

Improving tap water quality in France: which basic factors influence decision-making by rural elected representatives?

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Abstract: Improving tap drinking-water quality in France: which basic factors influence decision-making by rural elected representatives?

In France, either mayors or presidents of intercommunal (inter-local authority) organisations are accountable for tap drinking water quality and for any investment needed to restore its quality. Basic factors that influence decision-making by elected representatives are of regulatory, economic, sociological and political relevance. However, comprehensive cost analyses for the subscriber, the community and the environment broadly speaking are currently lacking in France, although they are essential in informing individual and collective decisions.

Article:

During the 35 years I have spent working as a sanitary engineer in 7 départements (French equivalent of counties) for district directorate for sanitary and social affairs (DDASS) and regional health agency (ARS) administrations, I have run health-environment departments responsible for the regulatory sanitary control of mains drinking water (water intended for human consumption or WIHC). That work

involves the management of administrative procedures, action in case of accidental pollution, the identification of health problems related to the consumption of WIHC and above all the conduct of statutory analyses. I have had the opportunity to meet several hundred rural elected officials and have observed certain motives that lead them to make or not make decisions needed to ensure that the water supplied by the public installations for which they are responsible meets regulatory quality standards.

1. What are the responsibilities related to public drinking-water supply and how are investments funded?

In France, except where there is a franchise (which is quite rare), local authorities own the equipment (water intake, treatment facilities, reservoirs, supply networks) and are in particular responsible for decision-making related to quality standards laid down in France's Code of Public Health. Funding of the costs of preventive action, treatment, safety measures, etc. is often assisted by aid from water agencies or even département (county) councils; the remaining sums for which local authorities are liable are passed on in the price of water paid by subscribers to the water department. Before August 2015, the date of promulgation of the NOTRe (New Territorial Organisation of the Republic) law which attributed new competencies to regions and inter-authority cooperative organisations, 50% of France's population was supplied by 20,000 networks [1,2]. In France, there are major local disparities: distribution ranges from fewer than 10 networks in districts of high urban density to nearly 900 in mountainous areas [1,2]. Similarly, the quality of water supplied is not uniform across the country, since microbiological quality problems mainly impact on small supply units in rural or mountainous areas. Excessive levels of pesticides and nitrates are principally to be found in underground water in rural zones, resulting from intensive agriculture and/or stockbreeding [1,2].

2. How are public drinking-water quality control and public information managed?

Since 3 January 1989, the date when the European directive of 15th July 1980 was adopted into French law, monitoring of the quality of mains drinking water has been conducted according to European law. So WIHC – the most closely monitored resource for human consumption in France – is subject to regular health inspections that include:

- monitoring conducted by Persons Responsible for the Production and Supply of Water (PRPSWs): these are mayors, presidents of water-supply authorities and private operators awarded contracts for water-supply management;
- sanitary control implemented by regional health agencies, entirely independently of PRPSWs.

The quality of WIHC is assessed according to statutory ‘norms’ (quality limits and references) covering around sixty parameters (bacteriological, physicochemical and radiological). In France, the sanitary-control programme implemented by regional health agencies involves the collection of more than 312,000 water samples providing more than 16.5 million analytical results [2]. Where quality limits are exceeded, there is increased sanitary control, even for small authorities subject to limited sanitary control, enabling the monitoring of non-compliant parameters.

Regional health agency inspection data are public information and are made available on the Internet site of the ministry responsible for health (www.eaupotable.sante.gouv.fr), by display in town halls, from PRPSWs and in a report published by regional health agencies, which is distributed to subscribers (who are also local voters and taxpayers) together with water bills.

3. What aids or obstacles impact on decisions related to public water supply made by the elected officials of rural councils?

The decisions of elected officials responsible for drinking-water supply are influenced by social demand (including that of their electorate), their perception of risks (media, judicial, administrative, health, etc.), effects on water prices (particularly when decision-makers consume a large volume of water) and, secondarily, other less general criteria.

3.1 Is there social demand among rural populations for local elected officials to comply with quality standards applicable to public drinking-water supply?

- **Citizens generally take little interest in quality standards applicable to public drinking-water supply.** Unless there is a specific local context, populations very rarely express demand for WIHC that complies with regulatory quality standards, although subscribers receive annual reports on the quality of their tap water prepared by their regional health agency, showing any possible non-compliance. Interest in tap-water quality may temporarily be heightened by media campaigns launched by environmental organisations, consumer organisations or investigative television programmes, which often base their initiatives on the results of regional health agency sanitary control published on the Internet.
- **Today in the early 21st century, populations in general are not particularly conscious of links between health and the quality of the water they consume.** In the 1930s, the ravages of typhoid resulting from the lack of public water-supply networks was still topical and very clear to the population (table 1). Today, it remains an issue in certain overseas territories that have suffered from cholera epidemics (1991 in French Guiana and 2000 in Mayotte) and those where typhoid and hepatitis A

are still endemic. Generally, in metropolitan France, health problems related to tap-water quality are rarely reported and do not make the headlines, so the perception of risks is minimal. However, they can sometimes temporarily come to the fore in case of accidental pollution or unusual weather phenomena.

At the end of the 1920s, on the initiative of the Pont-à-Mousson company, the ‘Hygiène et Eau’ (Health and Water) committee was set up as a non-profit-making communication organisation. It published documents (brochures, postcards, posters, leaflets, maps, stamps, etc.) aimed at elected officials and the general public, and promoting drinking water, water purification and public health. They often used warlike language such as *“Public health through purification... trenches against epidemics”*.

In 1937, when 34% of communities were equipped with a public drinking-water supply network, in a brochure entitled *“And don’t forget that electricity can bring you drinking water”*, the ‘Hygiène et Eau’ committee put forward arguments that were closely related to health. *“France is a country with a low birth rate and high mortality. If the proportion of deaths were no higher in France than in the Netherlands, our population would increase by more than 300,000 each year. So we are all responsible for the struggle against excess mortality, which is both a human and a natural duty. While certain diseases cannot yet be fought effectively, we should at least eliminate those such as typhoid fever and waterborne diseases, from which it is easy to protect oneself. Where there is no hygiene, mortality increases – and there is no hygiene possible without water.”*

Table 1. Extract from the leaflet *“Et n’oubliez pas que l’électricité peut vous apporter l’eau potable”* (And don’t forget that electricity can bring you drinking water). [6]

- **WIHC is too expensive!** Generally, in their majority, the French feel that the cost of telephony and the Internet are lower than the cost of water supply [3]. Unlike telephone bills which are systematically monthly, water bills (which also cover the management of waste water) are not always monthly and are quite commonly addressed to subscribers once or twice a year. This being the case, consumers have the impression that mains water is expensive. The same is true of purchasers of bottled water, who buy a pack of water for a few euros each week without thinking about the monthly and annual costs involved.
- **Is the quality of mains drinking water lower than that of bottled water?** Certain subscribers see mains drinking water as something that is imposed on them, something they have not chosen. They do not always know where it comes from and do not always trust it, often complaining that it is hard and tastes of chlorine. When they purchase bottled water, their choice may be influenced by its price and packaging, and advertising campaigns praising its purity. They are unaware that if certain highly mineralised mineral waters were supplied on tap, they would be judged non-compliant with regulations applicable to mains drinking water. Indeed, mineral waters are covered by a specific European directive which, subject to special authorisations, allows them to have higher mineral contents than tap water.
- **There is a genuine lack of knowledge about the local origin of tap water. Also, myths circulate:** half the French wrongly state that waste water is re-treated in plants and turned directly into drinking water [3]. This mistaken idea could only have been encouraged in 2007 by an advertising campaign for Cristaline spring water, which used three slogans, one of which stated “I don’t drink the water I use,” illustrated by a lavatory bowl with

a cross over it. In April 2015, the company was fined 100,000 euros by the criminal court of Paris on the grounds that its 2007 advertising campaign denigrated tap water [4].

3.2 How do rural elected officials perceive the usefulness of investment to ensure compliance with WIHC norms?

Elected officials are first and foremost citizens and may, where the quality of WIHC is concerned, have the same perceptions as the general population, including their voters. Also, as political decision-makers, they can be influenced by other arguments (table 2).

The investment is relatively imperceptible for subscribers, who are also voters.
Increasing the price of water is politically sensitive.
Income is falling because water consumption is dropping.
Subsidies are declining more and more.
Administrative constraints are increasingly rigorous.
Standards applicable to drinking water are getting stricter.
There is no social demand for compliant tap water.
Prevention (e.g. perimeters of protection) imposes heavy constraints on economic activity, agricultural or not.
The population buys (or can simply buy) bottled water.
There are many advertising campaigns for bottled water, claiming it is good for health, has a better taste and smell, is safer, etc.
People who drink 'unsuitable for drinking – non-compliant' water do not fall ill more than other people.
Tap-water consumption in France no longer causes illness.
Nobody drinks tap water any more.
Tap water is no longer suitable for drinking, it is not compliant anywhere (historical inevitability).

Table 2. Examples of arguments often given by elected officials to explain their lack of decision-making related to the quality of drinking water.

- **Does supplying water that does not comply with regulations involve risks?** There are a number of potential risks, but they are not at all clearly perceived by certain decision-makers: i) the individual criminal responsibility of the decision-maker, ii) the fact that France may be judged to be in breach of the European directive, iii) local or even national media campaigns, iv) hostile campaigns on social media...
- **Is it politically advantageous to make investments to ensure that mains drinking water complies with standards?** Unless social demand or risk perception is high, elected officials running small local authorities are often reluctant to invest, since they wish to avoid raising the price of mains water, a politically sensitive issue. Today, it is more advantageous to invest in selective waste collection and initiatives related to sustainable development than in improving drinking-water quality, which is not a particularly perceptible investment for voters. They take it for granted to such an extent that they may tacitly consider that requirement to already have been met. In that case, why be willing to pay more for something that already exists and has worked for decades?
- **Local authorities no longer have the resources to comply with mains-water quality standards.** Today, many subscribers save water. Some major consumers use their own resources and this reduces the income of local authorities. In certain cases, given the perception that water is already expensive and/or a lack of funds due to its very low price of sale, the ability of local authorities to invest can be reduced. At the same time, public subsidies are falling and/or conditions for obtaining them are increasingly draconian. In many cases, the insufficient replacement of mains networks in the past will also be a major drain on the budgets of local authorities in years to come. Application of the NOTRe law is liable to improve the

investment capacity of joint authorities. Under the Local and Regional Collectivity Code and the Public Health Code, local authorities are required to supply mains water that complies with regulatory standards determined according to the latest scientific evidence.

- **Why invest to ensure the compliance of mains drinking water** when populations informed of its non-compliance purchase at their own expense and consume bottled water (or install individual treatment systems that are rarely correctly maintained)? Refusing to take responsibility for supplying drinking water to households means they must pay twice: for the non-compliant mains water and for bottled water. Non-compliant tap water can lead informed people, who may be poor and/or elderly, to pay a high price (often 1 litre of bottled water = 1 m³ of mains water) and carry packs of bottled water that weigh nearly 10 kg.
- **Is the problem of non-compliant tap water solved by the purchase of bottled water?** Mains water does not just supply households. It also supplies collective services such as dialysis centres, healthcare establishments, kitchen facilities and catering organisations. These, of course, cannot use bottled water as their drinking-water supply. Similarly, agri-foodstuffs industry exporters – particularly abattoirs – very often have to certify that they use water that complies with the regulations applicable in their sector. Other industrial activities unrelated to agri-foodstuffs may have to comply with technical specifications and/or quality procedures that also require a compliant water supply.

4. What prospects for the future?

Within the French framework – which identifies the responsibilities of local authorities, delegates, funders and inspection services in the

field of public water supplies – an additional approach can be implemented to influence decision-making.

4.1 The publication of the new European directive on drinking water

On 1 February 2018, a press release from the European Union presented the planned revised European Directive on the Quality of Water Intended for Human Consumption. In that document, which commented on the event, there were certain favourable remarks related to WIHC [5]:

- “This will be contributing to the environmental goals of reducing unnecessary plastic use and limiting the EU's carbon footprint, as well as to the achievement of the Sustainable Development Goals.”
- “Thanks to increased transparency it will also empower consumers and push them towards more sustainable choices, for example using tap water.”
- “According to estimates, the new measures would reduce potential health risks associated with drinking water from 4% to below 1%.”
- “Lower consumption of bottled water can in addition help households in Europe save more than €600 million per year. With improved confidence in tap water, citizens can also contribute to reducing plastic waste from bottled water, including marine litter. Plastic bottles are one of the most common single use plastic items found on European beaches.”

4.2 The contribution of economic analyses

General economic analyses would be a useful additional aid to individual and collective decision-making. Such research should take into account at least:

- The direct costs to subscribers who purchase bottled water while continuing to pay for a WIHC which they do not drink, but

continue to use to prepare food and for all other sanitary needs;

- Indirect costs related to the management of health problems linked to the consumption of non-compliant water in case of accidental pollution, but especially where there is chronic non-compliance;
- The indirect costs to certain subscribers (industry, artisans, farmers, etc.) who can lose business or certification because they do not have a compliant water supply;
- Indirect environmental costs resulting from the manufacture, transport and disposal of plastic water bottles: consumption of fossil energy, emission of greenhouse gases, carbon footprint, contamination of rivers, beaches and oceans.

In certain rural zones, it is essential to avoid populations becoming accustomed to non-compliance with French law when mains water supplies are chronically non-compliant. There is a risk that in coming years we will observe the emergence of waterborne pathologies that could have been avoided. That disastrous observation would inevitably lead to a crisis of public trust in decision-makers, private operators, public funders and regional health agencies responsible for sanitary control. In terms of public health and the failure of prevention, there would be major consequences if the French population should itself with better access to mobile telephony than to drinking water, as is the case worldwide, with 7.4 billion people currently having access to mobile telephony compared to only 6 billion with proper drinking water supplies.

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