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Access to drinking water at an affordable price In developing countries

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Abstract. Affordability of water for human consumption is an official target or a legal requirement in many countries. While everyone agrees that drinking water prices should be reasonable, there is no agreed method to set up a limit of reasonableness or of economic accessibility for water. In transition and developing countries, the affordability index is generally higher depending whether the country seeks to reduce subsidies for water. Improving access to affordable water requires attention to the affordability index.

Keywords. Affordability index – Water prices – Economic accessibility – Developing countries.

Accès à l'eau potable à un prix abordable dans les pays en développement

Résumé. L'abordabilité de l'eau pour la consommation humaine représente un objectif officiel ou une exigence légale dans de nombreux pays. Si tout le monde s'accorde à reconnaître que le prix de l'eau potable devrait être raisonnable, il n'existe aucune méthode établie pour fixer un seuil de raisonabilité ou d'accessibilité économique de l'eau. En général, dans les pays en transition ou en développement, l'indice d'abordabilité varie considérablement suivant que le pays essaie ou non de réduire les subventions pour l'eau. Afin d'améliorer l'accès à l'eau à un prix abordable, il est nécessaire d'accorder une attention spéciale à l'indice d'abordabilité.

Mots-clés. Indice d'abordabilité – Prix de l'eau – Accessibilité économique – Pays en développement.

I – Introduction

Affordability of water for human consumption is an official target or a legal requirement in many countries. It was referred to in the Millennium Declaration but is NOT mentioned in most references to the content of the Millennium Development Goals. The right to drinking water is not the right to buy bottles of mineral water but the right to consume drinking water even when users do not have the means to pay its usual price.

While everyone agrees that drinking water prices should be reasonable, there is no agreed method to set up a limit of reasonableness or of economic accessibility for water. Economic affordability of drinking water provided by supply networks and associated sanitation may be described by an index comparing the water and sanitation bill of a household to its disposable income (affordability index).

In industrialized countries, households with an income equal to the median disposable income generally spend around 1.1% of their income for their water and sanitation bill. Poor households spend on average approximately 2.6% of their income. Higher indices are observed in some regions and for very poor people. In order to help vulnerable people, public authorities often take measures aiming to reduce water bills to less than 3%. The similarity of indices in use in various countries and of approaches could provide an objective basis for quantifying the concept of water affordability. By and large it would seem that State practice supports the choice of an affordability index of 3 to 4% of disposable income of poor households in industrialized countries.

In transition countries and developing countries, the affordability index is generally higher depending whether the country seeks to reduce subsidies for water. Median households often have to spend 2.5% of their income for water, i.e. over twice what is practiced in industrialized countries. Consequently the affordability index of poor households is about three times larger (7.5%) because of the low income of very poor households. State practice shows that such high values of the index are generally tolerated. A number of developing States have adopted policies to promote an affordability index for poor households of 3 to 5% and implement measures to reduce the burden of water expenses for poor people.

Improving access to affordable water requires paying attention to the affordability index and taking measures to reduce it such as differentiated pricing, targeted aid programmes, cross-subsidy systems, etc. Many developing countries have implemented such measures. Those countries which do little on affordability are likely to impose a high burden of water expenses on the most deprived people.

II – Affordability of water is a right for all

Everyone will agree that in the framework of economic and social rights, drinking water should be available to all at an affordable price, either as a political objective or as a legal obligation (see below). However, the meaning of an affordable price is generally undefined both at international or national levels.

This paper seeks to quantify the concept of affordability of drinking water supplied by public networks with special emphasis on water in transition or developing countries; it is based on relevant statistics and legal texts from developed or developing countries. By water price, we mean the price actually paid by a household for water supply and sanitation services taking into account any subsidy and rebates for water use.

1. The right to affordable water at international level

In General Comment Nr 15 “The right to water” (E/C.12/2002/11) issued by the Committee on Economic, Social and Cultural Rights, it is stated that:

- “The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses”;
- “The obligation to fulfil requires States parties to adopt the necessary measures directed towards the full realization of the right to water. The obligation includes, inter alia, ...ensuring that water is affordable for everyone”.

One sentence of the Comment helps to understand what is meant by “affordable”:

- “Equity demands that poorer households should not be disproportionately burdened with water expenses as compared to richer households”.

As poorer households are always burdened by higher water expenses than richer households (Fig. 1 and 2), the key word is “disproportionately”. As usual, no indication is given to determine when the disproportion is excessive and national courts have probably not provided appropriate jurisprudence to assess disproportion when dealing with water prices.

Affordability for water emerged as a general principle at international level in 1992 in the Dublin Statement on Water and Sustainable Development: “it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price.” In March 2000, the Ministerial Declaration of The Hague on Water Security in the 21st Century (Second World Water Forum) included the common goal that “every person has access to enough safe water at an affordable cost to lead a healthy and productive life”. In September 2000, the General

Assembly of the United Nations adopted the United Nations Millennium Declaration in which it referred to improving access to water for people who “are unable to reach safe drinking water” but also for people “who are unable to afford safe drinking water”. The emphasis on affordability should be stressed because nearly no one refers today to this issue and nearly all commentators ignore people who “are unable to afford safe drinking water”.

Affordability is included in only a few international treaties. In Latin America, the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, i. e. the so-called “Protocol of San Salvador” (1988) states that:

“Everyone shall have the right to live in a healthy environment and to have access to basic public services.”

In Latin America, many national laws require explicitly the provision of basic services to the poor.

In Europe, the Protocol on Water and Health (London, 1999) deals with State obligations concerning water supply and sanitation; it includes in particular the provision:

- “Equitable access to water, adequate in terms both of quantity and
- of quality, should be provided for all members of the population,
- especially those who suffer a disadvantage or social exclusion”.

Equitable access means here access at an affordable price and even free access in some cases.

At European Union level, the Protocol Nr 9 to the Treaty of Lisbon (2007) on services of general interest has formally introduced the concept of affordability in EU law:

The shared values of the Union in respect of services of general economic interest include in particular:... a high level of ... affordability, equal treatment and the promotion of universal access and of user rights”.

This Protocol means that drinking water should be available to all everywhere in the EU at an affordable price. EU directives already exist for affordable postal and telecommunication services and directives for affordable electricity and gas are under discussion.

2. The right to affordable water in national law

In a large number of countries, national law states that drinking water should be available to all, even the most deprived people, and that the price of water must be equitable, fair, acceptable, accessible, affordable or reasonable. Examples of such laws have been found in over 20 countries. For instance, the 2006 French Water law states that water for essential uses shall be available at economic conditions acceptable to all (“dans des conditions économiquement acceptables par tous”) and that it is right of the individual. However, the content of this right is still unclear.

In Indonesia, a regulation adopted in 2006 prescribes that domestic expenses for the fulfilment of the standard of basic needs for drinking water should not exceed 4% of the income of the user or household (deemed to earn the provincial minimum wage). In this case the objective is clear and measures could be taken to meet the objective.

The right to affordable water can be implemented by managing water services in an efficient way, by providing sizable subsidies to the water sector, by adopting a social tariff for water or by providing targeted aid for water. Social tariffs and targeted aid for water are not yet implemented on a large scale in developing countries.

III – Affordability needs a definition and a yardstick

As there is no generally accepted definition of the meaning of affordability or a limit of unaffordability, there is a need to propose an approach to evaluate what an unaffordable price for water could be.

Water might be considered as being unaffordable if it is more expensive than “elsewhere”, for instance if it costs more than what is charged to 90% of the users. If water prices were uniform, this approach would be of little help. Water might be considered to be unaffordable if it includes unconnected payments such as a bribe or side payment. But this is not applicable when such payments are absent.

A more appropriate approach might consist in comparing water expenses with family budget assuming that water expenses are paid explicitly by the household (not through taxes). The ratio of the water bill of a household to its disposable income describes the size of the part of the household budget used for water; it is called the “affordability index” of the household. If the index is high, water is said to be too expensive, too costly or even unaffordable. When it is low, people do not raise the issue of affordability because water expenses are a trivial part of the family budget. This definition of affordability is in line with a statement in General Comment N°4 on the Right to Adequate Housing (HRI/GEN/1/Rev.7(2004)): “Steps should be taken by States parties to ensure that the percentage of housing-related costs is, in general, commensurate with income levels”). The same logic can be used for water. The European Commission in both its Green and White books on services of general interest expressed itself in favour of a definition of affordability based on the cost of services and the disposable income of the user.

Having defined an index of affordability, the issue is to determine under which conditions water can be said to be unaffordable, i.e. when the right to water at an affordable price would be violated. We will limit our analysis to drinking water supplied by public networks under the control of public authorities and exclude water provided on the free market (water sold from tanks, in bottles or at a stand post).

To assess affordability, we take into account all expenses for water paid by a household when buying water and include sanitation expenses and taxes paid with water and we add other water and sanitation expenses if identified and paid separately (through local taxes). Water prices vary with consumption (when metered), technical and geographical conditions, quality of service, environmental standards, inclusion of rainwater expenses or not. To allow comparisons, consumption is generally standardized at 120 m³ per year per household connected to a supply network. The water bill is generally below water costs because of subsidies and can actually be a very small part of the full costs of water.

Water expenses are compared to disposable income of the household. It can be a “median” household if the disposable income is the “median” income. It can also be a “poor” household if the disposable income is much smaller. The income of the poor family can be 50% or 40% of the median income, the upper limit of the first decile of income, the average income of the first decile, etc. An easy reference for the income of “poor” households is 40% of the median income.

Water prices and disposable income vary from one municipality to another. Regional or national averages can be established to derive aggregate affordability indices but hide considerable differences. Water expenses vary little with income because water is an essential good necessary for life. They represent a higher proportion of total consumption expenses of poor people than of average people (Fig.1 and 2). Wealthy people have an index 10 times below the index of poor people. Because of this difference only poor people will complain of the high price of water but such complain is not always made because water expenses are a small part of housing expenses (that include rent, heating, electricity, water and telephone).

When water prices increase, people who have little means could in principle reduce their water consumption but this is difficult to achieve because water consumption is related to basic needs

(health, cleanliness, toilets, food, beverage, etc), is weakly dependant on income level and, in some case, the water bill is weakly dependant on consumption. Alternatively poor people could use unsafe water with the risk of becoming sick and spreading epidemics (typhoid, cholera, etc.). Another solution would be to forego other essential expenses such as food or health expenses to pay for an increase in water price.

Public authorities could alleviate the effects of the increase in water price by improving efficiency, providing higher water subsidies for all or by setting up social tariffs or aid targeted on the poor. The last solution is less costly for public finance but more complex to implement. It requires specifying who will be aided and who will finance the aid.

We shall base our analysis on observations of policies and measures taken by public authorities and not on theoretical or ideological concepts. Indications that water prices are unaffordable are given by the amount of water thefts, the amount of unpaid bills, the unwillingness of many users to pay their bills. Such indications of unaffordability are not usable at international level because they closely depend on institutional and historical factors.

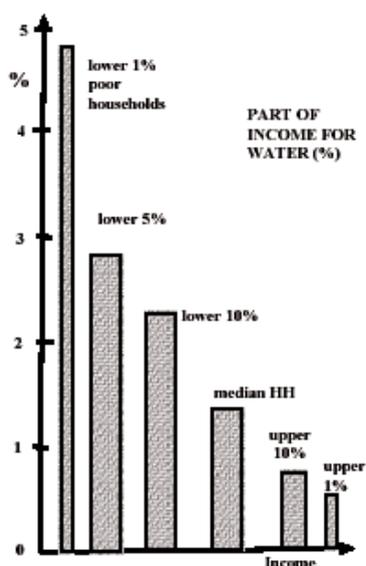


Figure 1. Water expenses as a function of income (France).

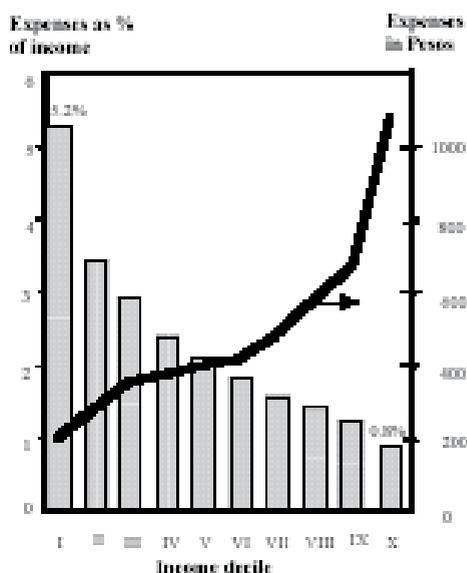


Figure 2. Water expenses in Mexico (1996).

IV – Range of water affordability indices in various countries

Because of the large number of parameters that influence the price of drinking water and sanitation and the level of household's income, affordability indices vary within a wide range (from 0 to 20%). It can be nil if water is freely available (public fountain or stand post) or very high if the user has to pay a water vendor. Consistent series of reliable affordability indices are not easily available. Caution should be exercised when comparing water affordability indices because prices vary rapidly and data are not always comparable.

In Western Europe, the affordability index for median households in various industrialized countries is around 1.1% (Fig .3). The range of indices (from 0.7 to 1.7%) is relatively limited as if countries had decided what they should charge to their citizens for their water consumption and

what they should bear through subsidies. These values represent the usually observed levels of indices, not a target.

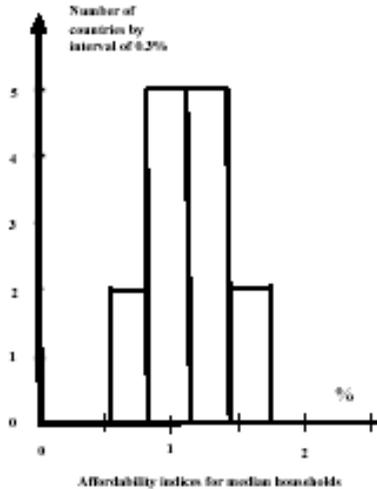


Figure 3. Distribution of affordability indices in 14 European countries.

For households with 40% of median income and identical water consumption (120 m³/yr for households¹), the affordability index is 2.75% (1.1% /0.4) when there is no social measure (social tariffs, targeted aid for water, aid for water debts, etc.). The affordability index can be higher than the average 2.75% if people are very poor (e.g. unemployed people living on state aid) or in municipalities where water is particularly expensive. Indices above 5% are found in Western Europe and can exceed 10% in developing countries. Fortunately social assistance when available alleviates unaffordability problems such as a reduction in food consumption, less medical and dental treatment, non payment of other utilities, less attendance of schools, longer working hours.

In countries with intermediate or low income, the affordability index is generally higher than in Western Europe because the decrease in the price of water is lower than the decrease in disposable income. This is particularly true when income inequality is large and poverty is deep. Because of data constraints, affordability indices have been compared for only three groups of countries : transition countries, Latin America and Africa.

For transition countries (EECCA), the affordability index of median households is generally in the range 1.5 to 3% (average 2.6%, Fig. 4), i.e. over twice the comparable index in Western European countries (1.1%). Closer examination of the data shows that there are probably two groups of EECCA countries : those with high water subsidies and low water price (affordability index for median households near 1%) and those with reduced subsidies and higher water prices (affordability index of median households near 3.5%). While the first group of countries has no affordability problem at this stage, the second group of EECCA countries could have such problems because people in the lower decile of income or below 40% of median income would have an affordability index between 5 and 10%. For instance, in Ukraine 6.4% of users have to pay over 6% of their income for water (Fig. 5). In Russia, people in the lower decile spend more than 6% for water. These figures are large but people have little alternative.

An affordability limit of 4%, as proposed by OECD for poor households in EECCA countries, may not reflect State practice in all these States; it may be difficult to achieve, as it could mean providing aid for water to more than 20% of the population. An affordability limit of 3% as proposed

by UNDP would be even more difficult to implement and could be unrealistic where water prices are already high.

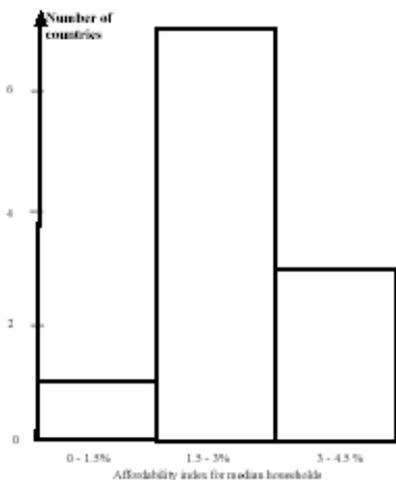


Figure 4. Distribution of affordability indices in 11 transition countries .



Figure 5. Water unaffordability curve in Ukraine (OCSE, 2001).

In Latin America, most countries have affordability indices above 4% for median households (Fig.6), which are much higher than the previous estimates (around 2.5%). Because of social tariffs, the affordability index for poor households does not exceed 10% and would generally be around 6% for the first decile of income. This would show that governments in that region consider that an affordability index for poor household of 6% is acceptable.

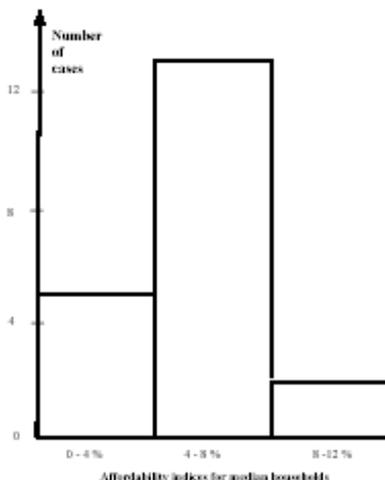


Figure 6. Distribution of affordability indices in Latin America (ADERASA).

In Africa, the affordability index for median households is around 2.8% and for poor households connected to public water supply it could easily reach 7.5%. Much higher values of the index have been observed in slums with water supplied by water vendors.

The analysis of affordability indices for poor households in the world leads to the conclusion that many governments have accepted (Box 1) that water expenses of poor households exceed 7% of the disposable income of poor households, i.e. much more than the target or benchmark of 5% used by the Asian Development Bank.

The limit of unaffordability, i.e. the level of the affordability index, above which developing or transition countries would take special measures in favour of poor users, is likely to be around 7%. Some developing countries have decided to make sure that water for poor households is not too expensive. For instance, in Morocco, the target of 3% for water supply and sanitation is considered appropriate.

In some countries (Table 1), national water law or strategy prescribes a target of a maximum of 3% for water expenses alone and a maximum of 6% for water and sanitation expenses together. These are policy targets that would have to be implemented by various measures and which are likely to lead to higher affordability indices for the very poor. In Chile a person having to pay more than the affordability limit is entitled to receive an aid. In Columbia, poor people pay less for water than rich people.

V– Targeted aid and social tariffs

In a large number of developing countries with metered supply, water tariffs are progressive with a first block of water consumption at reduced price for all. Such measures are designed to help poor users and will achieve the expected results depending on the level of water consumption, the structure of households and the financing mechanism of the tariff reduction. Progressive tariffs may have a social function provided that they benefit mostly to poor users. This requires a small first block and possibly the denial of the lower tariff to people which are not poor (value of housing, use of electricity, etc). In some cases, most of the subsidy for water will actually be used by wealthy users. Cross subsidies between enterprises and households help reduce water expenses of households.

Box 1

Examples of high affordability indices (figures above 5%)

Fraction of disposable income used for water

a) *Industrialized countries:*

France: 1% of the population spends more than 4.8%;

United Kingdom: 2% of the population spends more than 8%.

b) *Transition countries in Europe:*

Hungary: the lower quintile spends more than 5.3%;

Poland: households with less than 50% of median income spend over 10.8%;

Rumania: the lower quintile spends more than 5.7% and households with less than 50% of median income spend over 8.1%;

Latvia: the lower quintile spends more than 5.1% and households with less than 50% of median income spend over 6.3%;

Russia: the lower decile spends more than 6%;

Ukraine: 6.4% of the population spends more than 6%;

Armenia: 12.3% of the population spends more than 5%.

c) *Latin America:*

Chile: the two lower quintiles in Valparaiso spend on average over 5%;

Uruguay: the lower quintile spends more than 10.4%;

Surinam, Bolivia and Colombia: the lower quintile spends more than 8%;

Ecuador: the lower quintile spends more than 9%;

El Salvador, Argentina and Jamaica: the lower quintile spends more than 11%.

d) *Africa:*

Burkina Faso: the lower quintile spends more than 29% for water.

Targeted aid and social tariffs have been introduced in over 25 non-OECD countries and in over 10 OECD countries to make water more affordable (Box 2). They provide discount (or equivalent aid) ranging between 20 and 100% on the price of water to people that can prove to be poor. By and large, it would seem that many targeted measures in force aim at bringing down the affordability index to less than 5% (Box 3).

Setting up targeted aid systems is not easy if there is no system in place to identify poor users and is not very useful if there is a high proportion of poor households. Rather than using an economic approach, countries have subsidized equipment specially designed for people with high affordability indices such as water stand posts, public latrines (VIP) (Box 4) or clever water stand posts (with electronic cards).

Some countries refuse to envisage special measures for water because they do not wish to provide aid for various essential needs and prefer dealing with the poverty issue as a whole. Other countries do not separate water bills from housing bills and provide aid for all housing related expenses. There are also countries that do not provide social aid to poor people and leave this issue to local communities to manage outside any official set up.

Table 1. Unaffordability limits for water Maximum part for water expenses in disposable income (Official targets or targets used for implementation of aid systems).

Country	Water	Sanit.	Part	Reference disposable income
Lithuania	X	X	2%	individual household
Northern Ireland	X	X	3%	individual household
Argentina	X	-	3%	individual household
Venezuela	X	X	3%	minimum salary
United States	X	-	2,5%	median household
	X	X	4%	median household
Indonesia	X	-	4%	minimum provincial salary
Chile	X	X	5%	individual household
	X	X	3%	individual household
Mongolia	X	-	4%	individual household
	X	X	6%	individual household
For reference				
UNDP	X	X	3%	individual household
OECD	X	X	4%	individual household
BAD	X	X	5%	individual household

VI – Affordability indices in practice

In the absence of social measures to alleviate the burden of water expenses, the affordability index of poor households is in many cases above 7%. Social measures when taken generally introduce a discount on water expenses of at least 25% that brings down the index to approximately 5%. In industrialized countries, few people have a high affordability index (over 8%). In England, little is done to alleviate this situation while poor households in France are entitled by law to receive a targeted aid (as a right and not as a charity if they have water debts). In Chile, the State provides a water subsidy to poor users (see Box 2). This social measure was introduced when water prices were increased. In Columbia, the water tariff depends on the type and location of the user's dwelling.

VII – Selecting limits of unaffordability

The usual behaviour of States in relation to the affordability index gives an indication of what is generally considered as an appropriate price for water. The unaffordability limit that triggers action by public authorities at local level in favour of water for poor households has to be decided by responsible authorities bearing in mind available financial means for such action. Public authorities have to consider the average affordability index of very poor people (lower decile) and decide whether this is acceptable or need to be reduced.

Box 2

Table 2. Countries With A Social Tariff Or A Social Discount For Water Of Poor Users (list to be completed).

Europe	America	Other areas
Belgium	Argentina	Australia
Bulgaria	Bolivia	China
France	Brazil	Gabon
Italy	Chile	Indonesia
Greece	Colombia	Morocco
Hungary	Costa Rica	Mongolia
Netherlands	Mexico	Pakistan
Poland	Nicaragua	South Africa
Portugal	Panama	
Spain	Paraguay	
UK	Peru	
	USA	
	Venezuela	

NB : This list does not refer to lifeline tariffs nor to increasing block tariffs.

Box 3

Chile implements the right to water at an affordable price

In Chile, users belonging to the lower income quintile are entitled to a discount on their water bill if they are poor, i.e. if they have to spend more than approximately 5% of their income on water and sanitation. It is provided to 624 000 households in urban areas and to 87 000 households in rural areas identified by public authorities (16.6% of the total population). The discount amounts to a reduction of 25 to 85% of the bill (maximum 15 m³); it is borne by the State budget (32.5 billion pesos or 5.9% of water sales in 2006, 9 US\$ per household per year). The system was strengthened in 2004 to offer free water to 225 000 very poor households. Chile has recently approved a plan to implement an unaffordability limit of 3% for water and sanitation.

For such an assessment, they could take account of:

- a) the maximum price paid for water in 90% of the municipalities;
- b) the median affordability index which is not exceeded in 90% of the municipalities ;
- c) the affordability index of poor households at the upper limit of the first quintile of income ;
- d) the implicit unaffordability limit relating to special aid systems for water debts;

- e) the unaffordability limits used in neighbouring or similar countries (3 to 6%);
 - f) the unaffordability benchmarks proposed by international organisations (3 to 5%).
-

They could also decide that the affordability index of poor households should not be higher than three times the index for median households or that poor households should not spend on water more than one tenth they spend on food. They could decide that the aid for access to water should be in line with aid for access to electricity when it exists.

Box 4

Public stand posts may provide water at an affordable price

Water stand posts have been built in cities during the Antiquity. They have been an important symbol in the implementation of the right to safe water at an affordable price in industrialized countries. They initially provided free water to all as a symbol of solidarity; when they were introduced, the operator had to support the expenses of the stand post in exchange for the right to lay pipes under the street and to sell water to customers requiring a connection.

Today in countries with extensive water networks, new fountains are still created as a social symbol and also for providing water at an affordable price especially for homeless people. Water stand posts are being installed in transition countries and in developing countries such as Uganda (one stand post for 300 people).

Users in some countries have to pay a small fee to the custodian of the equipment. Some municipalities would prefer to close them down because they are “costly”, create a price inequality or attract “wrong” people. They consider that a valuable good should not be provided without payment and object to what they describe as unfair competition for the water distributor. International financial institutions are said to suggest the closing down of stand posts in some developing countries where water prices have been increasing. On the reverse, stand posts are seen as the only available system to provide water when networks are not sufficiently developed. Stand posts with magnetic card are being developed in Morocco and South Africa to provide a free water allowance to poor households and to avoid water wastage.

It is up to responsible authorities to make the choice of an unaffordability limit for water. Some countries will take no measure to make water more affordable while other countries will provide help for other essential goods and services. On the basis of collected evidence, it may be guessed that countries which act to bring down the affordability index for water are likely to bring the index for poor people to 3% in industrialized countries or to 5% in developing countries. The real issue is not to adopt such a figure as an objective but to develop the corresponding social measures in favour of poor people. Many developing countries are not using targeted systems for water because they lack a developed social security system. The tariff approach is not always usable because metering is unreliable or inexistent.

VIII – Conclusions

In a number of countries, public authorities seek to maintain the water affordability index of poor households below 3 to 7% of their disposable income. Lower values of this range are used in developed countries. In developing countries higher values are often found. Affordability indices exceeding 10% are observed for a small minority of poor people. While affordability benchmarks

of 3 to 5% are promoted by international organisations, such limits will not be achieved unless targeted social measures are implemented and funded. In some cases such benchmarks are not realistic at all because in order to implement them there would be a need to provide aid for water to a large fraction of the population.

Measures to make water more affordable for the most deprived people have been taken in many countries but not in all countries. There are well-designed social tariffs or targeted aids in a number of countries. However many developing countries have taken no action on affordability issues except by providing subsidies for water services that help affluent people to pay water they could have paid themselves. While such subsidies can be useful, they should be directed to people those without access to water or sanitation rather than to those with access to water.

To support access to water and sanitation for all and to be able to increase, if need be, the price of water and sanitation without creating social problems, public authorities should consider the following actions :

- a) to introduce explicitly in the internal law the principle that drinking water should be affordable to all;
- b) to adopt a definition of the water affordability index and assess it in various regions for various groups of population;
- c) to promote discussions on the choice of appropriate measures for water tariffs or targeted aid in line with the users wishes and on the financing of these measures in order for water to be affordable to all bearing in mind other necessary household expenses;
- d) to examine if bodies in charge of water tariffs are legally entitled to introduce differentiated tariffs, social tariffs or other systems of targeted aid to facilitate access to water for poor households;
- e) to develop the various elements of a social policy for water aimed at implementing the principle of affordable water for all and report on the implementation of this policy.

Acknowledgments

This paper is based on the book “De l'eau potable à un prix abordable” published by the Water Academy in 2008 (see www.water-academy.org). This book provides statistical evidence on affordability indices, a description of various mechanisms used to improve water affordability in over 40 States, a detailed case study on water affordability in France where it is shown that this country is operating a system which decreases water expenses of poor households from 4 - 5% down to 2.4 - 3% of their disposable income. A detailed analysis of water affordability in international law and in national legislations is also presented.

¹ We use household figures because most users are households with at least 2 persons. The standard consumption of 120 m³ generally relates to a household of 3 persons or more. Water consumption and expenses of individuals (households of one) are higher.