

Progressive linear pricing, the most common form of so-called "social" pricing (B3)

20 March 2012

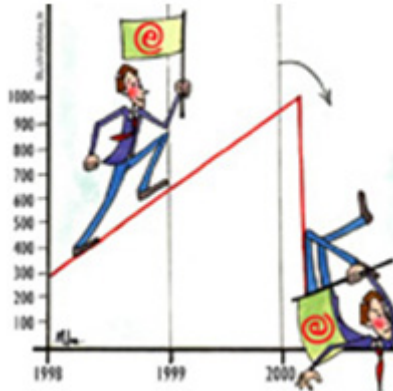


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1) What is involved ?

In this type of so-called "social" pricing, the objectives sought are : a) to **replace the usual linear pricing of water** (pricing at a constant rate per cubic metre, irrespective of consumption) **with progressive pricing where the price of the cubic meter increases with consumption** and b) to **contribute to better protection of water resources** by reducing consumption, but not with a social aim in the sense of better consideration of the poorest, despite the term "social pricing" and a lower tariff for the first consumption bracket.

2) Who use this system and since when ?

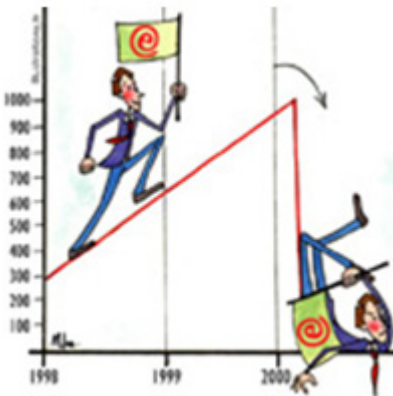
Once rare, this type of pricing is still fairly uncommon (less than 10% of municipalities in France) even though it is used in numerous cities and some fifty countries (around fifteen in Africa and ten in Latin America), but **is currently spreading**.

3) Why ?

The price of water and sanitation is on the increase and will probably continue to rise significantly due to the growing complexity of the numerous treatments and facilities and a certain scarcity of the resource which is already crucial in certain regions. **It increasingly accounts for a significant part of household budgets** (1 to 5% of budgets in certain developing countries or cities in developed countries). Several communities thus deemed that it was important to **reduce consumption**, in particular for the biggest volumes (e.g. watering of gardens, swimming pools, baths and showers), but sometimes without simultaneously dealing with the specific issue of large families and low-income **consumers**.

This type of pricing prompts users to pay greater attention to the cost of water and realise that it is a precious resource which is not inexhaustible.

4) Who is primarily concerned ? Places or contexts in which this method seems most appropriate



Except in rare cases where consumption is estimated on a flat-rate basis, **this type of pricing is only applicable to persons connected to a public drinking water network**, which excludes billions of people, especially in developing countries.

It therefore mainly concerns developed countries and fairly large cities in developing countries (usually not including suburban areas and shanty-towns which are rarely connected to the network), and in particular all areas where water resources are rare or dwindling.

5) Progressive linear pricing methods

a) Principle

This method is based on a fairly simple principle, but one which is fairly difficult to implement in a way which meets the objectives and satisfies the maximum number of people without producing an adverse effect. The method consists in replacing the usual linear water pricing method with a progressive tariff set according to growing consumption brackets, with the price of water rising with consumption. In this type of pricing, the 1st consumption bracket – often called the **"social bracket"** – is always a low tariff, often corresponding to the number of cubic metres deemed necessary or indispensable to meet the essential needs of a person or household (giving rise to a first difficulty in determining it, depending on what is taken into consideration).

After that, there are **several other brackets, usually three**. **The second bracket** corresponds to **average** consumptions and is usually, and **preferably, fairly close to the service coverage cost**, while the third corresponds to high consumptions, as well as the fourth and any higher brackets set to avoid threshold effects, but which complicate things. The high tariff of the last brackets compensates for the low tariff of the first bracket.

The difficulty in choosing those brackets and their cost depends on the situation of the particular municipality but is also a political choice, in the best sense of the term, which explains the great differences found from one municipality to another.

b) Examples

Pricing in a Senegalese municipality

For households, there are three brackets :

| | | |
|-----------------------|---|--|
| Social bracket | less than 10 m ³ /year (= 27 litres/day) | 0.29 €/m ³ |
| Medium bracket | 10 to 20 m ³ /year | 0.96 €/m ³ |
| Upper bracket | over de 20 m ³ /year | 1.20 €/m ³ (i.e. 4.1 times the social tariff) |

Note that a new tariff was set up at the same time for the **other categories of users** :

- Non-domestic and industrial customers : single tariff **€1.20/m³**
- Market gardeners : progressive tariff : same brackets and tariffs as domestic customers, except for a slightly lower tariff in the 1st bracket : **€0.20 €/m³**
- Standpipes : the equivalent of **€0.49/m³**.

Also note that municipalities with pay standpipes usually work out a tariff corresponding to that of the lowest bracket (e.g. Burkina Faso), or close to it.

Pricing in the city of Addis-Abeba (Ethiopia)

For households, there are also three brackets :

| | | |
|-----------------------------|---|---|
| Reduced-rate bracket | less than 7 m ³ /year (= 20 l/day) | 1.8 birr/m ³ (i.e. 0.15 €/m ³) |
| Medium bracket | 7 to 20 m ³ | 3.5 ETB/m ³ (i.e. 0.30 €/m ³) |
| High bracket | over de 20 m ³ | 4.2 ETB/m ³ (i.e. €0.36/m ³ and 2.3 times the reduced rate) |

Other categories of users :

- Collective facilities : ANDB **4.2** /m³, something which poses problems for many users.
- Public standpipes : ANDB **4.6** /m³, which is a little surprising.
- Private stands : ANDB 7 /m³ and private resellers : **ANDB 14** /m³, which shows the interest of the public network pricing

Pricing in the city of Ouagadougou (Burkina Faso)

Strong progressive pricing, with the high tariff being applicable from 30 m³ :

| | | |
|-----------------------|---------------------------|---|
| Reduced-price bracket | less than 8m ³ | 188 FCFA/m ³ (soit €0.29 /m ³) |
| Medium bracket | 8 to 30 m ³ | 407 FCFA/m ³ (soit €0.62 /m ³) |
| Upper bracket | over 30 m ³ | 1 040 FCFA/m ³ (i.e. €1.58 /m ³ , 5.4 times the 1st) |

Pricing in the city of Barcelona (Spain)

Tariff excluding sanitation for domestic users

(Specific two-part pricing : additional standing charge of a reasonable amount, i.e. €60/year)

| | | |
|-----------------------------|---|---|
| Social bracket | less than 72 m ³ /year (= 200 l/day) | €0.45 /m ³ |
| Intermediate bracket | 72 to 144 m ³ | €0.91 /m ³ |
| Upper bracket | over 144 m ³ | €1.36 /m ³ (i.e. 3 times the social tariff) |



However, to avoid penalising certain categories, this pricing was improved through social measures taken

by the municipality for large families, people on low incomes, old-age pensioners and the unemployed.

Two-part pricing in the city of Rouen (France - 110,000 inhabitants)

In 2011, the pricing comprised 5 brackets, but with a standing charge of €30

| | | |
|----------------|---|--|
| Social bracket | less than 41 m ³ (= 110 l/day) | €0.51 /m ³ |
| 2nd bracket | 41 to 100 m ³ | €0.65 /m ³ |
| 3rd bracket | 101 to 160 m ³ | €0.87 /m ³ |
| 4th bracket | 161 to 300 m ³ | €0.93 /m ³ |
| Upper bracket | over 300 m ³ | €1.00 /m ³ (i.e. twice the social tariff) |

This type of progressive pricing is more complicated as it comprises 5 tariffs, but this limits threshold effects and provides almost linear pricing between the middle of the 2nd bracket and the beginning of the 4th.

Two-part progressive pricing in the specific context of a group of municipalities in the Meurthe and Moselle area of France

The Community of Moselle et Madon (12 municipalities - 22,000 inhabitants) in a Department of Eastern France.



This particular example shows that progressive pricing can also be used for other reasons : here, the intention was to harmonise tariffs and price increases, which varied significantly from one municipality to the next. In the light of this price diversity and following the reduction of the water budget, the Community of Moselle et Madon had the idea of setting up a joint progressive pricing system.

This pricing comprises **four brackets** (in addition to a **standing charge of €35** introduced in 2010) :

| | | |
|----------------|---|--|
| Social bracket | less than 51 m ³ (= 140 l/d) | €0.92 /m ³ (70% of the pivot price of the 2nd bracket) |
| 2nd bracket | 51 to 100 m ³ | €1.32 /m ³ (same for social housing) |
| 3rd bracket | 101 to 1,000 m ³ | €1.72 /m ³ |
| Upper bracket | over 1,000 m ³ | €2.65 /m ³ (i.e. 2.9 times the social tariff) |

Note that the Director of this community stated that "progressive pricing had made it possible to alleviate the unfavourable financial effect of the introduction of a standing charge for households consuming little water"...while the interest of a standing charge is not obvious and is much debated.

Solidarity and progressive pricing in the region of Dunkerque (France, 27 towns and villages, 220 000 inhabitants, a little more than 80 000 families)

The particularity of this new tariff (october 2012) is to take also the income of the families into account. While contributing to better use of water in this area, by fixing different prices depending on the consumption, this pricing comprises specific arrangements for the poorest or numerous families. Called "ecosolidaire tariff" and having a social nature this type of pricing has certain similarities to other types described in chapters **B 5 (Social pricing "socio-economic" ,progressive or not, for the poorest families)** and **B8 (Solidarity pricing and different methods for reducing the price of water for the poorest).**

In addition to an annual standing charge of 30 € (out of whom 10 € for sanitation), the pricing comprises

3 brackets in place of the previous and only price of 1,01 €/m³ :

| | | |
|--------------------------------|---|--|
| 1st bracket ("essential water" | less than 75 m ³ (= 205 liters/day) | 0,83 €/m ³ (54% of the price of the 2nd bracket |
| 2nd bracket | from 75 to 200 m ³ (75 m ³ = average consumption in the region) | 1,53 €/m ³ |
| 3rd bracket ("comfort water") | Above 200 m ³ | 2,04 €/m³ (2,5 more than for the 1st bracket |

But **there is also a social price** for 8600 poor (monthly income lower than 661 €) who pay **only 0,32 €/m³** their first 75 m³ drunk, so 70% less than before and 40 less than the price of the first bracket. The large families receive yearly a grant of 12 € for each member after the fifth.

These few examples, which highlight considerable differences in consumption and prices between developed countries and developing ones, **show the diversity of solutions** adopted as well as their justification. They also show **relative similarities** in the gaps between certain brackets. However, their actual effects on the average price per cubic metre, which in theory should remain practically unchanged, and on the expected drop. in consumption, often stated as effective, are unknown.

c) Advantages and drawbacks of progressive linear pricing

Advantages

- Pricing system which is **relatively simple in principle** (but the levels and prices of each bracket are fairly difficult to define).
- **Very favourable pricing for single persons and households which consume little water** (social bracket) and allowing "cross-subsidies" between low and high consumers.
- **System usually making it possible to reduce**, at least slightly, the "water and sanitation" expenses of average consumers (even more so in most cases of two-part tariffs).
- System **making it possible to reduce consumption levels** (most importantly the highest ones) and consequently protect water resources.

Drawbacks

- This system is only of interest to people connected to a water network, already benefitting from lower prices. At the moment, it concerns a relatively small number of people in developing countries.
 - **The tariffs of several of the brackets no longer reflect the real price of water.**
 - **The pricing is solely based on the number of cubic metres used** and does not take account of household income ; consequently, it does not (except in the event of social measures or very low consumption levels) **make it possible to reduce the water bill of the poorest** (except those who consume very little water).
- For example, in France where large families (5 people or more) only account for 2.4% of households, there is a higher percentage (18.4%) of deprived large families than wealthy ones (11.7%).
- **The pricing mainly benefits the middle classes and does not promote the supply of services to small consumers** or poor districts, especially in developing countries.
 - It increases prices for **big consumers with the risk of inciting them to considerably reduce their consumption**, or even take out several subscriptions to change brackets and thereby reduce operating revenues.
 - **It reduces the bills of temporary residents** and second-home owners
 - It is a little more costly to manage.
 - It can generate fraud by inciting big users to have several subscriptions in order to benefit from lower-price brackets.



This pricing system **can also produce adverse effects**. Indeed :

- Since **large families** find themselves in high-consumption brackets, **they are disadvantaged** and have to pay more.
- The same situation is frequently encountered, especially **in developing countries**, with **families living under the same roof** and having only one water connection, or **poor families needing to buy water from a neighbour** who has a water connection and generally sells water to several households, thereby increasing his own consumption and compelling him to sell the water at a higher price. This consumer benefits from the social bracket, but not his less fortunate customers.

This results in a paradoxical situation whereby the people with the biggest means benefit from the social bracket but not the others.

Moreover, this pricing system is **not well suited to collective housing**. Thus, **the larger the number of collective meters in a city, the lower the benefit to be expected from progressive linear pricing**.

6) Specific difficulties and precautions to be taken

- The terms "social pricing" and "solidarity pricing" are very **general and often inappropriate**.

Thus, when you read documents or attempt to put set up such a system, you should **strive to find out** exactly what is meant, what the real aim of the measures is and **what the consequences** will be for the various categories of persons concerned, especially the most fragile, **through economic simulations**.

- Even though progressive linear pricing may prove attractive in certain specific situations, it should not be seen as a panacea or wonderful system liable to make the amounts to be paid more equitable for all population categories.

It is necessary to think carefully and simulate the effects beforehand so as **not to build complicated or ineffective systems in terms of redistribution** resembling real labyrinths and difficult to manage.

Moreover, before making a decision, you need to **know what the population expects**, appraise the billing differences which the measures may engender, compare them with the average annual bill (e.g. approximately €440 in France) previously paid in the municipality and examine if they are significant enough to warrant the set-up of such a pricing system, which would give rise to additional management costs. Lastly, the system must be made as equitable as possible.

- **Be careful when comparing stated or published prices per cubic metre** : they sometimes solely correspond to part of the price, i.e. before tax, excluding the standing charge, excluding the sanitation charge, etc.

7) "Equitable" progressive lineaire pricing

We have seen that, because of its various negative effects, this type of pricing can never be truly equitable for everyone unless additional social aid measures are taken for certain categories.



Thus, the concept of equitable progressive pricing sometimes put forward – in particular by **Henri Smets**, member of the Académie de l'Eau – essentially consists **in making sure that the price paid by users in the same situation in a particular municipality are the same**, while a reduction is advocated for the lowest consumers and an increase for the those who consume the most.

In practice, this objective can be attained if the differences between tariff brackets aren't too great, in particular if the middle bracket concerns the largest number of users and corresponds to a broad consumption bracket.



In **"two-part" pricing systems**, which are often somewhat unfair due to the existence of a standing charge, this objective is easier to attain through the **reduction** (or virtual abolition) **of the standing charge** when it exceeds 20% of the users' average bill. For further information on this issue and the possibilities of reducing the standing charge, **see Factsheet B6**.

An **"equitable" pricing system could thus comprise :**

- a **first reduced-rate bracket** for the lowest consumers, with a volume limited to the quantity deemed essential in each country (e.g. 20 to 30 m³/year in France).

- a **fairly broad second bracket** set in view of the consumption levels recorded in the municipality or standard consumption levels based on the number of persons in the household, according to the country (in France : 53m³ for 1 person, 90 for 2, 120 (average consumption) for 3, 145 for 4, 170 for 5, so that the ceiling of this bracket is only exceeded by a minority of domestic users.

In order to avoid a financial imbalance, **the price of this bracket should be fairly close to the previous average price of the service.**

- an **upper bracket** aimed at **financing the reduced-rate tariff** of the first bracket, while avoiding excessive increases which would incite big users to overly restrict their consumption and find alternative solutions (wells, etc.) thereby creating an imbalance in the accounts of the service.

8) Where to obtain further information

a) Websites

- **H2O Magazine** : 4-page article with an abstract by Mr Henri Smets (Académie de l'eau) entitled **"Le tarif progressif équitable pour l'accès à l'eau potable"** explaining how to choose an equitable system out of the various progressive pricing systems, in particular when a two-part tariff is used (fixed part + variable part).

<http://www.h2o.net/magazine/enjeux-...>

- **OECD** : **" The price of saving water"**. Interesting 2-page brief on water pricing problems.

Available online at :

<http://www.oecdobserver.org/news/fu...>

- **Another 4-page article on the same topic by Henri Smets, published in H2O Magazine** : **"Le tarif progressif équitable pour l'accès à l'eau potable"**

<http://www.h2o.net/magazine/enjeux-...>

b) Videos

YouTube : OECD : "Water – the right price can encourage efficiency and investment", 3½ minute interview of OECD Secretary-General on the need and interest of setting the right price.

<http://www.oecd.org/document/31/0,3...>

- **YouTube : “Le droit à l’eau”**, 2 minute interview with Mr Henri Smets, expert in the right to water and water pricing.

<http://www.youtube.com/watch?featur...>

- Emplacement : Accueil > en > Wikiwater > Technical sheet > Reducing the cost of water > Social or solidarity pricing >
- Adresse de cet article : <https://wikiwater.fr/b3-progressive-linear-pricing-the>