

Water Supply: The Study of Public, Private and Mixed Management Policies

Young Managers

Col·legi Mare de Déu del Carme

Spain

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1. Abstract

The way water supply is managed in a city is always a cause for discussion. Depending on its public or private management, the price, the taxes to be paid by the citizens, the environmental impact and the quality of water may vary. The management of the water supply in our city is currently private but the City Hall officials are trying to make it public, so there are jobs and company procedures at stake.

With our project we are revising the way the water systems are managed in other cities which in some cases are very similar to ours (living conditions and weather). We have chosen a city in Japan (Nagoya¹) and a city in The Netherlands (Eindhoven²) and we aim to find out which city has the most appropriate water management and what the reasons for it are. We will take into account the water bill to be paid by the inhabitants in these cities as well as the quality, taste and sustainability level offered with the service.

Our findings will be stated in a report that will be sent to the water company in our city and also to the officials in the City Hall of our city, Terrassa³, in the hope that we can contribute to help them reach the best agreement for the city and for all the users of the service.

2. Keywords

Water management, water taxes, city policies, water quality, pricing

3. Purpose of the research

The management of the water services in a city is one of the most important aspects of the city administration.

Water is a basic and necessary utility and without it, life would be not possible for the inhabitants. Companies also need water to make their factories function and electricity is produced from it. In some countries or cities, water can be a very expensive source depending on the amount of natural water they get from rain or the way they exploit subterranean waters. The European Parliament adopted a Directive in which it was stated that “... *water is essential for human, animal and plant life and it is an indispensable resource for the economy*”⁴

Such an important resource makes city administrators wish to have control over its management. Our city, Terrassa, is no different in this matter and is going through a very long and hard process of discussions over the water management policies. Currently, the water management services in our city are run by a private company, **Mina Aigües de Terrassa**. However, the City Hall, which is run by the Socialist Party, is fighting hard to gain the management of the service and make it a public company. The decision was taken in September 2017 when 20 out of the 27 representatives of the City Council voted for a public management of the service.

But the change of hands has not happened yet. There have been three extensions due to the difficulties in dealing with problems with the staff becoming public servants, infrastructures, political movements, technical and distribution problems and setting the price of the water service.

Our project aims to compare the three possible ways of water control: public, private or mixed management. In order to do this, we have conducted interviews with the former Mayor of Terrassa, who had the main role in the issue, the President of the private company Mina Aigües de Terrassa and a Technician from Agbar Waters of Barcelona (Mixed management). In our conclusions we want to reach some recommendations on which is the most appropriate way of water control, taking into

¹ City located in the Pacific Coast in the region of Chubu, in the centre of the Honshu Island.

² City located in the Brabant province, on the South of The Netherlands.

³ Town located in the Barcelona province (Spain). It has 215.121 inhabitants and it is ruled by the Socialist Party.

⁴ European Parliament. 2000. “Water Framework Directive”. (WFD)

account all the positive and negative characteristics of each system.

4. Method of research

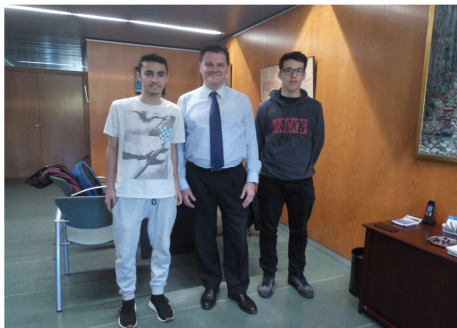
- . Interviews with key stockholders
- . Examination of water bills in different cities
- . Surveys to citizens of Terrassa

4.1. Interviews with key stockholders

In the development of our research we conducted three interviews with key people in the different management models:

Private and current management of water supply in Terrassa

Mr Josep Lluís Armenter, General Manager, Mina Aigües de Terrassa



Public management option

Mr Jordi Ballart, Former Mayor of Terrassa (Socialist Party)



Mixed and current management of water supply in Barcelona

Ms Francisco Aimerich, Technical engineer for water treatment, Agbar waters of Barcelona



The objective in all these interviews has been to obtain the different points of view of the administrators on the different water management systems, keeping in mind that there is not a perfect option and that there are many elements involved in all the decisions to be taken: economic interests, political movements, sustainability issues and consumer habits, among others.

From these interviews we have extracted the main information and we have analyzed it in a critical way, trying to understand each point of view. We have also compared the results with the opinions of the citizens of Terrassa since they are the final clients who use the water and ultimately pay for it. The water consumers, either individuals or companies have also a lot to say in this matter, but sometimes they are the least heard in the whole decision process.

4. 2. Examination of water bills in different cities

The price of the water is a highly significant aspect in all these fights for the water supply management. Water is a basic need and it should not be owned by anyone. However, water distribution, treatment and management have to be financed by taxes and bills. The most suitable solution for the consumer is to pay as little as possible and to receive a high quality water service.

4.3. Surveys to citizens of Terrassa

In all these discussions and fights, citizens have not been taken into account and their rights and opinions have often been ignored. We decided we needed to conduct a survey to get to know their points of view and also to find out if they were aware of these discussions and up to which point. It is our wish to forward their views and our conclusions of the survey to the parties involved in the process.



Figure 1: Some of the citizens who took the survey

In this project, we will analyze the three possible water management systems and decide if one of them is the optimal choice or the one that would be the perfect solution by cherry picking the best from each one.

5. Results of the research

5.1. Background

Terrassa is a city located in the province of Barcelona (Spain). It has 210.000 inhabitants, being the 4th biggest city in the province. Its water supply comes 20% from water wells and 80% from the Llobregat River. These river waters arrive to the city through a canalization which was built after the Spanish civil war (1940) thanks to the help of some local wealthy factory owners in the area.

Since the 10th of December 1941 the water system of Terrassa has been managed by a private company (Mina Aigües de Terrassa, S.A.). At that time a contract for the water supply concession was signed for a duration of 75 years. When the period for the concession was about to finish the left wing parties in the local administration started to advocate for a change of hands, highlighting that water is a basic need and it cannot be privately managed.

The discussions started with a plenary session (07/09/2017) in which 20 out of the 27 city councilors voted for a public management type.

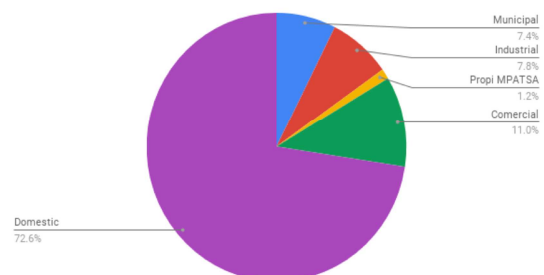
5. 2. Facts about the use of water in Terrassa

. The average use of water per capita in Terrassa is 170 litres per day⁵. The average of similar cities in Catalonia is 200 litres and 230 litres in Spain.

. The percentages of different uses of water in Terrassa are the following:

- Public services :(gardens, cleaning, public pools, etc...) 7.4%
- Industrial use: 7.8%
- Private use of managing company: 1.2%
- Comercial use: 11%
- Domestic use: 72.6%

Uses of water in Terrassa



⁵ Data extracted from the Memorandum published by the City Hall on September 7th, 2017

. The amount of non-registered water in the system (non-registered consumption + water leaks) is 20%. The average in similar cities in Spain is 25%.

	Terrassa	Barcelona ⁶	Eindhoven ⁷	Nagoya ⁸
Type	Private	Mixed	Public	Mixed
1m3	1.88€	2,67€	0,82€	€1.28
	-	+ 0.79	-1.06	-0.68

Figure 2: Comparison with other cities in the world

5.3. Proposal for the public management of the water supply



Figure 3: City Mayors advocating for the public system

5.3.1. Water Quality

Given the fact that the water supply comes from different sources (wells and river), the public system aims to provide the same high quality water to all the citizens. In order to maintain the quality of the water, it is necessary to eliminate the polluting agents, the quantity of nitrates and the excessive amount of THM (Trihalomethanes⁹). The THM takes place in the process of potabilisation of water, when the organic substances which have not been treated react with the chlorine. THMs are considered dangerous to the human health and the environment.

5.3.2. Guarantee of Supply

The water supply has to be guaranteed to all the citizens, either for personal or for industrial consumption. Due to global climate change this will be a key element in the near future since the water resources will diminish. For this reason, it will be important to:

- Maintain quality standards of water channelling from the river Llobregat
- Ensure appropriate water storage
- Raise awareness of a responsible use of water

5.3.3. Quality of Service

The quality of water in the city should be secured through sensible investments in resources to improve the water treatment and distribution, without neglecting the need for constant innovation and research.

5.3.4. Transparency

It is a duty of the public management to inform the citizens about all matters that affect them. The public system will guarantee information so that all the citizens can understand the use of their taxes.

5.3.5. Participation

Based upon transparency, the public system will create a governing body which will be formed by the different social, economic and political agents of the city to guarantee a democratic participation in the city.

5.3.6. Social Aims

Even though an improvement of the infrastructures could cause an increase in water pricing, the public system should ensure every effort is made to avoid a dramatic increase in the water bill. There should be a system of social discounts for families, retirees, the unemployed and the disabled.

5.3.7. Sustainability Objectives

In order to maintain the good quality of the water, public campaigns will be needed to avoid pollution from factories and an intelligent use of resources. Citizens

⁶ Data obtained from www.aiguesdebarcelona.cat

⁷ Data obtained from www.brabantwater.nl

⁸ Data obtained from Nagoya City Waterworks & Sewerage Bureau www.city.nagoya.jp

⁹ Chloroform, bromodichloromethane, dibromochloromethane, and bromoform

should also be aware of consumption and leaks should be avoided. Rain water must be made better use of.

5. 3. 8. Good use of funds

The possible profits that the water management could produce have to be used for the common good of the water system and should never contribute to other sectors of business.

5. 3. 9. Employees Policy

The public system of water will be dealt with by public servants.

5. 4. Proposal for the private management of water supply



Figure 4: Mina d'Aigües de Terrassa

5. 4. 1. Long experience in the service

Mina Aigües de Terrassa has been around for 100 years so they have a solid experience in its management

5. 4. 2. Infrastructures

The Mina has well-established structures for water management and distribution and it would be very expensive for the public sector to build new ones. They calculate that the compensation to be received would be around 50 million Euros, and that would have an impact on the water bills. The wells in the city also belong to the private water company, so the public system would have to buy them or rent them.

5. 4. 3. Employees

Mina has currently 109 employees and the public system would not be able to absorb all of them. That would bring layoffs and early retirements for some of the workers.

5. 5. Proposal for the mixed management of the water supply



Figure 5: Agbar, Aigües de Barcelona

- . Public water management uses the infrastructures already existent in the private system. This fact will avoid an increase in the price of water (water bill)
- . The already existent water meters in each of the households and companies would not have to be changed and that would also avoid an unnecessary expense
- . In a mixed managed water company, there is place for other types of companies to hold some shares. This would bring more investment and possibilities of improvement of the water supply. However, there is a danger of not using the profits for the right aim

- . In the mixed management system, there will be different points of view. It would not all depend on the political party in power and on the other hand the private interests would be supervised by the administration.

5. 6. Citizens' points of view

With water management being such an important aspect of the daily life of the city, we were very interested in

knowing what the citizens knew about the discussions and their opinion on it. The results were the following:

- . A total of 170 people were asked
- . 120 (70.6%) citizens were aware of the discussions
- . 50 (29.4%) citizens did not know about the issue

When asked about their perception of the relationship between cost and quality of the water, choosing a value from 1 to 10, the results are the following:

- . 22.3% of the citizens valued it lower than 5
- . 47 % of the citizens valued it with 5-6
- . 26.5% of the citizens valued it with 7 – 8
- . 4.2% of the citizens valued it with 9 - 10

. A private management system could use the budget and profits from the water use to invest in other types of business, even though water is a basic need and a human right

. The water prices have not been reduced in the case of deprived households, even though water is a public commodity

. Privatization is related to the existence of business opportunities, those involving pressure from the economic and political powers to the administrators

. Communication channels should be created for the citizens to participate in the decisions taken by the public management of the water supply

. Citizens should be able to contribute with innovation ideas and proposals in order to improve the levels of satisfaction in the city.

If we summarize the answers given in the surveys in a chart, we can find the following:

PRIVATE/ MIXED MANAGEMENT SYSTEM	PUBLIC MANAGEMENT SYSTEM
Lack of transparency	Citizen participation Transparency
Profit sharing among the stockholders	Investment in improving water quality and service
Water as merchandise	Water as basic need and human right
Private pricing	Municipal Taxes
Main objective: profit increase	Main objective: service to improve sustainability and social benefits
Price setting	Prices by sections depending on the social and economic situation of the customer

Conclusions

Taking into account that the water management system has become an issue which goes beyond the citizens' interests, we have been able to conclude that it has become a political and economic fight to gain power over the water resources.

In the process of our research, some unethical aspects such as bribes, political support in exchange for money and other forms of extortion have been mentioned but we have chosen not to allude to them in this project as we did not have any proof of it whatsoever.

We are very pleased at being able to interview the top people involved in the struggle for the water management in our city, and we have been able to think critically about their answers, trying to understand the different ways of doing and always seeing positive and negative aspects in all three of them.

As a conclusion, we want to highlight that water is a basic human right and an essential need for life and we all should be responsible citizens to respect this right.

We are also very pleased to be able to participate in conferences like the “Water is Life” to contribute to the preservation of our planet, a duty we all have as world citizens.

Acknowledgments

Mr Jordi Ballart (Former mayor of the city of Terrassa)

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Ms Rosa Pons (Programming Services, Mina Aigües de Terrassa)

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Mr Francesc Rubio (Headmaster and Project tutor, Mare de Déu del Carme)

Ms Leonor Clares (Deputy Head and Project Tutor, Mare de Déu del Carme)

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ABUKHATER, Ahmed (2013). Water as a catalyst for peace: Transboundary water Management and conflict resolution. Routledge, New York.

Links of Interest

Civil Platform for Water Management

<http://www.aiguaesvida.org>

Mina, Aigües de Terrassa

<http://es.aiguesdeterrassa.com>

City of Nagoya: Utilities: Water, Electricity and Gas

http://www.water.city.nagoya.jp/subsys/price_simulation

Ajuntament de Terrassa (City Hall)

<http://www.terrassa.cat/aigua>

http://www.terrassa.cat/documents/12006/15032606/Memoria_gestio_aigua_c.pdf/cfc4f11e-a018-4a43-9d35-e8771fde8845

http://www.terrassa.cat/documents/12006/15032606/Annexes_VOLUM_1c.pdf/c5d3e779-55d2-439c-90a7-b073eff4b380

http://www.terrassa.cat/documents/12006/15032606/Annexes_VOLUM_2c.pdf/58b63e08-9d35-42fc-bffc-e674ff420af7

http://www.terrassa.cat/documents/12006/15032606/Annexes_VOLUM_3c.pdf/54e98d44-2b90-4ce7-868c-d07cf303b330

http://www.terrassa.cat/documents/12006/15032606/Annexes_VOLUM_4c.pdf/e7b8f9a2-b86c-4cae-a693-dde1eba76468

Nació Digital (Digital Newspaper of Terrassa)

<https://www.naciodigital.cat/latorredelpalau/noticia/57737/nova/prorroga/servei/amb/mina/aigues/terrassa/sera/inevitable>

<https://www.naciodigital.cat/noticia/121717/empresa/mina/vol/societat/mixta/gestionar/aigua/terrassa>

Water Resources Management in Japan. World Bank Group

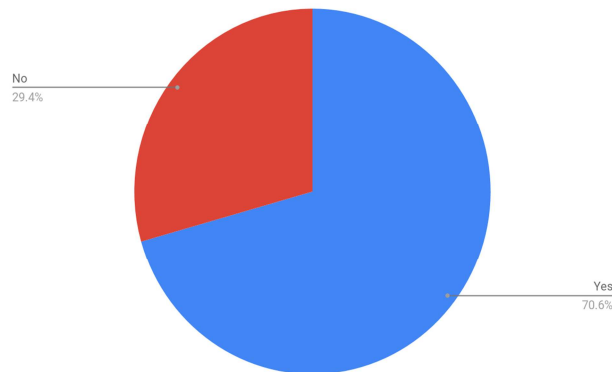
http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/WRM_Japan_experience_EN.pdf

Brabant Water
<https://www.brabantwater.nl>

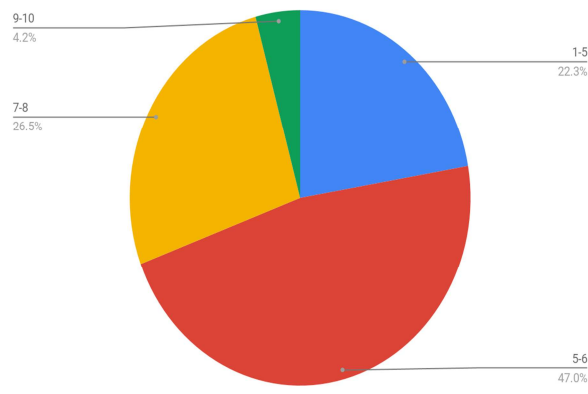
UN Water United Nations
<http://www.unwater.org>

APPENDIX I

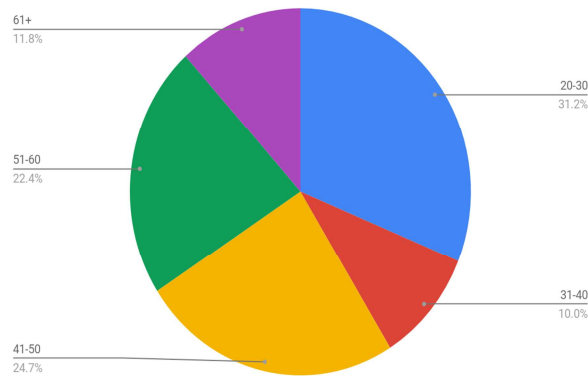
Do you know which is the current water management system in our city?



Do you see a relationship between price and quality of the water in Terrassa? (1 - 10)



How much do you pay for the service of the water? (quarterly)



APPENDIX II

Questions included in the interviews

1. Given the fact that water is a basic need, what is the reason for sharing such little information about its management among the citizens?
2. Which are, in your opinion, the weak points of the private and the public management of water?
3. How are the profits from water management invested?
4. Are there any issues with the water infrastructures?
5. If the water management system becomes public in a near future, what is going to happen to the employees of the water private company?
6. What the change of water management very costly?
7. Are there any investments allocated to improve water quality?
8. Would there be any consequences in the water bills if the water management goes through a change of hands?
9. Do you think it would be important for the citizens to have a saying in this matter?
10. Would it be possible a system where public and private management could coexist?