higher social benefit (i.e., administrative costs are sufficiently low).
- Water utilities and other communal service enterprises must be released from the responsibility to administer privileges (these functions should be transferred to social protection authorities).

Housing Subsidies and General Support to the Poor

The experience of EECCA countries shows that housing subsidies prove to be an effective tool to target social assistance for the poor and to protect them from major price increase required for sector reform. The following ways to improve housing subsidy programmes in EECCA countries are proposed:

- Improving targeting by enhancing the procedures for determining and verifying household incomes (introducing an institute of social inspectors, toughening means-testing).
- Moving from granting subsidies based on actual consumption levels and actual dwelling area to granting subsidies based on social standards of dwelling area and service consumption. This will not only ensure better targeting and fairness of the state social assistance, but also encourage metered low income households to consume services economically.
- Providing subsidies in a cash form by transferring funds in the special accounts of consumers where these funds may be used exclusively for paying service bills. This will streamline the granting mechanism and make people feel more responsible for paying the bills. Introducing cash subsidies would be possible only if budgets transfer funds on time.

In the longer term, when prices for water services approach established cost recovery targets, the need for housing subsidies may diminish significantly. At that stage, governments could discontinue housing subsidies. General social programmes aiming to reduce poverty could cover the remaining need for water-related support. Such programmes have been launched in Ukraine, Kazakhstan and Russia. For instance, it is expected that the programme of social assistance to poor households in Ukraine will become the main mechanism for social protection, and may replace the housing subsidy programme.

At the same time, in countries where such programmes were established earlier (e.g. Armenia and Uzbekistan), and played an important role in mitigating the social hardships of the transition period, the programmes may not be sufficient in the event of a serious reform of the water supply and sanitation sector. Low

levels of cost recovery and the need for a major tariff increase may cause a serious affordability problem. In this case, a special, water-related assistance programme may be needed.

Debt Restructuring and Disconnection of Non-Payers

The problems of indebtedness and non-payment should be addressed at the political level by enforcing payment discipline for all customers. Therefore, provisions for debt penalties should be maintained in the legislation to prevent debt accumulation and strengthen payment discipline. Concurrently, compliance from households can be demanded only when the state meets its own responsibilities and pays wages, pensions and other social benefits on time. In this case, the current system of sanctions against non-payments or late payments for communal services will be effective. Debt restructuring should be developed to address already accumulated arrears.

The possibility of disconnection should be maintained in the legislation as an ultimate sanction against bad non-payers and to strengthen overall discipline. But it should only be used within certain limitations. Disconnection of apartment blocks with both non-payers and disciplined consumers should not be allowed. In cases where consumers are disconnected from the centralised water supply, a minimum amount of water for basic human needs must be provided to them.

Tariff Measures and Special Water Programmes

Given the high water consumption in EECCA countries, economic incentives to reduce water consumption are highly desirable, together with financing the repair of leakage and increasing the production efficiency of water utilities. Therefore, installation of apartment and block meters should be encouraged. In those countries where water metering covers a large percentage of the population, e.g. Moldova, it is feasible to introduce two-tier and multi-tier tariffs.

Considering social importance of water services and the potential significant increase of water prices in conjunction with sector reform, special programmes to support water consumption by the poor may be needed in several countries, e.g. Armenia and Moldova.

CHAPTER 3. CONSUMER AND PUBLIC INVOLVEMENT IN SECTOR REFORM

3.1 Main Consumer Rights and Framework for Public Participation

This section identifies main problems in the relationships between consumers and water utilities. It presents the main rights of consumers, and establishes a framework for public participation. It finally specifies key public players in the urban water sector reform, including NGOs and consumer associations.

3.1.1 Conflicts Between the Interests of Consumers and Utilities

According to the Almaty Guiding Principles, the main objective of the reform of water supply and wastewater services in EECCA is "to ensure that good quality water and sanitation services are delivered reliably, sustainably and at least cost to the population." In order to deliver such services to consumers, water utilities need sufficient resources, including financial resources recovered through water bills to households. In times of radical reforms, the interests of service providers and customers often come into conflict.

The most common problems that consumers encounter in the area of water supply and sanitation are the following:

- Deterioration of service quality and limited access to safe drinking water; including lack of universal service coverage.
- Rapid increase of prices for all communal services including the water and wastewater services and lack of transparency in the pricing system.
- Unclear and contradictory legislation regulating the relationship between consumers and water utilities, difficulties in conflict resolution and inadequate response to public complaints.

From their side, water utilities accuse households of unwillingness to pay for the services they consume as well as a lack of understanding about the problems and actual costs of service providers.

Crises of trust between the public, administrations and utilities, growing mutual dissatisfaction and underdeveloped practices of public participation provide fertile soil for the politicisation of debates, arbitrary decisions and hampering reforms.

EECCA governments need to ensure the protection of consumer rights and promote public participation in the reform of the urban water sector in order to achieve *two main objectives*: to ensure public and political support for the proposed reform (including price increase), and to protect broad public interests from arbitrary decisions and abuse of monopoly powers of water utilities, in the frame of a broader regulatory reform.

3.1.2 Main Rights of Consumers

The United Nations Guidelines on Consumer Protection[47] establish general principles and main rights of consumers. They include the following:

- The protection of consumers from hazards to their health and safety.
- The promotion and protection of the economic interests of consumers, including the exercise of choice.
- Access of consumers to adequate information to enable them to make informed choices according to individual wishes and needs.
- Consumer education, including education on the environmental, social and economic impacts of consumer choice.
- Availability of effective consumer redress.
- Freedom to form consumer and other relevant groups or organisations, and the opportunity of such organisations to present their views in decision-making processes affecting them.
- The promotion of sustainable consumption patterns.

These consumer rights should be introduced into the urban water sector reform in EECCA countries. These principles should be reflected in the national legislation for consumer protection in each country. The main approaches for the implementation of these rights include:

- Integration of appropriate norms in the national and local legal laws and secondary legal acts.
- Ensuring a transparent and predictable state policy in the urban water sector reform.
- Promotion of good practices among the service providers.
- Information and education of the consumers.

[47]. UN Guidelines on Consumer Protection, United Nations, 1985, and as expanded in 1999.

3.1.3 Framework for Public Participation

The launch of water sector reforms coincided in time with the enacting of the UN/ECE Convention on Access to Information, Public Participation in Decision Making, and Access to Justice in Environmental Matters (Aarhus, 1998). Countries that ratified the Convention (including all EECCA countries except Russia and Uzbekistan) committed themselves to public involvement in decision-making on significant environmental matters.

Water and wastewater services are not directly covered by the Convention. Annex 1, which establishes a list of activities subject to the Convention, mentions only some of the activities, which fall under the jurisdiction of the Convention (including large wastewater treatment plants, large scale water abstraction and major projects to transfer water resources between river basins). At the same time, the Aarhus Convention provides a framework for public participation in environmental decision-making, including the following main forms:

- Information.
- Public participation in decision making processes.
- Access to justice.

This framework proposed by the Aarhus Convention could be applied in other sectors, including the municipal water sector, through their legislative introduction into water sector decision-making at the national level. More specific forms of implementing the Aarhus Convention principles in the water sector are presented in the following sections.

3.1.4 Key Public Players

According to the Aarhus Convention, "the public" means one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organisations or groups. This broad notion includes individuals and organisations, including NGOs and consumer associations.

In the urban water supply and sanitation sector the term "consumer" may include both individuals and households. For example, the Russian Law "On the Protection of the Rights of Consumers", interprets "a consumer" as "a citizen who has an intention to order or to purchase, or ordering, purchasing or consuming goods (works, services) exclusively for private, family, household and other needs, which are not related to commercial activity". This section will focus on households living in apartment blocks who represent the major share of the public in EECCA countries.

Overall democratisation led to a growth in the activities of NGOs, who represent the most organised and conscious citizens, often aiming at the protection of the civil rights of the public. As water supply and wastewater services have a direct impact on the prosperity and health of the population and on the state of the environment, environmental and social NGOs are becoming active in this area. A variety of NGOs are now active in this field: environmental NGOs in Armenia, Georgia and Russia; consumer rights protection associations in Russia, Georgia, Armenia, Kazakhstan, Moldova; free entrepreneurs associations in Azerbaijan; street self-management committees in Ukraine; water users associations in Armenia; mutual aid associations similar to credit unions as well as rural public associations of water users in Kyrgyzstan; traditional community organisations of mahallas in Uzbekistan and others.

Civil society organisations, including public associations, non-governmental organisations, associations of housing owners and consumer groups can play an active role in protecting consumer rights and facilitating public participation in the sector reform. Their activities should be acknowledged and supported.

3.2 Information for Decision-makers and for Consumers

This section provides an overview of the current practices of information management related to the reform of water supply and wastewater services. It touches upon information provision for decision-making and focuses on the mechanism of information provision to consumers. The role of public education is also discussed.

3.2.1 Studying Consumer Preferences

Today, national and local decision-makers responsible for the development of plans for reforming the water and wastewater sector pay little attention to effective residential demand for services and households' requirements as to the level and quality of services. Decisions are often influenced by political interests, while projects are funded based on the "residual principle".

At the same time, a number of local authorities and water utilities in EECCA conduct public and customer surveys (see sections on affordability and social protection). NGOs are also active in carrying out public opinion polls and public surveys. However, the information they collect is often not available or ignored by agencies responsible for reforming the water sector. International Financing Institutions active in the region, e.g. the World Bank and EBRD, other donors and investors conduct sociological studies for their projects. Results of such studies help determine optimal levels of service and tariffs, and

they can support the political debate about raising tariffs and help prevent social tension.

As households are becoming the major customers of water utilities, the owners and operators of water supply and wastewater services should pay greater attention to the opinions and preferences of these consumers. Consumer surveys and public polls could be used regularly at the local level, in addition to or as a part of the methodologies for assessing water affordability presented earlier.

3.2.2 Information for Consumers

Providing information to the consumers is an important tool to ensure public support for the municipal water sector reform. Typically, it is the mandatory responsibility of local authorities to inform the public about the level of services, quality of the water and compliance with national standards. Such public reports should be based on information from sanitary and epidemiological services and water utilities and should be delivered through the media on a regular basis.

But the growing consumer demand for information often remains unanswered partly due to old traditions of secrecy, sometimes because of a lack of accurate and timely information and slow reactions of officials. Another reason is that the broad public does not trust official data, in particular on drinking water quality, which is difficult to control at the tap. For example, according to a sociological survey conducted by NGO MAMA-86 in five Ukrainian cities in 1999, 71% of respondents stated that they did not trust official information on drinking water quality. [48]

Some EECCA government agencies take measures to facilitate informing the public: they set up new public relations offices, create web pages, and organise seminars and conferences. Recently, some governments started publishing national reports on water; e.g. the Ministry of Environment and National Resources of Ukraine has published a national report on water resources as a part of the state of the environment report. The Law of Ukraine on Drinking Water envisages that the relevant sector authority should prepare an annual national report on drinking water quality and the situation in the water supply and wastewater sector.

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[48]. Potable Water in Ukraine: Extending Relationships and Opportunities at the Local and International Levels; 2nd Edition of the MAMA-86 Report on Water Campaign, Kiev, 1999.

Selected water utilities (e.g. Moscow, St. Petersburg, Kiev and other utilities) have established public relations units, “hot” telephone and internet lines and have launched public information campaigns. They inform the public on current problems and solutions, initiate public discussions on water supply problems and deal with debtors on individual basis. The experiences of other countries could be useful in designing specific mechanisms of information provision (see Box 3.1).

National and local governments need to improve information provision, including the provision of full, regular and reliable information about sector reforms and specific situations in particular locations. The minimum set should include the information on:

- Service standards, consumption norms, normative (allowed) interruptions of service provision.
- Levels of and rules for establishing prices and tariffs, including advanced information about changes in prices and tariffs.
- Procedures and forms of conflict resolution.
- Rights and obligations of consumers, service providers and regulatory authorities.
- Service providers, including information about their financial and industrial performance (standards for the provision of such information should take into account the local monopoly status of water utilities, therefore information which can be treated as commercial secrets in competitive markets cannot be treated as such in local markets).
- Existing privileges and subsidies, procedures and documents required for receiving them.
- Situation and challenges in the sector and reform measures.

Box 3.1. Information About the Quality of Drinking Water in the USA and the Netherlands

The U.S. Act on Safe Drinking Water defines each citizen's right to free access to information on the quality of the potable water that they consume. In case of any deviations from official standards or problems with the water quality, customers are immediately informed and measures are taken to solve the situation. Together with regular water bills, each customer receives from the water supply company "confidential customer reports" containing all relevant information on the quality of services provided and safety of the water consumed. The US Environment Protection Agency operates a hotline on potable water matters to extend opportunities and promote freedom of communication. Relevant information is also communicated through web sites of government agencies and local water supply companies.

In the Netherlands, each citizen has a right to receive expanded information on the quality of tap water. Besides, at the end of each year, water companies publish annual reports with the following information:

- Major indicators about production (production, sales, finance, staffing) and management (management staff and shareholders) of the utility.
- Report from the managing directors on the major and secondary processes and social aspects.
- Financial statement (including budgets, profits and loses).
- Attachments: list of shareholders, organisational chart, water quality, sales, external relations, cash flow.

Source: Mama 86

Information should be provided in a form accessible for consumers, including:

- Contracts with the service providers/suppliers should include detailed description of all the conditions (description of the service, the payment and the rights of the parties according to the minimum set of information presented above).
- Annual reports on the performance of water utilities based on clear and transparent performance indicators[49] (e.g. as in the Netherlands).
- Detailed and informative bills for water supply and wastewater services (e.g. in a number of Russian regions bills contain contact telephone numbers of the service provider, information about the level of family income below which this specific family is eligible for a housing subsidy, explanations about the calculations of the bill).

[49]. For more information on performance indicators, please refer to the relevant working paper and reports by the EAP Task Force/OECD.

- Mass media, including official publications and announcements (including timely warnings about accidents and recommendations about measures to ensure health safety, information about tenders and other).
- Visual and hand-out information (posters, newsletters, etc.) disseminated in the offices of the housing and communal services.
- Public relations units at water utilities.

Local governments, sanitary and epidemiological services, housing maintenance organisations, and water utilities should play a leading role in informing the public about water supply and wastewater services at the local level. It is important to establish a clear division of responsibilities for information provision between these actors.

Besides, independent information about the performance of the sector can play an important role during the reform process. The right of the public for carrying out a public audit or expertise of water utilities should be officially, possibly legally established. Full information about the performance of utilities (including reduced treatment of commercial secrets for local monopolies) should be made available for independent experts.

3.2.3 Public Education

Successful sector reforms depend not only on whether households are informed about water and wastewater sector problems, but also on their understanding of these problems and the links between their individual consumption and economic, social and environmental consequences for society.

Both national and local governments and utilities could play an effective role in increasing public awareness about the value of water as a public good and a limited natural resource. Public awareness campaigns and educational programmes can be an effective supplement to the economic incentives for responsible water use. Selected water utilities support such campaigns, prepare various brochures and offer site visits, mostly for children and students.

Environmental NGOs could be particularly effective in educating the public about rational water use. Their educational activities often focus on the necessity to value water as a public good, to pay for drinking water consumption and for wastewater treatment, practical training in water saving, improved sanitation and personal hygiene, as well as advising consumers about their rights. NGOs implement a variety of projects to address concrete problems associated with drinking water as well as water resource management.

3.3 Participation in Decision-making

This section establishes the main principles for effective public participation in decision-making during urban water sector reform. It presents the most effective forms of public participation, including pubic hearings and consultations, as well as participation in administrative mechanisms and procedures.

3.3.1 Principles of Effective Public Participation

In principle, elected bodies such as parliaments should play the main role in representing the interests of the public. However, experience from all parts of the world proves that public scrutiny and increased transparency are needed to ensure their performance. In EECCA the need for transparency and accountability at the local level is exacerbated by the ambiguous role of local governments in the field of water supply and sanitation, as they are, at the same time, the owners, regulators and consumers of water utilities.

The experience of EECCA and other countries demonstrates numerous difficulties on the way to effective public participation in the area of urban water supply and sanitation.[50] Often, the public and the authorities are not prepared to take part in a dialogue; their relations are marred by various negative stereotypes and lack of mutual trust. Lack of co-ordination between numerous NGOs, insufficient expertise and financial resources do not allow them to present a strong position aiming to protect broad public interests. Often the public does not know about existing mechanisms for participation. At the same time, the process of public participation in some cases becomes an objective in itself when dominated by NGOs selected on an ad-hoc basis without a full representation of main stakeholders.

Based on the analysis of this experience, it is possible to propose the basic principles of public participation in the decision-making in the water supply and sanitation sector, including the following:

- *Clear focus*: Public participation is most effective when it focuses on specific issues and subjects. Sometimes special processes and bodies are established to promote public participation in urban water sector reform (e.g. public chambers at the regional level in Russia), which deal with a broad range of sector issues and may be too abstract; such mechanisms function more effectively when their mandate and tasks are clearly formulated, and focus on specific issues.

[50]. P. Kryuchkova, “Society and the power: mechanisms for interaction”, M., IIF “Spros-KonfOP”, 2002.

- *Representation and participation*: To ensure effective participatory processes, the interests of all main stakeholders should be represented in consultative bodies and processes, including water utilities, public authorities, consumer groups and others. Consultative and participatory processes or bodies should be open for new members and stakeholders. At the same time they will benefit from including in their membership participants with specific expertise relevant to the debated issues.
- *Information*: Information about the consultative processes and bodies should be open, including information about the consultative mechanism and its operational procedures, about reached agreements and areas of disagreement. Such openness increases the responsibility of the stakeholders participating the in the consultations, and provides support to the implementation of the reached agreements.

3.3.2 Public Hearings and Consultations

Public hearings and consultations provide an effective mechanism for public participation in decision-making. Many countries actively use these forms of public involvement during the process of development of new laws and programmes, when considering tariff proposals and local development plans for water utilities.

Box 3.2. Public Participation in Tariff Setting in the USA, Chile and in Kazakhstan

The general tariff revision process in the USA includes public hearings, which are a quasi-judicial procedure in the course of which not only the resource providing company, but also other stakeholders (competitors, clients, shareholders, customers etc.) may present their calculations and other proofs justifying proposed tariffs. Public hearings are announced well in advance. A regulator makes a decision based on parties' arguments and the regulator's own conclusions.

In Chile, special expert groups established at a regional level, assist municipalities in evaluating tariff proposals submitted by utilities. This arrangement is called for by the lack of sufficient expertise in each municipality. One of the members of the special expert group can be nominated by the public. In this way, the broad public, which often does not have sufficient capacity to evaluate a tariff proposal either, can be assured that their interests are protected by their delegate.

In Kazakhstan, local offices of the Antimonopoly Committee, responsible for the approval of water utility tariffs, can organise public hearings if they expect that a newly proposed tariff could cause social protests. At the same time, this form of public consultation is used with a lot of caution, as effective public consultations require, on the one hand, improved public awareness, and on the other hand, increased transparency of public administration.

Source: Mama 86, EAP Task Force working papers

There are already numerous examples of public participation in municipal water sector decision-making in EECCA. Public consultations with environmental NGOs provided important inputs to the development of the Guiding Principles for the Reform of the Urban Water Supply and Sanitation Sector in the EECCA, adopted at the Almaty ministerial meeting in October 2000.

Ukraine and Armenia organised public hearings and consultations at the national level on draft laws on drinking water. In several countries (Armenia, Kazakhstan, and Ukraine), the right for public hearings in the sector is stipulated in national legislation.

The most extensive experience of public participation has been accumulated at the local level, particularly in the development process of municipal programmes for improving water supply and wastewater services. Such consultations can be initiated by the public, local authorities or water utilities. They help local authorities and utilities to identify the most appropriate measures needed to reform local water supply services and to ensure public support.

In some countries public consultations and hearings can address tariff setting. It should be noted however, that consumers and their associations should only have a consultative role in such discussions, and cannot have a direct influence such as "voting" on tariffs, as tariffs should be based on economic grounds.

Kyrgyz Republic provides associations of rural consumers of water supply and wastewater services with the right to participation in the discussions about loans needed to solve water supply problems. Besides, the Law on Drinking Water[51] gives these associations the right to establish tariffs: "residential tariffs for drinking water … will be established … for rural customers - by rural public associations of drinking water consumers established by the population". Such broad rights of local associations are justifiable in Kyrgyz Republic where local communities are also largely responsible for the operation and maintenance of the local water infrastructure.

[51]. Kyrgyz Law dated September 29, 2000 # 81 "On Amending the Law 'On Potable Water.'"

Box 3.3. Rural Water Associations in Kyrgyz Republic

Currently, Kyrgyz Republic is implementing two water supply projects: rehabilitation of the water and wastewater sector in Osh, Dzalal-Abad, Batken, and Chuysk regions, financed by the Asian Bank of Reconstruction and Development ($ 36 million) and the rehabilitation of water supply systems in Naryn, Issyk Kul, and Talaysk regions, financed by the World Bank ($ 15 million). The projects envisage the implementation of a new system for the operation and management of the water infrastructures. Communities will decide on their own what level of services they need, what loans are needed to fund rehabilitation projects, and how these loans will be repaid. Communities will also bear full responsibility for operating the water supply system. This new management system is based on the traditional self-management patterns of Kyrgyz people. Some 200 rural public associations of drinking water users were already established and registered with the Ministry of Justice. These associations include all members of mutual aid groups in villages, and are led by elected committees. The associations consider loan applications submitted by mutual aid groups, assist in solving internal problems in the groups, and ensure full repayment of loans. For this purpose, associations establish loan-and-savings funds and reserve funds.[52]

Source: National experts

Another area where public scrutiny might be effective for the overall process of reform of water supply and wastewater services is the involvement of the private sector in the operation and management of water utilities. A decade of experience of Central and Eastern European (CEE) countries in reforming the water sector shows that private sector involvement should be a process open to the public. Although it is the official bodies, which represent the public in the negotiation process, the public should be informed about such plans, including possible changes that they may bring about. Political changes and public support often play an important role in projects involving the private sector, and require continuous involvement of key stakeholders.

Box 3.4. Hungarian Experience of Private Sector Involvement and Public Participation

In 1993, the city of Szeged initiated a management contract with Generale des Eaux (Vivendi). This arrangement was criticised on several grounds: it was not open to tender, the management fee was criticised as being excessive, the operator did not operate with a Board of Directors, and the pricing structure allowed open-ended guarantees to the company wherein losses were covered by the municipality. The contract has been under an almost permanent process of renegotiation; a settlement was finally reached in 2001. Under the new arrangements, the municipality will have a majority on the Board. The cost of the revenue guarantees will be triggered not by customer charges but by reducing development and reconstruction work. The price increase was moderate; the good reputation of the company in the city has been attested to by opinion surveys at the local level.

[52]. PADCO Policy Report # 2 "History of Tariff Reform in Ukraine," August 2001.

Debrecen city, after having taken proposals from two major multinational companies, decided to withdraw from the concession negotiations and transform the municipal company into an autonomous joint stock company with municipal shareholding. The result has been 150% more investment than originally planned under the concession (because of a 60% lower unit cost) and far lower prices than had been proposed. Far fewer job losses were necessary. Price increases have been moderate; the profit levels have risen to between 8% and 9% annually.

Budapest organised a competitive tender resulting in a joint venture with Suez-Lyonnaise in 1997. The company was chosen because of the highest 'entry price' into the market, and not the lowest service price for consumers. If the private company paid a high price, they received a high fee causing high losses for the city. In 1999, the municipal representatives rejected the business plan, which envisaged the continuation of such losses, and the management fee was negotiated down, which will necessitate job losses. From the point of view of the municipality and the workforce, the Budapest deal seems to be the least satisfactory. The consumer dimension was missing from the agreement, which was scarcely debated in the city council at the time, commercial confidentiality being invoked. This, eventually, backfired both on consumers and workers, and on the city, because of the losses it has had to guarantee.

Despite long negotiations influenced by political changes, a greater degree of public scrutiny of the Szeged and Debrecen agreements led eventually to better outcomes than the more secretive Budapest case. There is a need for consumer organisations with the expertise to scrutinise agreements when still at the draft stage.

Source: Consumers International

The above analysis demonstrates the effectiveness of public consultations and hearings. Therefore, this mechanism of public participation should be stipulated by law, in the spirit of the Aarhus Convention. It should be noted, however, that public consultations and hearings require time, financial and human resources, and therefore should be organised at strategically important stages of reform. In particular, public consultations and hearings should be recommended on the following issues:

- Development of national legislation and strategic programmes.
- Preparation and implementation of community development plans, including water utility reform.
- Discussions about appropriate levels of services and tariffs.
- Private sector involvement.

3.3.3 Public Participation in Administrative Mechanisms and Official Procedures

Administrative mechanisms include variety of task forces, working groups, commissions and councils. They could be ad-hoc or permanent, often operating on a voluntary basis. It should be noted that public participation in administrative mechanism largely depends on the will of the government authorities to involve the public in the official procedures, their awareness of

the benefits of such participation as well as the proved ability of the public representatives to provide useful and constructive inputs.

From the point of view of consumer protection during water supply and sanitation reforms two types of such mechanisms present particular importance. The first type includes *special administrative bodies*, which were established in order to facilitate the reform in this sector. The UK provides the unique experience of countrywide network of consumer councils organised by the national regulator of the sector Office of Water (OfWat). While this approach is difficult to replicate in the absence of a central regulator for the sector, some of the elements could be useful for the EECCA.

Box 3.5. Consumer Councils Under the UK Office of Water

The Office of Water (OfWat) is the economic regulator of the water supply and sewerage sector in England and Wales responsible for setting price limits for companies. OfWat has established regional Customer Service Committees and a National Council with the main goal "to be an effective and influential voice of water and sewerage customers in England and Wales in promoting their interests in respect of price, service and value for money".

10 regional Customer Service Committees investigate and resolve complaints from customers, represent their interests to OfWat and to water companies, and monitor customer service. The chairman of each regional Committee is appointed by OfWat, and each council has 12 voluntary staff members. The chairmen of regional Committees comprise the National Council. OfWat consults National and Regional councils on all major decisions, including service standards, price limits and tariffs.

Source: www.ofwat.gov.uk

Recently, environmental NGOs in EECCA became actively involved in various official procedures, such as expert examination of projects and programmes. For instance, in early 2002, the Moldavian Ministry of Environment and Territorial Development invited three NGOs to carry out a public expert examination of the Moldavian National Programme for Developing Water and Wastewater Systems until the year of 2006. The results of this expertise were reflected in the final document adopted by government in May 2002.

Many environmental NGOs actively participate in Environmental Impact Assessment (EIA) and its EECCA version "environmental expertise". Such procedures, required by national legislation and regularly used by IFIs, give NGOs an opportunity to participate in the early phases of project design and to assess such issues as, for instance, sanitary zones of water supply sources, associated with transferring large volumes of water resources.

Some NGOs organise public audits of drinking water quality and of other parameters of water utilities' performance. Although such public monitoring is rather expensive and not always affordable to the public, given the lack of official public information, even limited public monitoring backed by data from independent sources makes discussion of water sector problems more constructive.

The second type of administrative mechanisms includes bodies *for general interaction between the public and the public authorities*, such as public councils, committees for human rights and others. These general bodies could take issues related to urban water supply and sanitation to their agendas due to the high social importance of this sector for the population. For example, the Commission for human rights under the governor of Rostov region of the Russian Federation raised the issues of drinking water supply as a realisation of the right to basic human needs, which allowed attracting broad support to the sector reform from the regional government and the public[53].

The efficiency and effectiveness of specialised or general administrative consultative mechanisms depend on many factors. Their performance can be upgraded when the goals and operational procedures are clearly stated and described. The structure of such mechanisms, like that of the regulatory bodies, should reflect the structure of the sector: if tariff setting is done on the local level, public councils or other administrative consultative bodies on this issue should be also established at the local level. The performance of such bodies depends on the competence and motivation of their members, and often requires special expertise from the representatives of the general public.

There are certain dangers associated with close participation of the public representatives in official mechanisms and procedures. When public representatives do not have sufficient professional expertise to assess potential negative impact of technical decisions endorsed by the group, their names can be used to cover up such anti-consumer decisions. Besides, in some cases administrative bodies have access to some confidential information, and public representatives participating in these bodies lose their right to disseminate such information, even when it represents particular interest for the public. When public representatives are placed inside the "decision-making" process they are not in a position to criticise official decisions, and thus cannot perform their key function of safeguarding the rights of the citizens. Therefore, representatives of civil society may prefer to maintain their position "outside" of the regulatory

[53]. P. Kryuchkova et al., "Open partnership: mechanisms for interaction in the housing and communal sectors", M. IIF "Spros-ConfOP", 2002.

bodies and to ensure a clear delineation between the consultative function and official decision-making.

3.4 Access to Justice and Conflict Resolution

This section will identify main issues related to access to justice, including contractual relations between the consumers and water utilities, and existing mechanisms of conflict resolution such as administrative and court procures, and softer forms of resolving and preventing conflicts.

3.4.1 Unclear Contractual Relations

Typically, the final consumer (a resident of an apartment block) does not have direct contractual relations with the water utility; there is a mediator between the consumer and the producer of water supply and sanitation services - a service organisation.

Usually, housing maintenance organisations act as service organisations. They are not responsible for the service quality or for payment collection. However, the service organisations could play an important role in the maintenance of water systems in the apartment blocks, and in the interaction with individual households and apartment owners. Incentives for improving the performance of intermediaries should be strengthened.

Some countries support the development of associations of house residents and condominiums. The establishment of condominiums is considered one of most important approaches in reforming the housing and communal services sector in Armenia, Russia, and Ukraine. This approach could ensure better protection of housing owners' rights, as well as the possibility of influencing the cost and the quality of services. It would also facilitate attempts to raise additional funds for maintenance and repairs of the housing block.

Another approach is the introduction of direct contractual relations between water utilities and individual households. A number of EECCA countries have legislated rules and Model Contracts for the provision of communal resources. Concepts and programmes of reforming the housing and communal services sector adopted in EECCA countries envisage mandatory introduction of contractual relations at all stages of service production and delivery, including the house owner, service provider, and service consumer. In Ukraine, for example, the Law on Drinking Water and Drinking Water Supply provides for the conclusion of agreements directly between the water service provider and the consumer. A Model Contract was proposed in the Rules of Provision of Water and Heat Supply and Wastewater Disposal Services to Population. The

introduction of contracts is slow, as neither distributors nor consumers are interested: their introduction puts a significant technical workload on the providers, whereas the consumers cannot make amendments in the model contract.

Analysis of model contracts in Azerbaijan and Russia shows they often favour the rights of the provider[54]:

- Lack of proper description of the quality parameters of services.
- Lack of sanctions against unsatisfactory performance by the provider.
- Unclear consumption norms and tariff setting procedure, especially for metered and un-metered consumers, or underestimated consumption standards in the case of a two-tier tariff for legal entities.
- Unclear distribution of responsibilities for the installation of meters, or an explicit requirement that the consumer should bear the costs.

At the same time, development of contractual relations is one of the main approaches to ensure effective protection of consumer rights. Therefore, efforts to clarify main service parameters, as well as rights and obligations of various parties involved in urban water services need to be strengthened. This can be achieved through further elaboration of national and local legislation and through the further development of model contracts.

3.4.2 Conflict Resolution

Deterioration of the quality of water supply and wastewater services causes a growing number of complaints. Settlement of conflicts related to water supply and wastewater services is very complicated. The procedure begins with filing a complaint about the quality of provided services with the service organisation. The service provider has to take measures or to reject the complaint on specific grounds. Outstanding complaints can be settled through administrative or judicial procedure. Administrative procedures allow the consumer to complain to a higher authority, i.e. the local executive body or its housing and communal department. In Kazakhstan, Russia, and Ukraine, for instance, regional and city administrations have departments for consumer protection and complaints.

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[54]. P. Kryuchkova, "*Essential Characteristics of Transactions with End Consumers in Resource-Supplying Industries within the Housing and Communal Services Sector"*, Moscow, 1998. And Survey carried out by the Association of Free Consumers of Azerbaijan, in the articles by K.Ali "*Gas, water and electricity sold to us with the violation of our rights"*.

Administrative procedures are often lengthy and exhausting, but the number of complaints is increasing.

The next step formally open to consumers is the court. But only a limited number of consumers use this mechanism for the protection of their rights. Unsatisfactory on undelivered water supply and sanitation services present a serious nuisance for households, but the price of these services, and therefore the potential financial compensation are very low, while the costs related to court procedures are high. Besides, unclear contractual relations further complicate effective court settlement. Therefore, court procedures for defending consumer rights are not economically justifiable or practical for individual households.

At the same time, increasing prices for the services provided by water utilities will strengthen the incentives for consumers to appeal in courts. NGOs, primarily consumer associations, can provide significant assistance in terms of legal advice and protection of consumer rights. Collective complaints and class actions can become a possible form of court defence. Consumer associations and municipal departments for consumer protection in a number of Russian regions (Ekaterinburg, Penza, Tver and others[55]) have already gained experience with this type of claims.

In EECCA countries softer forms of conflict resolution should be introduced in order to reduce tension in the relations between the service provider and the consumer. Such softer forms may include conflict settlement in independent bodies outside courts (e.g. special administrative procedures and panels, ombudsman, consumer councils, special bodies attached to the regulatory authority, etc.), which allow for rapid and effective solutions. For example, a special administrative commission was established in Khabarovsky kray (Russian Federation). The commission deals with conflicts between consumers and providers of electric energy. The commission makes its decisions within a few days and a maximum of one week (compared to several months or years required for court cases). Its decisions are obligatory for the service provider, while the consumer maintains the right to complain in court. According to consumer rights exerts in Khabarovsky kray, the establishment of the commission led to a significant reduction in energy related court cases and consumer complaints[56].

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[55]. P. Kryuchkova et at., “Protection of consumer rights in housing and communal sector”, M., IIF “Spros-KonfOP”, 2003.

[56]. P. Kryuchkova et at., “Protection of consumer rights in housing and communal sector”, M., IIF “Spros-KonfOP”, 2003.

Local authorities and water utilities can play an important role in preventing and resolving conflicts at early stages. To this end, service providers should introduce transparent systems of dealing with complaints, and should inform the consumers about such systems. A requirement of such systems may be included in the contracts between water utilities and local authorities. Another effective tool for resolving conflicts and strengthening responsibility of the service provider is automatic re-calculation of charges in case of the failure of the utility to provide services of proper quality. A requirement of automatic re-calculation is already in force in a number of Russian regions for the full package of housing and communal services, and is included in the draft Rules for the provision of housing and communal services, to be approved by the Government of the Russian Federation.

3.5 Recommendations

Main Consumer Rights and Framework for Public Participation

EECCA governments need to ensure the protection of consumer rights and promote public participation in the reform of the urban water sector in order to achieve *two main objectives*: to ensure public and political support for the proposed reform (including price increase), and to protect broad public interests from arbitrary decisions and abuse of monopoly powers of water utilities, in the framework of a broader regulatory reform.

Main rights of the consumers as identified by the UN Guidelines for Consumer Protection include the protection of consumers from hazards to their health and safety; the promotion and protection of the economic interests of consumers; access of consumers to adequate information; consumer education; availability of effective consumer redress; freedom to form consumer groups and the opportunity of such organisations to present their views in decision-making processes; the promotion of sustainable consumption patterns.

These main consumer rights should be introduced in the urban water sector reform in EECCA countries; the main approaches for the implementation of these rights include:

- Integration of appropriate norms in the national and local legal laws and secondary legal acts.
- Ensuring a transparent and predictable state policy in urban water sector reform.
- Promotion of good practices among service providers.
- Information and education of consumers.

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to justice in Environmental Matters provides a *framework for public participation* in environmental decision-making. This framework can be used to promote public participation in the urban water sector reforms, including the following main forms: information; public participation in decision making processes; and access to justice.

Civil society organisations, including public associations, non-governmental organisations, associations of housing owners and consumer groups can play an active role in protecting consumer rights and facilitating public participation in the sector reform. Their activities should be acknowledged and supported.

Information for Decision-makers and for Consumers

As households are becoming the major customers of water utilities. The owners and operators of water supply and wastewater services (i.e., utilities and municipalities) should pay greater attention to the opinions and preferences of these consumers. *Consumer surveys and public polls* could be used regularly at the local level, in addition to or as a part of the methodologies for assessing water affordability presented earlier.

National and local governments need to improve information provision to consumers, including provision of full, regular and reliable information about sector reforms and specific situations in particular locations. The *minimum set of information for consumers* should include the information on:

- Service standards, consumption norms, allowed interruptions of service provision.
- Levels of and rules for establishing prices and tariffs, including advanced information about changes in prices and tariffs.
- Rights and obligations of consumers, service providers and regulatory authorities.
- Procedures and forms of conflict resolution.
- Performance of service providers.
- Available privileges and subsidies, procedures for and documents required for receiving them.
- Current situation and challenges in the sector and reform measures.

Information should be provided in a *form accessible for consumers*, including:

- Contracts with the service providers containing detailed description of all the conditions.

- Annual reports on the performance of water utilities based on performance indicators.
- Detailed and informative bills for water supply and wastewater services.
- Mass media, including official publications and announcements.
- Visual and hand-out information.
- Public relations units at water utilities.

It should be stressed, that all information, which does not present commercial secrets, should be made available for independent experts. Besides, *independent information* about the performance of the sector can play an important role during the reform process. The right of the public for carrying out a public audit or expertise of water utilities should be officially, possibly legally established.

Both national and local governments and utilities could play an effective role in increasing public awareness about the value of water as a public good and a limited natural resource. *Public awareness campaigns and educational programmes* can be an effective supplement to the economic incentives for responsible water use.

Public Participation

Public participation in the decision-making in the water supply and sanitation sector should be developed on the basis of the following *principles*:

- *Clear focus*: Consultative processes of bodies established to promote public participation in urban water sector should have a clearly formulated mandate and tasks, and focus on specific issues.
- *Representation and participation*: Interests of all main stakeholders should be represented in consultative bodies and processes, including water utilities, public authorities and consumer groups. Such processes or bodies should be open for new members, and will benefit from participants with relevant expertise.
- *Transparency*: Information about the consultative processes and bodies should be open, including information about the consultative mechanism and its operational procedures, reached agreements and areas of disagreement. Such openness increases the responsibility of the stakeholders, and provides support to the implementation of the reached agreements.

Public consultations and hearings are among the most effective mechanisms of public participation in urban water sector reform. This mechanism of public participation should be stipulated by law, in the spirit of the Aarhus Convention. It should be noted, however, that public consultations and hearings require time,

financial and human resources, and therefore should be organised at strategically important stages of reform. In particular, public consultations and hearings should be recommended on the following issues:

- Development of national legislation and strategic programmes.
- Preparation and implementation of community development plans, including water utility reform.
- Discussions about appropriate levels of services and tariffs.
- Private sector involvement.

Administrative mechanisms, such as existing or specially established working groups, commissions and councils could provide another form for public participation in urban water sector reforms. They include special administrative bodies focusing on the issues of water supply and sanitation (e.g. consumer councils under the national sector regulation in the UK, expert examination of projects and programmes including EIA) and general bodies (e.g. committees for human rights in some Russian provinces). Public participation in specialised and general administrative mechanisms promotes information exchange, improves the quality of decision making, and attracts broader political and social support to the sector reforms.

Access to Justice and Conflict Resolution

Unclear contractual relations between households and water utilities hinder effective prevention and resolution of conflicts between them. Typically, the final consumer does not have *direct contractual relations* with the water utility. Some EECCA countries make efforts to tackle this problem by introducing direct contractual relations between water utilities and individual households. This requires the legal clarification of service parameters, rights and obligations of the parties as well as elaboration of model contracts based on national legislation.

In some cases (e.g., apartment blocks) a direct contractual relationship with customers may not be effective. Some countries therefore support the development of *associations of house residents and condominiums*. The establishment of condominiums is considered as one of the most important approaches in reforming the housing and communal services sector in Armenia, Russia, and Ukraine. Such efforts may promote collective contracts and responsibility and should be promoted.

Service organisations, usually *housing maintenance companies*, act as mediators between the consumer and the producer of water supply and sanitation services. They can play an important role in the maintenance of the infrastructure and in

direct relations with individual apartment owners and tenants, but they are not responsible for the quality of the services or for the payment collection. Incentives to the service organisations for improving their performance need to be strengthened.

Settlement of conflicts related to water supply and wastewater services is very complicated in EECCA countries. The process begins with administrative procedures, which are often lengthy and exhausting. The next step formally open to consumers is the court. But only a limited number of consumers use this mechanism for the protection of their rights, as the court system is slow and cumbersome; *defending the rights of water services in courts* is not economically justifiable for individual households. Collective or class actions may become a useful form for protecting consumer rights in courts in the future.

Softer forms of conflict resolution should be introduced in EECCA countries in order to reduce tension in the relations between the service provider and the consumer. Such softer forms may include conflict settlement in independent bodies outside courts (e.g. special administrative procedures and panels, ombudsman, consumer councils, special bodies attached to the regulatory authority, etc.), which allow for rapid and effective solutions.

Local authorities and water utilities can play an important role in preventing and resolving conflicts at early stages. To this end, service providers should introduce *transparent systems of dealing with complaints,* and should inform the consumers about such systems. A requirement of such systems may be included in the contracts between water utilities and local authorities. Another effective tool for resolving conflicts and strengthening responsibility of the service provider is *automatic re-calculation of charges* in case of failure of the utility to provide services of proper quality.

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ANNEX 1. NATIONAL INDICATORS OF WATER AND WASTEWATER SERVICE QUALITY

Country	*Service*	*Quality indicators*
Russia	Water	• Uninterrupted, round-the-clock water service all-the-year-round. • Water composition and properties must meet standards set by the State Sanitary and Epidemiological Committee and local governments.
	Wastewater	• Uninterrupted, round-the-clock wastewater service all-the-year-round.
Ukraine	Water	• Uninterrupted, round-the-clock water service all-the-year-round, or scheduled water supply all-the-year-round at a flow rate of at least 0.2 litres per second for customers connected to a centralised hot water system. • Uninterrupted, round-the-clock water service all-the-year-round, or scheduled water supply all-the-year-round at a flow rate of at least 0.3 litres per second for consumers equipped with local water heating units, provided water pressure is maintained equal to or above 0.6 kg-force per square cm (60 kPa). • Water composition and properties must meet standards set by the State Standards Committee and Health Ministry (or negotiated standards allowing for local conditions).
	Wastewater	• Uninterrupted, round-the-clock wastewater service all-the-year-round.
Moldova	Water	• Uninterrupted, round-the-clock water service during the period specified by an agreement.
	Wastewater	• Uninterrupted, round-the-clock wastewater service during the period specified by an agreement.
Kyrgyz Rep.	Water	• Uninterrupted, round-the-clock water service all-the-year-round. • Estimated water pressure (head) in customer connection points. • Composition and property of water in test samples must meet “Potable Water” standards and comply with sanitary rules and standards.
	Wastewater	• Uninterrupted, round-the-clock wastewater service all-the-year-round.

Note: Characteristics, regime, and level of services may be adjusted by the executive authorities and their local bodies jointly with local governments with due regard to the actual capacity, structure and depreciation of the relevant capital assets serving communal needs, as well as for climate and other local conditions in a specific locality.

ANNEX 2. MACROECONOMIC INDICATORS FOR EECCA COUNTRIES, 2001

#	Indicators	Unit	Azerbaijan	Armenia	Belarus	Georgia	Kazakhstan	Kyrgyz Republic	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
1	GDP per capita	*$ per capita*	715	557	1217	682	1527	300	348	2083,1	177	1132	450	766
2	Population:													
	- Urban	*,000*	4130,1	1998,5	7013,6	2573,8	8283,2	1706,7	1933,9	105600	1660,1	2385	9286,9	33537,2
	- Rural	*,000*	4011,3	1002,3	2976,8	1878,3	6558,7	3200,9	2330,4	39200	4589,9	2915	15828,9	15754
	- Total	*,000*	8141,4	3000,8	9990,4	4452,1	14841,9	4907,6	4264,3	144800	6250	5300	25115,8	49251,2
3	Average household size													
	- Cities	*persons*	4,22	4,04	2,7	3,8	3,1	3,5	2,38	3,2			4,6	2,68
	- Rural areas	*persons*	4,81	4,18	2,4	3,88	4,4	4,9	2,77	2,9			6,1	2,86
	- Nationwide	*persons*	4,47	4,08	2,6	3,84	3,6	4,3	2,61	3,1	7,5		5,5	2,73
4	Local currency		Manat	Dram	Belorussian ruble	Lari	Tenge	Som	Leu	Russian ruble	Somoni	Manat	Sum	Hryvna
5	Average weighted rate of exchange to USD	*local currency/$*	4656,4	555,07	1390	2,073	146,74	48,4384	12,9	30,14	2,41	5200	567,4	5,37

ANNEX 3. WATER AND WASTEWATER SECTOR PERFORMANCE IN EECCA COUNTRIES, 2001

#	Indicator	Unit	Azerbaijan	Armenia[1], YerevanVodokanal	Armenia[1], ArmVodokanal	Belarus	Georgia	Kazakhstan	Kyrgyz Republic	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
1	Provision of residential customers with centralised water supply services														
	- Cities	%	21,0	100,0	93-95	98,6	95,0	92,0	95,7	97/60/30[2]	86,0		80,8	97,3	78,3
	- Rural areas	%		x	50,0	70,4	20,0	21,0	76,3	7,0	39,0		28,5	83,3	17,9
2	Provision of residential customers with centralised wastewater services														
	- Cities	%	7,3	87,0	60-80	97,7	75,0	71,0	29,1	75/50/20[2]	84,0		61,8	92,9	76,7
	- Rural areas	%		x	5-10	62,0	10,0	5,0		0,0	30,0		2,0	58,6	12,9
3	Average weighted tariff for water supply services (including VAT)														
	- Residential customers	$/м^3$	0,048	0,083	0,074	0,030	0,053	0,139	0,045	0,18[5]	0,108	0,007	0,000	0,029	0,095
	-Budgetary organisations	$/м^3$	0,131	0,083	0,081	0,087[3]	0,183	0,139	0,056		0,108	0,009		0,089	0,194
	- Other customers	$/м^3$	0,307	0,083	0,096	0,412[3]	0,203	0,139	0,059	0,79[5]	0,219	0,015		0,122	0,257

#	Indicator	Unit	Azerbaijan	Armenia[1], YerevanVodokanal	Armenia[1], ArmVodokanal	Belarus	Georgia	Kazakhstan	Kyrgyz Republic	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
4	Average weighted tariff for wastewater services (including VAT)														
	- Residential customers	*$/м*[3]	0,033	0,018	0,019	0,023	0,014	0,149	0,034		0,084	0,005	0,000	0,023	0,063
	-Budgetary organisations	*$/м*[3]	0,063	0,018	0,020	0,042[3]	0,043	0,149	0,040		0,084	0,011		0,058	0,130
	- Other customers	*$/м*[3]	0,078	0,018	0,030	0,138[3]	0,072	0,149	0,047		0,175	0,014		0,073	0,160
5	Rate of VAT on services to residential customers	*%*	20	20	20	20	20	16	20	20	20	20	x	0	20
6	Level of cross-subsidising for water supply services (max/min)	*Times*	6,4	1	1,3	13,9	3,8	1	1,32	4,62	2,02	2,23	x	4,18	2,71
7	Level of cross-subsidising for wastewater services (max/min)	*Times*	2,3	1	1,6	5,9	5,0	1	1,38	11,76	2,07	2,72	x	3,13	2,53
8	Water supply service consumption standard for residential customers														
	- m^3/person/month		6	7,5	6	6,6	12	5	5,9	4,8[4]	7	7,5	7,5	8,2	8,1
	- litres/person/day		200	250	200	185	410			160[4]	241	250	250	270	270
9	Wastewater service consumption standard for residential customers														

#	Indicator	Unit	Azerbaijan	Armenia[1], YerevanVodokanal	Armenia[1], ArmVodokanal	Belarus	Georgia	Kazakhstan	Kyrgyz Republic	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
	- m^3/person/month		4,5	7,5	6	5,6	12	5	3	4,8[4]	7	3	7,5	10,64	7,95
	- litres/person/day		150	250	200	160	410			160[4]	241	100	250	350	265
10	Costs of water/wastewater services as percentage of total household charges for all communal services	%	14,1	12,4		17,6	14,2	14	11,8	4	15,4			4,95	11,42
11	Percentage of households using apartment cold water meters	%		3	4	10	0	No data	up to 0,1%	65-70	Close to 0%	0	0	4	20
12	Percentage of the population enjoying uninterrupted water supply services	%	58	25	10	92	5	100	29,7	25	88,1	20	59,8	75-92 (seasonal fluctuation)	43,7
13	Average daily duration of water supply for scheduled water supply services (hours)	*Hour*	6	8	3-6		14-16	24		6-8	23,41	8	6-8	4	
14	Percentage of supplied water complying with quality standards	%	10	100	95	73	85	9 to 50	86,8	80	50	No data.	67	90-95	50-80
15	Average weighted rate of water/wastewater cost recovery by residential	%		20-22	20-22	37-42	14	100	50	40-45	45		0	100	76,9

#	Indicator	Unit	Azerbaijan	Armenia[1], YerevanVodokanal	Armenia[1], ArmVodokanal	Belarus	Georgia	Kazakhstan	Kyrgyz Republic	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
	customers														
16	Plans to attain the 100% rate of cost recovery by residential customers	*Year*		2005 – 82-86%		2005	2005	Attained in 1997	2005 – 75%		2004			Attained in 2000	
17	Level of residential customers' compliance (% of the charges collected)														
	- All housing and communal services	*%*				90		63,3	75-85		85			93,2	84
	- Water and wastewater services	*%*	60	35	40-44	90				68	83			87,2	79

[1] - YerevanVodokanal serves the city of Yerevan whereas ArmVodokanal serves the rest of Armenia.
[2] - Cities with population over 50,000 / cities with population 25,000 to 50,000 / cities with population below 25,000.
[3] - Data on Belorussian legal entities are quoted for the city of Vitebsk.
[4] - Average weighted consumption level allowing for the fact that 30% of Moldavian households are charged based on the consumption standard (9 m^3/person/month) while 70% are charged based on meter readings (the real consumption averages 3 m3/person/month).
[5] - Average weighted tariff for water and wastewater services combined.

ANNEX 4. SOCIAL PROTECTION OF COMMUNAL SERVICES CONSUMERS IN EECCA COUNTRIES, 2001

#	Indicators	Unit	Azerbaijan	Armenia	Belarus	Georgia	Kazakhstan	Kyrgyz Rep.	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
1	The poor as % of the total population													
	- The poor	%	49,0	50,9	28,9	51,1	28,4	47,6		29,1				27,2
	- The very poor	%	17,0	16,0	x		11,3	13,5		5,2				14,9
2	Major indicators on the Housing Subsidy Programme													
	- Percentage of enrolled households	%			0,01		7,50	9,00		9,10				13,03
	- Average monthly subsidy per household	$			3,50		5,59	3,82		5,35				6,46
	- Subsidy as % of charges for rent and communal services	%			25,30		6-8	42,30		31,10				54,20
	- Maximum household expenditures for services as % of household total income	%			15		30	25		22				15/20
3	Privileges for housing and communal services													
	- Form of granting (cash/non-cash)			non-cash	non-cash	non-cash	cash	non-cash	cash	non-cash	non-cash		non-cash	non-cash
	- Privileged population	People		25 689	1 590 000			63 243	260 000	47 800 000			882 000	6 900 000

#	Indicators	Unit	Azerbaijan	Armenia	Belarus	Georgia	Kazakhstan	Kyrgyz Rep.	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
	- Privileged population as % of the total population	*%*		0,86	15,92			1,29	6,00	33,01			3,51	14,00
	- Average value of privileges	*$/person*			10,20			8,39		11,67			70% to 75% of charges	4,7

ANNEX 5. HOUSEHOLD INCOME AND EXPENDITURES, 2001

#	Indicators	Unit	Azerbaijan	Armenia	Belarus	Georgia	Kazakhstan	Kyrgyz Rep.	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
1	Average monthly cash income													
	- Cities	*$/person*	29,17	19,66	47,81	19,60	80,43	14,73	7,18	72,03				28,57
	- Rural areas	*$/person*	33,63	21,34	40,71	13,97	30,37	9,42	20,30	38,52				23,25
	- Country as a whole	*$/person*	31,23	20,21	45,69	16,96	55,40	11,28	11,94	63,05			21,13	26,92
2	Average total monthly income													
	- Cities	*$/person*	31,74	23,37	53,44	21,87	100,53	17,88	16,30	79,36				33,68
	- Rural areas	*$/person*	34,84	36,23	51,46	22,09	36,45	14,30	22,85	51,82				35,13
	- Country as a whole	*$/person*	33,18	27,58	53,12	21,95	64,82	15,54	18,68	71,98				34,13
3	Average monthly cash expenditures													
	- Cities	*$/person*	33,78	19,91	50,74	33,13	52,18	13,57	8,40	62,72				36,83
	- Rural areas	*$/person*	34,53	17,99	31,21	22,20	20,00	8,48	20,28	33,16				26,35
	- Country as a whole	*$/person*	34,13	14,05	46,23	28,01	35,94	10,26	12,71	54,81			20,33	33,60
4	Average total monthly expenditures													
	- Cities	*$/person*	34,26	21,89	56,70	35,40	54,52	17,67	17,28	66,83				42,57
	- Rural areas	*$/person*	34,70	20,78	40,08	30,32	23,00	14,33	20,80	44,65				38,83
	- Country as a whole	*$/person*	34,47	21,53	53,73	33,01	40,26	15,49	19,29	60,90				41,41
5	Structure of household expenditures (% of total expenditures)													
	- Non-food	*%*	6,0	14,6	19,0	9,9	22,0	22,2	28,1	31,1			33,4	11,6
	- Meals (including eating out)	*%*	68,0	64,6	56,1	48,7	48,0	53,4	48,2	52,7			48,9	62,6
	- Tobacco and alcoholic drinks	*%*	3,0	6,1	4,6	2,6	8,0	1,5	2,6	3,2			2,4	2,8
	- Services	*%*	23,0	14,7	20,3	34,9	22,0	10,8	21,1	13,4			15,3	16,7
	Including rent and communal services	*%*	9,0	5,8	4,8	10,8	11,6	3,6	10,2	4,7				9,0
	Including water/wastewater services	*%*	3,0	0,2	1,4	2,0	1,8	0,9	0,7	1,1				1,4

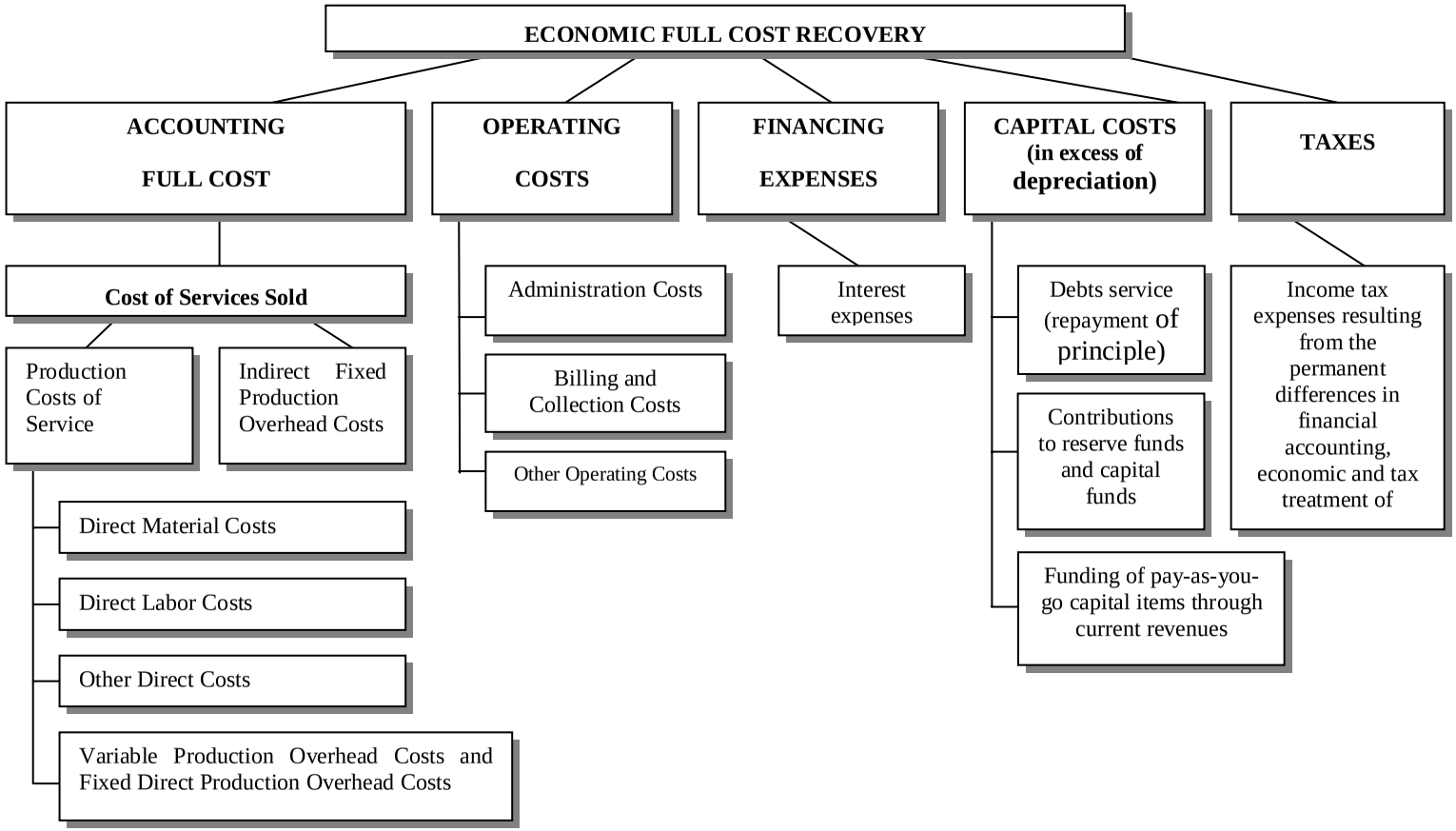
ANNEX 6. CONTRACTUAL RELATIONSHIP

Country	Form of Contractual Relationship		
	Model agreement	**"Producer - Customer" (direct) contract**	**"Distributor - Customer" contract**
Azerbaijan	No	Private houses, apartments in apartment houses	
Armenia	Dated July 2002	Private houses	Condominiums
Belarus	Yes	Private houses	Apartments in apartment houses, construction co-operatives, condominiums
Georgia	Only for enterprises, effective October 21, 1998	All customers	
Kazakhstan	Effective January 12, 1996	All customers	
Kyrgyz Republic	# 338 dated July 24, 1996	Private houses, construction co-operatives, condominiums	Apartments in apartment houses
Moldova	No	All customers except the city of Kishinev	City of Kishinev
Russia	Old agreement dated 25 Sept, 1985 which doesn't comply with the Civil Code	Private houses, apartments in apartment houses	Apartments in apartment houses, construction co-operatives, condominiums
Tajikistan	Rules dated 1983	Private houses, apartments in apartment houses	
Turkmenistan			
Uzbekistan	# 648 dated 20 Jan, 1999	All customers	
Ukraine	# 1497 dated 30 Dec 1997	Private houses and apartments (partially)	Apartments in apartment houses, construction co-operatives, condominiums

ANNEX 7. MEASURES AGAINST NON-PAYERS

#		Azerbaijan	Armenia	Belarus	Georgia	Kazakhstan	Kyrgyz Rep.	Moldova	Russia	Tajikistan	Turkmenistan	Uzbekistan	Ukraine
1	Formal (written) warning	Yes	No	Yes	No	Yes	Yes	Yes		Yes		Yes	Yes
2	Disconnection of residential customers from services	No	No	Yes	No	Yes	Yes	Yes	No	No		Yes	Yes
	The same with respect to needy customers	No	No	No	No	Yes		Yes	No	No		Yes	Yes
3	Penalties and fines	Yes	No	Yes	No	Yes	Yes	No	Yes	No		Yes	No
4	Collection of debts judicially	No	Yes	Yes	No	Yes		No	Yes	No			Yes
	- Deduction of debts from salary	No			No		Yes		Yes			Yes	
	- Lien on debtors' property	No			No		No		No			Yes	
5	Eviction	No	No	No	No	No	Yes	No	Yes	No		No	No
6	Other administrative and organisational measures	Yes	Yes	No	No	Yes			No	Yes		No	Yes

ANNEX 8. ECONOMIC FULL COST RECOVERY



Source: A. Babak, "Tariff Rules: Cost Identification, Cost Allocation and Rate Structuring: Possibilities for Ukraine" / First Expert Workshop on Tariff reform in the Municipal Water Supply. Paris, February 2002.

ANNEX 9. SOCIAL PROTECTION IN URBAN WATER SECTOR IN OECD COUNTRIES

Henri Smets

INTRODUCTION

GENERAL CONSIDERATIONS

As water is essential for life, it should be available to all. Historically this was the case when people were getting their water from public fountains or wells built by local authorities. Today, the price paid for water is increasing and is not insignificant any more in many OECD countries.

The old policy of providing cheap drinking water through generous public subsidies of investment in water supply and sanitation is being replaced progressively by a new policy of full cost pricing, which is more efficient from economic and resource perspectives and helps to reduce public deficits. However, this charge implies that poor users will have to spend a greater part of their income on acquiring water. *This analysis reviews various methods used in OECD countries to enable poor users to pay for water supply and sanitation. It deals only with regions that are already equipped with water supply networks*[57].

Water pricing is a very emotional issue, although water expenditure is generally a small part of total household expenditure. In France, a water allocation of 40 litres per person per day, which is needed for basic uses, would cost as much as one cigarette per day. This is quite small for most, but there are still people in French streets who collect cigarette butts. Thus, special measures are needed to facilitate water supply of a very small part of the population, and new legislative measures are envisaged to guarantee access to water for all.

By and large, OECD countries have not adopted any quantified minimum allocation of water, to which every person would be entitled. There, are

[57]. OECD countries with limited access to water supply include Korea (92%), Mexico (86%) and Turkey (83%).

however, exceptions. Flanders has set a quota of 40 litres per day of free water for the poor and many countries have set an upper limit for a lifeline tariff at 5 m^3 per month. In Ireland, the right to free water for domestic use is unlimited.

PRICING OF DRINKING WATER

OECD

At the last Ministerial meeting, OECD Environment Ministers adopted an *Environmental Strategy for the First Decade of the 21st Century*, which included the goal:

> "to ensure access ***for all*** to safe drinking water and adequate sanitation".

This "national action" should be implemented before 2010. In addition, OECD countries were asked to "assess and address the social implications of environmental policies, in particular the removal of environmentally harmful subsidies".

Concerning water pricing, the basic principle adopted by the OECD in a 1989 Council Recommendation is the so-called "user-pays principle", according to which the user of drinking water should pay the full cost of water supply and sanitation, which implies as a minimum that there should be no subsidy for drinking water.[58]

When this principle was adopted, exceptions were foreseen in favour of certain groups of consumers. However it took a number of years for the OECD to take

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58. Council recommendation on water resource management policies: integration, demand management, and ground water protection, 31 March 1989 [C(89)12/FINAL]. The user-pays principle is used in OECD work since 1985 (see "Pricing of water services, OECD, 1987, report of Prof. Paul Herrington). The full text of the Recommendation is given in the book: "Water Resource Management", OECD, Paris, 1989. See also F. Juhacz: "Guiding principles for sustainable development in the developing countries" in E. Domment ed., *Fair Principles for Sustainable Development*, E. Elgar,1994 ; Henri Smets: "Le principe utilisateur-payeur pour la gestion durable des ressources naturelles", *Anuario de direito do ambiente*, Lisboa, 1998; Compte-rendu des Thémiales de Riom, sept. 2000; *Lusiada*, 2001 (pp.465-502) ; *Revue Juridique d'Auvergne*, 2002 and *Outil économique dans le droit international de l'environnement*, La documentation française, Paris, 2002.

up a clear position on social exceptions to the user-pays principle in the field of water supply.

When reviewing environmental performances of member and non-member countries, OECD has examined the issue of water pricing and has recommended greater implementation of the user-pays principle.

Concerning the Russian Federation, the OECD recommended in 1998:

- To gradually increase water pricing to cover real cost, taking account of ***affordability constraints***.
- To expand the use of metering.

In 2000, the Almaty ministerial consultation adopted the conclusion[59] that a reform of the existing water system in the NIS would imply the implementation of the following principles:

- Establishing the water sector on a financially sustainable basis, while addressing the needs of ***poor and vulnerable households.***
- Increases in user charges must take full account of what people can ***afford.***
- Existing subsidy schemes should be replaced by targeted support for ***poor and vulnerable*** groups.

After reviewing the environmental performance of the Czech Republic (1999), OECD recommended "to continue measures to establish a water pricing structure which encourages water conservation and takes account of ***social factors***". Concerning Hungary (2000), OECD recommended "to review and increase water prices, with due regard to cost-effectiveness, financing and ***social*** objectives". In the cases of Mexico (1998) and Turkey (1999), the OECD recommended "ensuring that prices fully reflect environmental costs (e.g. for water and energy), while giving attention to the ***special needs of the poor***".

At the end of the first cycle of environmental performance reviews, the OECD has concluded that a major policy challenge was:

"ensuring access to water services by the ***poor***".

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[59]. *Water Management and Investment in the New Independent States*, Proceedings of a Consultation between Economic/Finance and Environment Ministers, Almaty, Oct.2000, OECD, 2001.

European Union

Within the EU, the user-pays principle was introduced under the name "full cost recovery principle" in the Water Framework Directive (2000) and exceptions were foreseen for a number of reasons, including social ones. At the same time, the EU has adopted a derogation, which allows Ireland not to charge drinking water supplied to households. This derogation could also apply to other EU States, many of which are far from charging the full cost of drinking water.

United Nations

According to the Dublin Statement and Report of the Conference on Water and the Environment (1992):

*"It is vital to recognise first the basic principle of **all** human beings to have access to clean water and sanitation at an affordable price".*

Similar views are expressed in Agenda 21 adopted in 1992.

Subsequently there was a strong effort at the UN level and especially at the World Bank level to promote implementation of the user-pays principle in the drinking water field and to remove related subsidies.

In 1998, the UN Commission for Sustainable Development discussed the user-pays principle and adopted a decision according to which:

"cost recovery should be gradually phased in by water utilities or the public authorities, taking into account the specific conditions of each country. Transparent subsidies for specific groups, particularly people living in poverty, are required in some countries".

This carefully phrased decision was justified by the observation that: "A move towards full cost recovery by guaranteeing the commercial and managerial autonomy of water services is one essential element of financial sustainability". But at the same time many countries were concerned with the social consequences of applying the user-pays principle.

Other Fora

At the Second World Water Forum (The Hague, March 2000), the Ministerial Conference agreed "to move towards pricing water services to reflect the cost of their provision". They also agreed that:

"This approach should take account of the need for equity and the basic needs of the poor and the vulnerable".

In this case again, the message is "to move towards", not to apply the full cost pricing policy, and to take account of the affordability of water for the poor.

FULL COST RECOVERY WITH A SOCIAL EXCEPTION

As the generally agreed pricing policy in the drinking water sector is now based on the user-pays principle, it will be necessary to remove remaining subsidies for operation and maintenance cost and subsequently subsidies for new investment (replacement of existing networks and setting up of new networks or wastewater treatment plants). The resulting increase in water price will be compounded with a price increase caused by better wastewater treatment, and also possibly by higher water taxes to take into account resource depletion and environmental damage (full internalisation). Thus, in a number of OECD countries, drinking water prices are bound to double and even to quadruple. Water, which used to be an insignificant part of household expenditure, could become "unaffordable" to poor people.

As stated by Ronnie Kasrils, Water and Forestry Minister of South Africa: "The problem is that when we try to implement cost recovery, many of the poor cannot pay. It is our moral duty to make a basic amount of safe water available to all South Africans or at least to those who cannot afford pay for it". What is true in large sections of South Africa is also true in some areas of OECD and for a small part of its population.

In all OECD countries, people who are most concerned with water price increases are those for which water represents a high fraction of their income. For instance, in the UK, the poorer 5 % of the population have to spend more than 5.6% of their income for water and the poorer 1% more than 10.5 % of their income while an average person only spends 1.3% of income for water. If there were a doubling of water price, it would mean that an average person would have to reduce consumption by 1.3%, while a very poor person would have to reduce its consumption level by 10.5%. Clearly the social consequences are very different.

The number of poor people in OECD countries, i.e. with income below 50% of the median income, varies between a few percent of the population to more than

20%.[60.] Among these people the poorer group can be assumed to require some form of financial assistance to pay for water if it were priced at its real cost. This group may amount to between one third to one sixth of the total number of poor people depending on the price of water and the level of real income. In Western Europe (Germany, Netherlands and Sweden), the number of continuously poor people is below 2% but in UK it is as high as 6%.

This paper examines how to alleviate the effect of water price increases on population groups, which cannot afford to pay for the water they consume. This approach is justified by the fact that water is an essential good and that most governments seek to ensure that water is available to all, either as a policy or because they consider that there exist a right to water for all.[61]

After an overview of national experiences, the paper examines measures applicable to all people and measures targeted to poor people aimed to make water more affordable.

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60. Turkey 16%; United States 17% (of which 4.6% of continuously poor people). The exception is Mexico with 22% of people with low income. Turkey has 2.4% of its population with income below 1 $ per day (PPA) and Mexico 12.4% (UNDP, *Human Development Report*, 2001).

61. More details on the question covered can be found in the following papers by the author:

   a) "Implementing the right to drinking water in OECD countries", paper presented at the OECD Seminar on the Social and Environmental Interface, Proceedings published by the OECD, ENV/EPOC/GEP(99)13, OECD, 1999. Available at http://www.olis.oecd.org/olis/1999doc.nsf/LinkTo/env-epoc-gep(99)13 (also available in Russian).
   b) " Mise en oeuvre du droit à l'eau potable dans les pays de l'OCDE", rapport présenté au Séminaire de l'OCDE sur l'interface social / environnement, OCDE, Paris, 1999 (disponible sur le site www.cartel.oieau.fr/a_propos/fpropos0201.htm).
   c) "Le droit à l'eau potable", *L'eau au XXIe siècle*, Futuribles, Paris (2000).
   d) "L'eau et les pauvres", *Environmental Policy and Law*, Vol.30, p.125 (June 2000) (also available in Russian).
   e) "Observations on the right to water as a human right", available on site www.unhchr.ch/Huridocda/Huridoca.nsf/TestFrame/cc44adbac8d8c3c2c125694c00520ba6?Opendocument
   f) "The right to water as a human right", *Environmental Policy and Law*, Vol.30, N°5, pp.248-250 (2000).
   g) "Le droit à l'eau", AESN, Paris, 2002 (to be published).

NATIONAL EXPERIENCES ON SOCIAL PROTECTION OF WATER CONSUMERS IN OECD COUNTRIES

OVERVIEW OF NATIONAL EXPERIENCES

In OECD countries, public authorities are required by law to ensure the provision of water and sanitation, either alone or in partnership with the private sector. Accordingly, they have set up public or semi-public utilities to perform this function as a natural monopoly extending over the territory assigned to them by public authorities (one or more municipalities). In most OECD countries, water infrastructure is still owned by public authorities and the private sector only intervenes as a manager of a public service (utility). In all OECD countries, water companies have to report to public authorities and are held accountable for the proper functioning of the water services. Being a natural monopoly, they are not allowed to fix the price without consulting higher authorities in line with laws, regulations and contracts.

Water quality standards set by national law, EU law, or WHO are to be met and obligations of universal service are to be carried out (continuity of service, universality, equality, adaptability and social cohesion). Because drinking water services are "services of general economic interest" under EU law, they do not fall under usual trade laws and they may be subsidised [62].

Because water prices are generally low, people are induced to put high pressure on water resources. However, losses in economic efficiency and resource efficiency from low pricing are quite small in the area of drinking water, because the price elasticity and the relative size of proportional costs in water supply and sanitation are small. In most countries in transition, water use has not diminished drastically during the 90's in spite of drastic price increases. For instance, in Czech Republic, household water use decreased from 137 litres per person per day to 109 litres between 1993 and 1999, but at the same time, food consumption, in particular beef, animal fats and dairy products, also decreased. Similar patterns were observed in East Berlin where the decrease in water consumption could be related to the rising cost of metered water as well as the decline in the local economy.

Water service is paid by the taxpayers through direct subsidies to public utilities or unpaid public services (e.g. public wastewater treatment) and by the users through water charges. The water service, which collects subsidies and water charges, aims to equilibrate its income and expenditure. When financing of the

62. This issue may have evolved, however, because of the recent Doha agreement.

water service is problematic, water networks are poorly maintained, water leaks increase, water quality is low and water supply is not guaranteed. This has taken place in a number of less developed Member countries where water leaks have exceeded 30%. But the situation is improving. Remaining problems are mostly related to pollution.

In many OECD countries, water is metered for the purpose of billing and this has also a positive effect on limiting water consumption (e.g. a reduction of 10%), even if people generally have no idea of the price of the water they use or of the level of their consumption. However, there are a number of countries or cities without meters or with few meters (e.g. United Kingdom, Canada, New Zealand, Denmark, Iceland, Ireland and Norway) or where there are few or no individual meters in most apartment buildings (e.g. France). In such cases, there is little direct incentive to reduce water consumption. Such lack of metering may however be justified on economic ground, at least for existing housing, because the decrease in water cost induced by meters does not always pay for the cost of metering. Thus Ireland does not install meters in new buildings and meters are introduced very slowly in England. On the contrary, individual meters are now mandatory in new French buildings.

In general, water bills are made up of two elements: a fixed fee plus a volumetric fee which increases with water consumption or with some proxies such as house size, house value or number of persons in the household. The fixed fee which usually varies with piping or meter size (i.e. potential demand) may constitute a financial obstacle for poor users. The unit price of water may be constant, decreasing or increasing with consumption (progressive pricing). It may take into account socio-economic characteristics of the users (so-called social tariff).

All OECD countries seek to ensure that every person has access to water, i.e. does not spent too much of its income for domestic water (affordability). As water price varies very much within countries (from one to seven in France) and between countries (from one to ten), the issue of affordability has very different impacts in OECD countries. Similarly the rate of poverty varies very much within countries (e.g. from one to seven within France). Some groups of poor people are very much affected, such as gypsies in Central Europe or non-European immigrant workers in Western Europe.

The following methods are used to provide water at an affordable price:

- Ensuring that water prices are kept “low”, i.e. below the full price.
- Providing general income support to poor people.

- Providing a discount to reduce the price paid for water by some categories of users.
- Providing special assistance to people who cannot pay their water bill.
- Providing a certain quantity of water at no cost.

The first measure is very costly because it may affect a large part of the total water expenditure of the country. The second one is also very costly because it seeks to alleviate poverty in general and not simply water poverty. In comparison, the other three measures are very inexpensive.

These measures are financed by the taxpayer (general income support, housing allowance, subsidies to the water sector) or by other users (cross subsidies). They contribute to ensuring that water does not become a significant part of household expenditure. Some of these measures require individual metering.

These measures may entail significant administrative costs if it is necessary to identify beneficiaries (poor or vulnerable people) for the purpose of providing them with some sort of water assistance. The identification mechanism needs to be simple, because otherwise, more money would be spent identifying poor people than paying their water bills. Fortunately, social services in many countries maintain lists of people receiving social benefits because of their income or family status. Use of such lists should enable one to avoid "leakage", i.e. to provide help to people who are able to pay their water bills.

GENERAL MEASURES

In order to improve access to drinking water for all domestic users, governments of OECD countries have implemented a number of general measures, which are outlined below. Some of these measures can be very costly, and most of this cost is in favour of people who could easily pay for their water. Implementation of the user-pays principle is progressing. Some governments who were in favour of a no-subsidy approach are likely to provide subsidies when and if they decide to improve wastewater treatment, because they want to avoid large changes in water prices. This has taken place recently in Scotland.

GOOD WATER GOVERNANCE

The first method to reduce water price is generally to ensure good management of water services: avoiding illegal payments, reducing leakage, removing illegal water connections and undue privileges, ensuring efficient collection of water bills, avoiding unwarranted side payments or undue profits, etc. This is helped

by transparent operation, public participation and independent control of utilities.

GENERAL TAXES ON WATER

The easiest method to reduce water price for the user consists in reducing various taxes, such as sales tax applied to water, value added tax, waste water tax, water extraction tax, tax for the use of public domain (for the water network) and taxes unrelated to water supply (to finance garbage collection, dam construction, canals, and other public expenditures). The justification for this action is that water is an essential good for which the lowest level of VAT should apply. This method is used in most OECD countries.

SUBSIDIES FOR WATER SERVICES

The most common method used today to reduce water price consists of governments funding investment in the domestic water sector without asking municipalities or water utilities to reimburse this expenditure or providing municipalities or utilities with grants to finance water supply and sanitation investment. Similar results can be obtained through low interest credits.

In most OECD countries, there are still significant subsidies for waste water treatment, but much less for investment in water supply. For instance, in Canada, there is C$1.2 billion subsidy for a total cost of C$4.5 billion for water supply and sanitation. In Italy, over 70% of investment is paid by the public budget and in Spain over 50%.

Operation and maintenance cost can also be subsidised by governments or local municipalities. Such subsidies are slowly disappearing in OECD countries that have adopted laws to prohibit municipalities from providing subsidies to the water sector (example: in France, water accounts are separate from other public accounts and in UK, water is entirely privatised). Hence, users in France finance 90% of the drinking water costs which are currently incurred (i.e. ignoring the fact that past investments were very much subsidised). In contrast, in Mexico City, local governments subsidise over 88% of the current cost of water.[63]

63. "Despite increases in water prices, few OECD countries have achieved full cost recovery of the operating and maintenance costs of water services provision, not to mention any additional environmental or social externalities", see OECD: Household Water Consumption, ENV/EPOC/WPNEP(2001)15.

Reducing the price of water for all means that more affluent households will receive a higher benefit without having any social or economic need. Such disadvantage is less severe when most beneficiaries are poor (backward communities).

Removal of all subsidies would lead to large price increases (see Table 1, which provides price increases as if full cost pricing were always used). Those most affected will be the poor people (in relative terms) but those who would lose more in absolute terms are the rich people. This can induce politicians to maintain large subsidies for water (a small item of consumption with a high political profile).

CROSS SUBSIDY BETWEEN USER GROUPS (HOUSEHOLDS, INDUSTRY AND AGRICULTURE)

In many countries, small users pay a lower price for water than large users (progressive tariff, see below), and households pay a lower price than many commercial or industrial users. This can be done either explicitly or even implicitly through charging a higher unit price for large users. For instance, industrial users in Czech Republic, Korea and Mexico pay a higher price for water. If prices are too high, industrialists will seek to pump their own water and avoid financing household water. Cross subsidisation often works in favour of agriculture which does not pay its fair share of pollution control cost or flow control cost and causes an increase in the cost of treatment of water for human consumption (removal of pesticides or nitrates).

Although cross subsidies are used in nearly all OECD countries, they are avoided in a few countries (e.g. Australia). They are not favoured by the OECD and other international bodies because they provide wrong economic signals (industry spends too much to reduce its use of water and agriculture consumes too much water because it is very cheap). However, this criticism is only valid if the initial level of price is optimal. As this is rarely the case, increasing water prices for industry may bring water prices closer to the optimal level and thus be economically efficient. On the reverse, low water pricing for irrigation leads to distortion in water use and should be avoided because it is an environmentally damaging subsidy. According to the EU Water Framework Directive, cross subsidies should be progressively removed, but many exceptions are foreseen.

CROSS SUBSIDY BETWEEN RURAL AREAS AND URBAN AREA; GEOGRAPHIC SOLIDARITY

People living in areas that require expensive investment for water supply are often aided by other users. In France, geographic solidarity with rural areas is

organised through a fund (150 MFF per year) financed by a tax on horse gambling and a tax on water consumption. In Hungary, the national budget helps communities in which water is particularly costly to reduce geographic differences in price.

In a few French departments and in privatised water companies in UK, water is sold at a uniform price. Similar measures are foreseen in Wallonia, and have already been applied when enlarging water networks in poor suburbs (new entrants pay the same price as old time users).

The European Union Water Framework Directive foresees an exception to full cost recovery in favour of less favoured areas.

LIFELINE TARIFF FOR ALL

Very small users (i.e. connected through a small diameter pipe) may be charged a very low price for the first block of consumption. Thus these users enjoy water at a price subsidised by those who consume more water in the first block. This method usually requires a meter to measure the consumption above the first block. An alternative when there is no metering consists in charging a small flat fee for those who have few tabs or a small connecting pipe and a much higher fee for those who presumably have a higher water consumption.

Observations on water use in households have shown that water consumption is roughly proportional to the number of people in the household (no economy of scale), to the area of apartment (income effect) and to the level of sanitary equipment (income effect). Thus, water consumption in Hungary varies only by a factor of 2.2 between the first decile of income and the last decile (ratio of income: 5.4).

Lifeline tariffs usually apply to a small fraction of the average household consumption; they often imply a price reduction of 50% from the average price of water. For instance, they apply to a first block of 15 m^3 per person per year when the average consumption is 45 m^3, or to 30 m^3 per household when the average household consumption is 120 m^3 par year.

Lifeline tariffs may cause an increase in pricing on remaining water as large as 33% depending on the amount of assistance provided. It may induce large users to reduce their consumption or to seek water from other sources. Water companies do not like this approach because users believe that the water company has increased water prices when in fact it has spread the same cost over a smaller amount of water consumption.

PROGRESSIVE PRICING; INCREASING BLOCK TARIFF FOR ALL

If water is metered and if the unit price of water increases with consumption (different blocks of consumption pay different unit prices), small users pay much less per m^3 than large users. This is equivalent to a cross subsidy between small and large users. It can have very strong incentive effects on large users who reduce their consumption in view of the high marginal price paid for water. For instance, they will recover rain water and pump water from their wells in order to water their garden.

Progressive pricing is used in Brussels, Wallonia, countries in South Europe, Japan, Korea, Mexico, etc. It provides cheap water to small users and discourages large users. The ratio of large and small unit water prices may be as high as a factor 10. However, the highest unit price should remain below long-term marginal cost including resource and environmental damage costs in order for the tariff to be close to optimal. As water is often subsidised, this condition can be met.

REDUCED OR NO FIXED FEE FOR ALL

Large fixed fees are an obstacle for the poor to access water. Annual fixed fees and access charges (connection fees, advance payments, etc) can be reduced or even abolished and replaced by an increase in volumetric charges. This method reduces the price paid by small users. Hungary, Czech Republic, Berlin and Marseilles have no fixed fee. In France, the new water bill aims to reduce fixed fees to the minimum.

FREE WATER FOR ALL

In Ireland water is delivered freely to households. Surprisingly, water consumption is quite reasonable. In a number of OECD countries, water is not metered and as a result its marginal price is nil.

In a few regions such as Flanders, a first block of water may be free in so far as supply is concerned but there is a separate wastewater tax. A limited free water supply has the effect of increasing the volumetric charge thus reducing water consumption.

Free water is traditionally available at public fountains. When water is not available because of disruption in supply, public authorities generally provide free water on a temporary basis (trucks, bottles, etc).

SPECIFIC MEASURES

The measures described below are targeted to poor people in general (income support) or to people for whom water is not considered to be affordable. They come in addition to the measures outlined above and, except for income support, which covers many items of expenditure, they are quite small from a financial standpoint. Targeted measures for water apply to few people in few instances and for small quantities. They could become more frequent if water prices increase, especially in countries that would implement the user-pays principle.

The identification of beneficiaries of income support or targeted measures is not an easy task and raises a number of political and equity issues. It is usually done by public authorities, which seek equal treatment across the country. Water services are rarely faced with the issue of determining whether a person is poor enough to receive some form of support.

IDENTIFICATION OF BENEFICIARIES

Identification of beneficiaries of specific social measures is difficult and costly unless it has been done previously as part of the operation of other systems of social assistance. When there is no consensus on the identification of beneficiaries, serious difficulties can be encountered as those excluded may also have significant needs (i.e. similar to those of beneficiaries). This is particularly true when there is a very large proportion of poor people.

Governments of OECD countries have identified certain groups of people who should benefit from specific social measures in general[64] or be able to have access to water or to pay for water more easily.

The broad classes of potential beneficiaries of targeted water measures are:

- People with low income (France); people identified by local social services as needing social assistance (Belgium); jobless people; indigent, etc.
- Handicapped people (France, Flanders).
- Pensioners (Australia, Barcelona, Flanders, UK).
- Large families (Luxembourg, Barcelona, UK).

64. For example, people with less than 425 € of net income per month (the minimum salary is 1080 ¤ per month and the average water expenditure is 14 € per person per month).

- People requiring a large amount of water for their medical treatment (UK).
- Indigenous people (Mexico).
- Charitable institutions (Portugal).

The level at which water is not affordable is not yet defined. As will be described elsewhere, identified beneficiaries of water aid are usually people who have to pay more than 3 - 5% of their income for water consumption. In general, water benefits are limited by an income test. Potential beneficiaries have to apply to water companies to obtain a water benefit, but they must produce evidence from public authorities to prove that they are eligible. Water companies prefer leaving selection of beneficiaries to public authorities. In some countries, such as Spain (Barcelona), identified beneficiaries lose their benefits if they display large water consumption (in terms of cubic meters per person).

As the number of potential beneficiaries rarely exceeds 21% of the population in OECD countries, the amount of support provided to poor people rarely exceeds one third of the value of average water consumption. The total cost of targeted support is always smaller than 7% of the price of water. Such limited financial support should have no significant effect on pricing, water efficiency or resource efficiency.

Poor people may have access to general income support or a special tariff, or they may be eligible for non-tariff measures or for the technical, social and legal measures described below.

GENERAL INCOME SUPPORT

In all OECD countries, social services provide income support to the poor either as a right (e.g. France) or as discretionary assistance. There are many forms of income support, such as living allowance, guaranteed minimum income, supplementary pension benefits, housing allowance, etc. This direct cash support can be quite significant in the net revenue of the poor (up to 100%) and should enable the beneficiaries to pay their water bills, provided that they have not spend it all on other goods. Countries with a significant programme of income support and social assistance may not need targeted support specifically for water, because social assistance would step in if there were a risk of disconnection of water supply.

As water expenditure is a relatively small fraction (generally less than 5%) of total housing expenditures, which also include heating, electricity and gas, income support measures are not adjusted with the price of water. There are,

however, a few exceptions: in Finland, the calculation of housing allowance takes into account the actual price of providing a certain amount of water.

In France, housing support is high enough to pay most of the rent, but may be earmarked for this purpose. Hence, separate water, electricity and telephone bills may remain unpaid. Each supplying company will seek reimbursement separately, and is now subject to various constraints for social reasons. Reduced price is already available for the telephone of the poor. Electricity may not be cut off, and delays are available for the payment of telephone and water bills. Special social tariffs for electricity will soon be available, and a special social tariff for water is under discussion in the Parliament. The total number of beneficiaries of these measures is at most 4% of the population, and the actual cost implication is likely to be less than 1% of turn over.

In countries such as Hungary, the housing allowance is calculated on the basis of the difference between actual expenditure for housing, heating, energy and water and a fraction of income (e.g. 35%). In this case, an increase in water price will not affect the poor, because it will be covered by a larger allowance. A similar system is used implicitly in other countries where the social services assess individual needs and provide appropriate benefits on the basis of actual bills rather than on assumed needs.

WATER SUPPORT AS AN IDENTIFIED PART OF GENERAL INCOME SUPPORT

In principle, social services could be asked to set aside a portion of income support money for paying water bills and transfer it directly to the water service (this is done in France for the housing allowance, which may be transferred directly to the owner as part of the lease). This approach was examined during the discussion of the French water bill but was not adopted. It is not used in any OECD country except as a water voucher (see below).

The difficulty with this approach is that it requires that social services make a number of bills to different providers (lessor, housing manager, water company, electrical company, telephone company, local authorities, etc.), and that some bills could be quite small. The merit would be that the money set aside for water and other services would not be used for other purposes and that water, electricity and telephone supply would thus be guaranteed.

Another possibility would be a water allowance similar and additional to the housing allowance, which would be paid to the owner or the water company if there is a contract between the user and the supplier. This allowance would help poor people to pay their water and could be financed by a levy on water supply

on the model of the electricity solidarity fund financed by electricity companies (to finance geographic solidarity and social cohesion).

TARIFF BASED MEASURES

SOCIAL TARIFF

A social tariff is a reduced tariff for water available to well-defined categories of beneficiaries, which are usually identified for other social purposes (housing allowance, minimum income, medical cover, etc). It is often equivalent to a lifeline tariff or a reduced fixed fee only available to the poor. Identification of beneficiaries is usually done by social services and financing is provided by water companies (except in Australia). It may amount to a decrease in the access or connection charge, annual fee or unit volumetric fee. It may consist in providing a certain quantity of water at reduced price either as a lump sum or as a lifeline tariff. When there is no meter, the aid may consist in providing a fixed rebate on the water bill.

The cost of a social tariff for water is very small. According to M. J. Dausset, a Nobel Prize Winner and Chairman of the French Academy of Water, it would amount to asking each family "to give a pail of water per day" in favour of poor families. Such a programme would provide 120 litres of water to 7.7% of users, i.e. 40 litres per day per person in a three-person household. Social tariffs cost relatively little to water companies and influence little water prices. For instance, if there are 3% of beneficiaries who are unable to pay the price of water, if the allocation is 15 m^3 of free water and if the average consumption is 45 m^3 per year, the average price of water should be increased by one percent because of the social tariff. Other calculations are given in Table 2.

Social tariffs are used in Australia, Belgium, Luxembourg, Mexico, Portugal, Spain, etc. In Flanders, the poor receive 15 m^3 of free water because they do not pay the wastewater treatment tax. In Mexico, indigenous people receive free water as a means of social support.

According to OECD[65], pricing systems can be structured to achieve the two objectives of resource and cost efficiency as well as providing every person with access to clean water. To make this possible, it is necessary for the beneficiaries of special programmes to pay the same unit price as the other people for their marginal consumption. Thus they should receive aid as a lump

65. *Water Management. Performance and Challenges in OECD Countries*, OECD, 1998 (p.32).

sum, for instance as a low connecting fee or annual fee or as a sum representing a fixed water quantity below the actual quantity used. This approach can be applied even if there are no meters by reducing the flat fee for the poor.

Social tariffs are a "right" open to a class of users. As such, they can reach a large number of beneficiaries who would otherwise object to making complex and humiliating submissions to public authorities. Rights to water, electricity, gas and telephone are included as such in the French law to combat poverty. The right to electricity is currently being discussed within EU as part of the general obligation of universal service for privatised national electricity companies. Targeting and administrative simplicity are important considerations in designing social tariffs.

SOCIAL CONSIDERATIONS IN PROGRESSIVE PRICING

When there is progressive pricing, the size of the blocks of water consumption can be increased in line with the number of people in the household in order to avoid too large a financial burden on large families (minority of the beneficiaries). This is done in Luxembourg, Barcelona and in Flanders (15 m^3 per person per year) but requires that the user apply to the water company to have a special tariff. Alternatively, large families may receive a water voucher (see below).

TARGETED REDUCTION OF WATER TAXES

In order to reduce the price of water for poor people, certain state or local taxes paid by the user such as the wastewater tax or the property tax can be waived or reduced if the user has a low income (Flanders, Wallonia).

REDUCED TARIFF FOR STANDPIPES AND FOUNTAINS

When access to standpipes or fountains is not free, poor families could be allowed to buy coins at reduced price to operate standpipes. Such subsidies have little effect on water use, because carrying water is a burdensome task.

NON-TARIFF BASED FINANCIAL MEASURES

WATER VOUCHERS/WATER ALLOCATION

Water vouchers are provided by social services to enable poor users to obtain a rebate on their water bills. The voucher can be provided to the user and used when he pays his water bill either to the municipality or to the water company. It can be financed by the municipality (water allocation) or by the utility (water

voucher). It may be tradable or not. Water vouchers can be managed entirely by the municipality. Use of vouchers can be restricted to people who pay their part of their water bills (conditional aid).

Vouchers are used in a number of OECD countries to provide at a lower price such goods as coal (Ireland), energy (US, Belgium, France), meals, food, milk (Hungary), etc. They aim to satisfy a basic need for which there is a collective responsibility (aid in kind). They have not been used so far for water in OECD countries but experience exists in Chile. Water vouchers are similar to social tariffs except that they are lump sums not connected to the level of consumption.

ARREARS FORGIVENESS; SOLIDARITY FUNDS

In a number of countries (Belgium, France, UK), poor people have the opportunity to ask social service or solidarity funds created by water companies to pay part or all of their water bills in case of need and also to obtain easy terms for payment of arrears. These mechanisms are able to fund all valid requests because there are relatively few requests (less than 1% of users). In Belgium they cost 0.6 BF per water user per year and even less in France. Financing generally comes from water companies, but there can be exceptions in countries that do not agree with cross-subsidies. The disadvantage to this type of system is that in general, it provides support to a very small number of persons among the poor population.

The administrative cost par beneficiary of this system may be high if social services have to open a new file for each request and to assess the relative merits of all files. Lack of administrative personnel is such that the system often acts as a break in the disbursement of aid.

Many such systems are ineffective in the sense that the number of people who apply to the fund is well below those who would be entitled to apply (i.e. many poor people refuse to go through humiliating and cumbersome procedures). The experience with these systems is generally that they provide aid to between one tenth and one quarter of eligible beneficiaries. The merit is that they cost little, give the assurance that money is well spent (i.e. help is provided only to those who are in deep trouble rather than to those who could possibly pay if they did not buy unnecessary goods).

Another form of solidarity is organised de facto between users sharing a collective meter in a condominium. When water expenditure is part of overall housing expenses, all tenants have to pay collectively their water. If a tenant

does not pay his share of housing expenses, other tenants will have to pay for him and are not allowed to disconnect him from water or electricity.

TECHNICAL, SOCIAL AND LEGAL MEASURES MOSTLY AIMED AT THE POOR

Issues arising in connection with water poverty are not only a matter of receiving allowances and paying bills. The human dimension may not be neglected because water is a crucial element for living in harmony with society.

REPAIR OF WATER LEAKS

As owners of low cost housing are often reluctant to repair water leaks occurring in the sanitary equipment they provide with the apartment, tenants are led to pay higher water bills. In France, a new law was adopted which requires the owner to repair water leaks before renting and during the rental period if there is faulty equipment (this does not apply to usual maintenance) and which also prohibits renting of apartments without adequate sanitary installations (sinks, toilet, shower, etc).

FREQUENT BILLING

Frequent billing with payment in the neighbourhood makes it easier for poor people to pay their water bills, especially if they do not have a bank account or savings. Many difficulties of non-payment can be avoided when poor people are not asked to provide large sums of money at once. Thus, water companies should spread the payment of large sums and increase billing frequency when asked to do so. Because of transaction costs, the frequency of billing cannot be too high (once every month may be justified in large families but not for a single person).

DIRECT CONTACTS WITH USERS HAVING FINANCIAL DIFFICULTIES

Much improved collection of water bills is obtained when water companies assist users to solve their problems of delayed payment or of large water consumption. In many cases, such users do not even understand the mail they receive or do not understand what they should do when they cannot pay. Water companies can often persuade users to pay part of their bills or to request public assistance and thus avoid disconnection.

MINIMUM FLOW

When water supply may not be disconnected, the alternative for the water company is to provide only a minimum flow of water to satisfy basic needs. This method is enforced in Sweden and Switzerland by throttling the flow or providing flow for restricted periods of time.

EMERGENCY STANDPIPES

When users are left without water because of disconnection, municipal authorities often ask water companies to install a water standpipe so as to allow limited access to water. Standpipes are also installed near "camping" grounds or parking areas for nomads, gypsies, etc. in order to provide them with minimal services (including shower and toilets).

METERS WITH PREPAYMENT

Water meters with prepayment provide water only after it has been paid. These devices avoid overuse of water and legal proceedings. They have been banned in the UK because they are equivalent to automatic disconnection, an approach that is not in line with British law and is likely to be banned under the new French bill.

NO DISCONNECTION POLICY

Policies concerning disconnection of users who have not paid their water bills vary greatly from one country to the other. In principle, water bills will eventually be paid except if the user has a property, salary or pension. However, the procedure can be costly, lengthy and not always successful. In some countries, water can be disconnected one month after issuing a proper warning if the water has remained unpaid in the meantime.

In other countries, disconnection is illegal, never done or not enforced (Austria, Denmark, Flanders, Luxembourg, Ireland, Norway, Northern Ireland, Scotland, many Mexican States). In a number of countries water disconnection is not permitted unless the water company can prove that it has no other means to obtain payment of its bill (Spain, Germany). In England and Wales, water disconnection was prohibited by law in 1999 after wide use in the early 90's. In France, the new water bill would prohibit disconnections in line with a number of court decisions.

In some cases, disconnection can only be done after social services have been informed by water companies and have had time to react (UK) or is not allowed without a court order (Brussels). In the meantime, the judge makes sure that local social services intervene to avoid or delay a disconnection. Disconnection is rarely granted if the user is poor (social necessity, dignity).

Statistically there are very few disconnections in OECD countries. The rate of disconnection of poor people in countries where it is difficult to enforce disconnection is very small (less than one per thousand of the turn over). Thus, enforcing disconnection or not has little economic effect on water companies in most OECD countries.

Lack of disconnection does not mean forgiveness of arrears. Water users who fail to pay on time will often bear high costs because of procedural expenses associated with late payment of water bills. Only very poor people are likely to escape such penalties and they shall be taken care of by social services.

EVALUATION

Although water is a relatively small item of private consumption, its price has traditionally been set below full cost. This was achieved by general measures, which are available to all and by specific measures, which are targeted to the poor or other vulnerable groups.

General measures consist mostly of subsidies provided by public authorities to finance investment of water utilities and various tax reductions. These measures are expensive for the budget and can encourage water wastage. Water use may decrease by 35% when water is priced at its true cost, but the corresponding financial savings are much smaller because fixed costs are large and remain nearly the same.

Most OECD countries are still subsidising water utilities; only a minority of them have already achieved full cost recovery of the operation and maintenance cost alone. The general trend is to reduce subsidies and accordingly to increase water prices. The heavy dependence of utilities on subsidies, which arises when water is not fully paid by users, may be a source of concern for utilities, which have autonomous budgets. Privatisation is sometimes seen as a mechanism to raise capital outside the rules of public finance, especially when local communities are not able to borrow on the market.

Progressive tariffs for water are used in a large number of OECD countries mainly to protect water resources. These tariffs require metering but no information on the user. They also help to provide water at a low price to small

users. As water use increases with income level, progressive tariffs are particularly favourable to low-income households. A particular case of progressive tariff is the lifeline tariff designed to provide a small amount of very cheap water.

In most OECD countries, higher water prices are likely to cause problems to the poor. However, this has not yet emerged as a very significant issue because social policies carried by most OECD countries provide income support to the poor, and water is only a small part of household expenditure and of income support. Cash support received in most OECD countries should enable most of the poor to pay for their water. Alternatively, social assistance may be given as part of housing allowances and can be directly transferred to the water utility.

In addition, specific measures are used in most OECD countries to help the poor to pay for their water. The cost of these measures is considerably smaller than the cost of income support and housing allowances. Table 3 gives a comparison of main targeted measures. Providing water at no cost is an option that was used for a long time, but it raises difficult problems, because many people cannot accept that such a valuable good could be handled as a free good. Thus water is generally paid for, but not always on the basis of metered consumption.

Social tariffs, i.e. a lower price for water distributed to identified poor households, have little effect on the income of utilities because they affect only a small percentage of water consumption. They can be implemented easily when the beneficiaries are identified by public authorities. Social tariffs can apply to fixed charge and/or to volumetric consumption. A reduction in fixed charge is a very simple measure to implement and removes a financial obstacle, which is significant for the poor. This reduction can also take the form of a water voucher paid by public authorities or a water allowance paid by utilities. When information to define categories of potential beneficiaries on the basis of income is not available, the type of housing and appliances used can be used to identify beneficiaries. Progressive tariffs, which are favourable to small users, can be adapted to take account of family size and even income level, but these refinements are rarely used. A typical example is Flanders, where 15 cubic meters of water is now given free to every poor person. Cross subsidies between domestic users and industrial users are not significant in most OECD countries and are considered negatively.

When users do not pay their water bills because they are poor, they can usually obtain financial assistance from social services, which will help them to pay their arrears. In a few countries, a solidarity fund has been set up for this purpose and is funded by a charge on all users or by the budget. These

mechanisms help to avoid disconnection of those who fail to pay their water. Consequently, disconnections of poor users are becoming less frequent.

Installing flow limiters, meters with prepayment and other devices can also help to promote the idea that water is a common good that needs to be saved and paid. However, there are more appropriate ways to pass on this message, such as awareness-raising, education, TV campaigns, frequent billings and direct contact with users. This would require improving human relations with users rather than relying on automatic billing followed, as need be, by disconnection.

The analysis of recent OECD practices shows that Member countries are attempting to ensure that water be available to all, seeking to reduce the number of disconnections and enforcing simple tariffs to make water affordable to the poor. Most of them have recognised that there is a fundamental right to water.

CONCLUSION

OECD countries have provided water for a long time at a price below cost, and many of them continue to do so. There is nevertheless a trend towards greater implementation of the user-pays principle in order to reduce the burden on public finance and to eliminate subsidies for a basic good, which most people can easily pay.

Because water prices are increasing, OECD countries have taken measures to reduce the social effects of such increases and to make drinking water more affordable to poor people. Measures adopted are applicable to all people or only to a category of beneficiaries.

OECD countries prefer by and large general measures applicable to all, if possible financed by the budget. These measures are relatively costly because they provide benefits to people who have no problem with water prices. Progressive tariff is often used to reduce wastage and to provide a partial solution to water affordability issues, but it normally requires metering of water consumption.

Special measures have been developed to take care of poverty issues related to water. Targeted water tariffs for the poor have no significant economic impacts. However, measures which open a right to poor people are more expensive than those which allow poor people to benefit of assistance, because many poor people hesitate before asking for support to pay their water. A targeted lifeline tariff is probably the easiest measure to implement when potential beneficiaries are well known and can even be used when there is no metering.

Helping people to pay their bills by reducing the water price selectively before billing will reduce the number of people who are likely to have arrears for water. Taking care of arrears of the poor and limiting the water supply of those who do not pay may be preferable than to inducing them to campaign against public authorities or water utilities and provide excuses for not raising water tariffs.

In general, countries implement a mix of general and special measures because no measure provides a perfect response to the issue of affordability. The choice of the appropriate mix of measures depends on a large number of factors, and no measure except general support can be said to be applicable to every OECD country. Recent history, legal tradition, law enforceability and equity considerations play a large role, which often goes beyond mere economic considerations.

In order to finance water services and ensure sustainability of supply, it is essential to establish and maintain good working relations and confidence between utilities and water users. Water pricing is just one aspect of the whole approach and cannot be separated from other social issues which are much broader and probably more significant. When water prices need to be increased, it is preferable to solve first the side issue of providing water to the poor, to introduce full transparency and to engage in adequate consultation with users as well as with municipalities. Experience has shown that the big stick of disconnecting people and ignoring their fundamental rights to water is less applicable than before.

Solving the water poverty issue by a proper mix of measures will help to concentrate on the central issue:

Who should pay for water: the users or the local taxpayers?

bearing in mind that financial support for water from central government is likely to decrease or to disappear altogether. OECD countries are advocating full cost recovery, but most of them have not yet succeeded in implementing it, in part because of the social issues.

Table 1. RATIO BETWEEN PRICE ACTUALLY PAID FOR DRINKING WATER AND PRICE THAT WOULD HAVE TO BE PAID WITH FULL COST RECOVERY AND A NEW WATER NETWORK

Portugal	18%
Greece	19%
Spain	25%
Korea	67%
France	73%
Germany	83%
Denmark	89%
United Kingdom	92%

Source: OECD: *The Price of Water*, Table 22 (1999).

Table 2. EFFECT OF A LIFELINE TARIFF FOR POOR HOUSEHOLDS IN SELECTED OECD COUNTRIES

Country	Consumption L/person/day	% poor in pop.*	Income share of lower 10 %**	Water price increase %
Canada	326	5.7	2.8	0.2
Germany	116	5.2	3.3	0.5
Greece	200	8.1	3.0	0.4
Italy	213	8.5	3.5	0.4
Mexico	135	14.8	1.6	1.2
Turkey	195	9.6	2.3	0.5
United States	305	11.1	1.8	0.4

Notes:
- Countries selected among those with a high proportion of poor households (at least 5%).
- Calculations of water price increases based on the assumption that half of those having an income below 40% of the median income would receive the equivalent of 40 L per person per day of water at half price and that the corresponding cost would be spread among the other users.
* Percentage of population with an income below 40% of the median income.
**Share of total income received by the lower 10% of the distribution of the population by income. Example: the poorer 10% of the Mexican population receive 1.6% of total revenue. In Finland, the corresponding figure is 4.2% of revenue.
Sources: OECD: *The Price of Water*, 1999. OECD Social Statistics, 2001. UNDP: Human Development Report, 2001.