

## The worry about agricultural and industrial pollution of tap water is costing households €300 million per year

Although its quality is improving, French people are increasingly sceptical about tap water. Consequently, for their "drinking" use, 40% of them consume bottled water and 20% filter their tap water (via jug water filters or fixed filtration units).

According to a survey conducted by the CGDD (General Commission for Sustainable Development), three million people are turning their backs on tap water for fear of it being contaminated by traces of agricultural and industrial products, with two million of them preferring bottled water and one million using jug water filters. They are spending €290 million per year on the former and €6 million per year on the latter.

Tap water, however, already undergoes measurements and treatments designed to ensure its drinkability. Their costs have been estimated by the CGDD at between €600 and €1,100 million and are borne by the entire population through the water bill.

Over the past 30 years, the consumption of bottled water has tripled and there has been a significant rise in domestic filtration.

To understand the reasons for this change, the CGDD conducted a survey of the metropolitan French population in 2013 (the survey methodology is described in the box on page 4 of this publication).

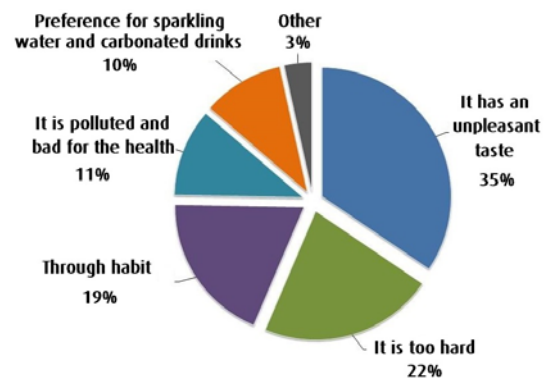
This survey determined that, while the majority of people who turn away from tap water do so because of its unpleasant taste or because they find it too "hard", 10% mention pollution and adverse effects on health.

The CGDD has estimated the expenditure associated with this decision concerning consumption. It has also calculated the costs of treating tap water in response to the types of pollution mentioned.

**11% of bottled water drinkers are worried about the pollution of tap water**

A third of people that drink bottled water declare that they do not drink tap water due to its unpleasant taste. The other reasons, in order of popularity, are its "hardness", through habit, the worry about pollution and a preference for sparkling water (Figure 1).

Figure 1 – Main reason for bottled water drinkers not drinking tap water



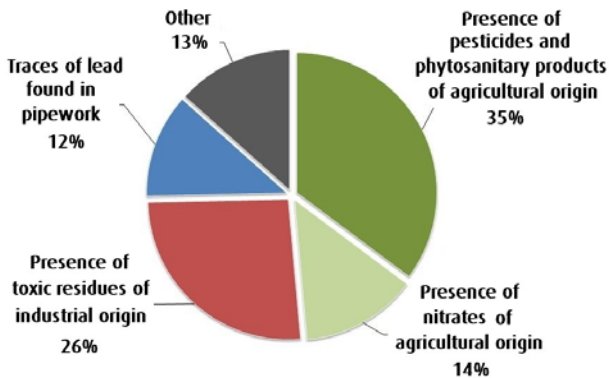
*NB.* The "Other" category contains different responses such as the unappealing colour of tap water supplied via the tap or the need to drink bottled water for medical reasons.

*Source:* CGDD survey

**Agricultural and industrial traces perceived as the main reason of tap water pollution**

Half of the people who declared drinking bottled water for health reasons are specifically worried about the presence of residues of agricultural products in tap water (35% for pesticides and 14% for nitrates) and a quarter of them are concerned about the presence of toxic residues of industrial origin (Figure 2).

Figure 2 – Types of tap water pollution feared by drinkers of bottled water



Source: CGDD survey

The presence of lead in pipework and, to a lesser extent, of medication residues and chemical products (“Other” category in Figure 2), also cause concern for a quarter of these people.

The worry about tap water being contaminated by pollution of agricultural and industrial origin thus leads a not insignificant proportion of the population to drink bottled water. Regardless of whether this is locally justified practice, this consumption behaviour causes additional expenditure for the households concerned.

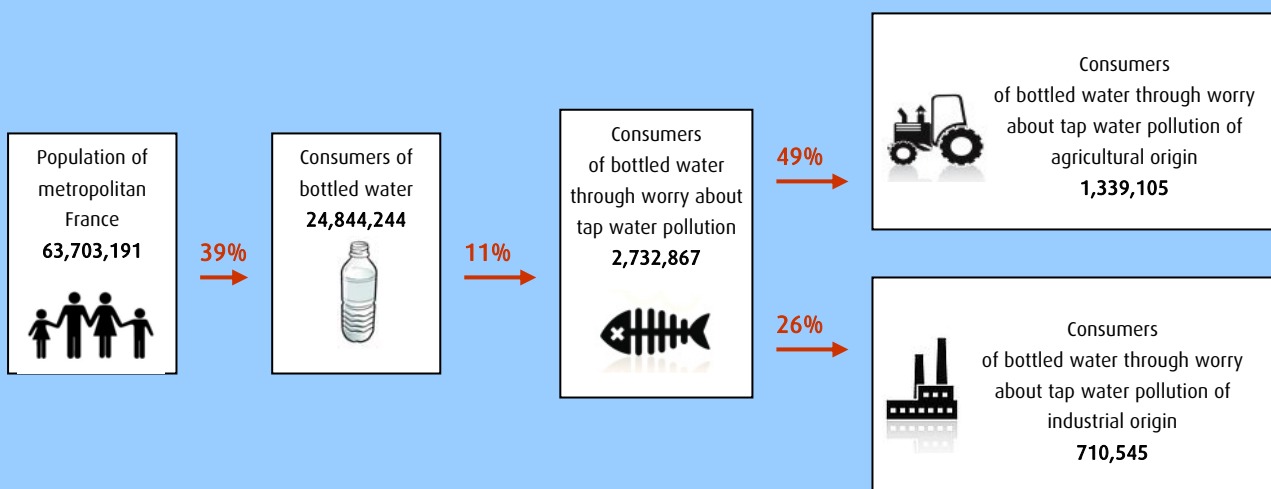
Based on the data collected by its survey, the CGDD has estimated the number of French people concerned by this problem. Using the annual consumption data produced by INSEE (National Institute of Statistics and Economic Studies), it was then possible to calculate the total amount of the corresponding expenditure. These amounted up to €190 million due to the worry about agricultural pollution and €100 million due to the worry about industrial pollution (Box 1).

**Box 1 – Expenditure on consumption of bottled water through concerns about agricultural and industrial pollution**

People of 18 years of age and older were questioned and hypotheses were formulated to allow for an evaluation of the entire population. For people under 18 years of age, the different ratios (consumers of bottled water through worry about tap water pollution and through worry about agricultural and industrial pollution) were presumed to be identical to the adult ratios.

There were 64 million inhabitants in metropolitan France on 1 January 2013. The CGDD survey allows for the assertion that within this population, there are 25 million consumers of bottled water, approximately 1.3 million of whom have adopted this mode of consumption due to worries about agricultural pollution and 700,000 through worry about industrial pollution (cf. Figure 3).

Figure 3 – Consumers of bottled water through worry about tap water pollution

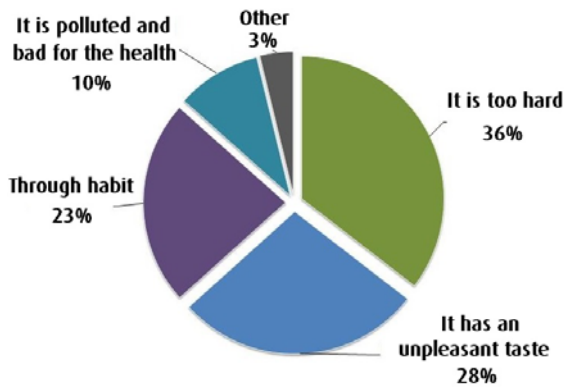


Thanks to the annual national accounts produced by INSEE, we know that the actual household consumption of bottled water amounts to €3,546 million. If we consider that this expenditure is carried out solely by the 25 million consumers of bottled water and then subtract the people that do so through worry about agricultural and industrial pollution from this category of the French population, we arrive at annual expenditure of €190 million due to worry about agricultural pollution and annual expenditure of €100 million due to worry about industrial pollution.

**10% of drinkers of filtered water are worried about the pollution of their tap water**

The domestic filtration of tap water (using a jug filter or a fixed filter system) is carried out in response to concerns similar to those shared by bottled water drinkers, but in different proportions. While an unpleasant taste is still mentioned by a large number of respondents, the main reason for using a domestic filtration system is excessively hard water. Next, in order of popularity are habit and the worry about tap water being polluted (Figure 4).

Figure 4 – Reasons for filtering tap water

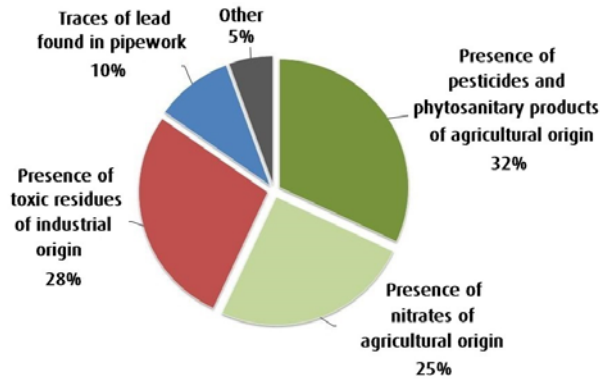


*NB:* The “Other” category also includes households that do not necessarily wish to consume filtered tap water but do so because their refrigerator is equipped with a built-in filtered water supply system.

Source: CGDD survey

For people that use a domestic filtration system through worry about their tap water being polluted, an analysis of the survey results reveals that, as for bottled water consumption, this choice is primarily motivated by the worry about pollution of agricultural and industrial origin (Figure 5).

Figure 5 – Type of pollution feared by people that filter their tap water



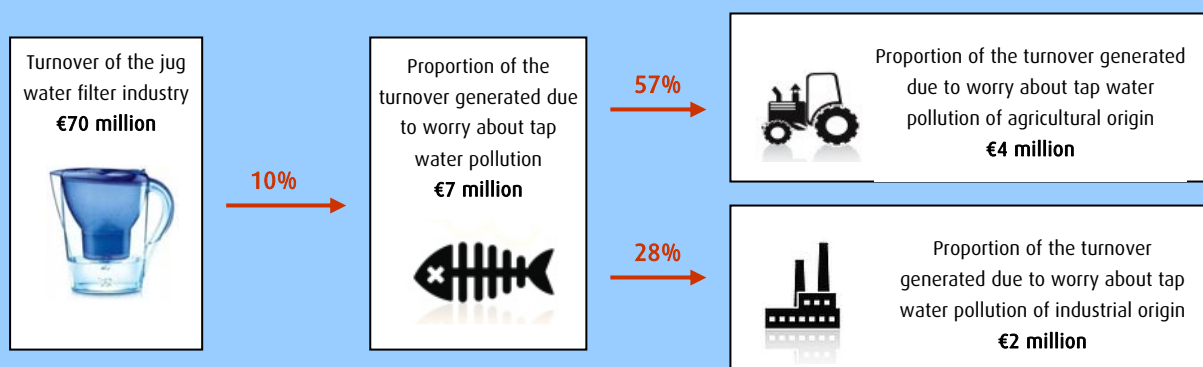
Source: CGDD survey

This fear drives households to invest in domestic filtration systems. Based on the data for the French market for jug water filters, the CGDD has estimated that these investments amount up to €4 million per year for agricultural pollution and €2 million for industrial pollution (Box 2).

**Box 2 – Expenditure on tap water filtration through worry about agricultural and industrial pollution**

Due to the lack of available data concerning fixed domestic water filtration units, the estimate was restricted to the French market for jug water filters. In 2010, this market generated €70 million of turnover. By applying the ratio of people who declare that they filter their tap water through worry about pollution (Figure 4) and then the ratio of people that are more specifically concerned about agricultural and industrial pollution (Figure 5) to this turnover, we arrive at expenditure of approximately €4 million per year on grounds of agricultural pollution and €2 million per year on grounds of industrial pollution.

Figure 6 – Expenditure on domestic tap water filtration through worry about agricultural and industrial pollution



### *A direct economic impact of agricultural and industrial pollution...*

In total, the worry about tap water being contaminated by residues of agricultural and industrial products causes 2 million French people to consume bottled water (for total annual expenditure of €290 million) and 1 million of them to use domestic water filtration systems (for total annual expenditure of approximately €6 million). These amounts are responsible of a direct economic impact of diffuse agricultural and industrial pollution on household budgets.

### *... that cannot be justified by the actual quality of tap water*

Although this expenditure is real and is growing on a yearly basis in line with the consumption of all types of bottled water by French people, it cannot be associated to the actual quality of the tap water supply. Indeed, recent studies on this subject show

that this quality is improving year after year and that nearly 98% of the French population currently have access to tap water of good quality throughout the year.

### *Spending on water purification is already high and is borne by the entire population*

The fact that tap water is already of good quality is largely due to the many treatments carried out by water authorities in order to eliminate this agricultural and industrial pollution. These treatments thus constitute another direct economic impact of this pollution, but this time it affects the entire French population via the water bill that everyone pays.

An initial assessment carried out by the CGDD in 2011, focusing solely on the agricultural dimension, had partially estimated its total cost to be between €600 and €1,100 million per year.

#### Box concerning the survey methodology

The CGDD survey was administered to a sample of 4,000 people that were representative of the metropolitan French population aged 18 and over. This representativeness of the sample was ensured by the quota method concerning the criteria of gender, age, profession, settlement category, region and housing occupation status, on the basis of the 2010 population census 2010 (source: INSEE).

The survey questionnaire, comprising around forty questions, consisted of two thematic sections: the first relating to the households' opinions about the status of water resources and the second concerning the consumption of drinking water. This publication is based on the results of this second section.

Data collection was supervised by the French Institute of Public Opinion (IFOP). It was carried out via a self-administered online questionnaire between Monday 8 April and Wednesday 1 May 2013.

#### For further information:

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*All of the results of the survey conducted by the CGDD can be found in the following document:*

[1] *Etudes & documents n°106, Juin 2014 – Ressources en eau : perception et consommation des Français* (Studies & documents no. 106, June 2014 - Water resources: perceptions and consumption of French people) – Survey results, CGDD March 2014

<http://www.developpement-durable.gouv.fr/Ressources-en-eau-perception-et.html>

*An initial assessment of all of the direct costs of a decline in the quality of water due to agricultural pollution can be found in the following document:*

[2] *Etudes & documents n°52 - Coûts des principales pollutions agricoles de l'eau* (Studies & documents no. 52 - Costs of the main types of agricultural pollution of water), CGDD September 2011 <http://www.developpement-durable.gouv.fr/Assessing-water-pollution-costs-of.html>



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