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**Challenges and opportunities facing water-service
co-operatives: cases from Argentina and Finland**



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Challenges and opportunities facing water-service co-
operatives: cases from Argentina and Finland

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Article 2

Water Cooperatives in Tampere, Finland: the case of Pispala

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Abstract

Pispala Water Cooperative was established in 1907 in Pispala, next to the city of Tampere, Finland. The area is located along a ridge formed during the last ice age. The ridge was not a good place for a well and the inhabitants of Pispala were tired of retrieving water from a distant water source, so they searched for a solution for their water supply problem. When Pispala Water Cooperative was created, it took its water from a spring located in lower Pispala, or Tahmela, which provided water to the whole of Pispala until 1966. Although this first formal water cooperative was established in a suburban area, early water cooperatives in Finland were typically solutions for domestic rural water supplies, especially for the needs of cowhouses. In the hilly Pispala, the cooperative was established for water supply only, not for wastewater services.

Keywords: water cooperatives, community water supply, Cooperatives Act, Tampere, Pispala, Finland.

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Resumen

La Cooperativa de Agua de Pispala fue creada en 1907, en Pispala, cerca de la ciudad de Tampere, Finlandia. El área está situada en una elevación rocosa formada durante la última época glacial. Las características del terreno no eran adecuadas para la perforación de pozos lo que obligaba a los habitantes de Pispala a obtener el agua de una fuente lejana, por lo cual decidieron buscar una solución para el problema. Al crearse la Cooperativa de Agua de Pispala se utilizó una naciente localizada en la zona baja de Pispala, conocida como Tahmela, y esa fuente proveyó agua para toda la población de Pispala hasta 1966. Aunque esta primera cooperativa formal se estableció en un área suburbana, las primeras cooperativas de agua en Finlandia fueron típicamente dedicadas a la provisión de agua en zonas rurales, especialmente para la cría de ganado en establos. En la rocosa Pispala, la cooperativa tenía la única función de proveer agua a la población, sin servicios de saneamiento.

Palabras clave: cooperativas de agua, servicios de agua comunitarios, Ley de Cooperativas, Tampere, Pispala, Finlandia.

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Introduction

There is more than enough water in the world for domestic purposes, for agriculture, and for industry. The real problem lies elsewhere. The World Water Development Report 2003 noted that the major problem of the water and sanitation sector could not be reduced to the lack of water and that the main “tragedy” was “poor water governance” (UNESCO 2003). Unfortunately, that is still true today. From another angle, various kinds of solutions are needed because living conditions and needs are different in different places. In this regard, in many countries water cooperatives have proved to be a good solution for domestic water use in growing suburbs, one example being Finland.

Finland is quite a unique country in Europe due to its water resources. The country has some 56,000 lakes with a minimum area of one hectare and has a total of around 200,000 lakes. Groundwater occurs in alluvial eskers formed during the ice ages, the last of which ended some 10,000 years ago. Areas lower than 50-60 metres above sea level have problems with water quality due to geological reasons. In such areas bigger cities use surface water for their water supply or acquire their raw water from sources further away. Nowadays some 60 percent of the population use natural groundwater or artificially recharged water sources.

The city of Tampere is situated approximately 140 kilometres northwest of Helsinki, the capital of Finland. The city was established in 1779 along rapids between two lakes, Näsijärvi and Pyhäjärvi, with an elevation difference of 18 metres between them. The centre of the city is traversed by the nearly 1-kilometre-long Tammerkoski Rapids around which the city and its industry originally grew up. The rapids, running from north to south, break an esker formation separating the lakes. The esker is one of the highest traverse ridges in the world formed during the Ice Age. For long, Tampere used to be the centre of Finnish industry which is also reflected in its nickname “Manse” which derives from Manchester, the traditional English industrial centre. Many industries and factories established in Tampere from the 1830s to the 1950s were among the first of their type in Finland. In later years, several high-tech innovation “firsts” have also been launched in Tampere.

The history and development of Tampere have been largely shaped by issues related to water and water management. The city was established along the rapids that cut their way through a glacio-fluvial esker between two large lakes some 7,500 years ago. The availability of water power and lakes suitable for waterborne transport made the Tammerkoski Rapids and its banks a favourable location for a growing town. (Katko and Juuti, 2007). The first municipal “water pumping system” in Tampere was built in 1835. It had a German-made iron pump upstream of Tammerkoski Rapids which pumped water through a wooden pipe to a well in the market square. The system was a failure, but it was only after the destruction caused to the city by the “great fire” of 1865 that the piped-water issue was taken up again. The industrialist Wilhelm von Nottbeck suggested to the City Board that a privately-owned waterworks should be constructed for the city. Von Nottbeck was the owner of the biggest industrial enterprise in Tampere, the Finlayson Mill. Since the proposed privately-owned waterworks would have meant quite a big financial risk to the city, the Board rejected the proposal and decided that the city would build its own piped-water system.

Subsequently, the city sought expert knowledge and contractors from the private

sector, such as Mr. Malakias Pasi in 1874. The following year the City Board decided “to submit the piped-water issue to a committee for examination”. This meant the start of a new era in the history of water supply in Tampere: ever since all related plans and projects have been initiated by the city. In 1882, Tampere’s waterworks was inaugurated. It was gravity-operated, and it was only a temporary solution because the city was growing fast. The service area only included the city centre, and this was also the case when a more modern high-pressure waterworks was completed in 1898.

The peripheries of Finnish cities were not serviced for decades and relied on wells and latrines for long. However, the inhabitants of the peripheries were not necessarily in a worse position than those living in the city. They largely escaped the great typhoid epidemics that of 1916-1917 in Tampere, mostly due to their isolation³. Sections of surrounding municipalities have often been incorporated into the cities over the years.

The emergence of water cooperatives in Finland

Community water supply cooperatives (co-ops) are predominant in rural areas of many developed countries such as Canada, featuring around 200 co-ops (Bakker, 2007), and Finland, with around 1,500 co-ops (Pietilä and Vihanta, Article 1 in this collection). Finland is quite likely the country with most water cooperatives in the world. The concept of cooperatives was established in Finland with the foundation of Pellervo, the Confederation of Finnish Cooperatives, in 1899. Hannes Gebhard (1864-1933), considered to be the father of the Finnish cooperative movement, was the founder and managing director of Pellervo. The first Cooperative Act in Finland was enacted in 1901. The first registered, official consumer-managed water cooperative was established in 1907 in Pispala, next to Tampere.

The case of Pispala

Pispala has a long revolutionary history. During the Finnish Civil War of 1918, which followed the country’s independence from Russia in 1917, Tampere was a “red city”, a working-class city, and Pispala was one of the battlegrounds in the war. Pispala had been built shortly before the war as a neighbourhood for workers. It was quite chaotically built, full of small wooden houses. Even today, Pispala remains a nurturing place for collective activities and is home to many self-organised activities such as the Rajaportti Sauna, the oldest public sauna in Finland, the Vastavirta club, owned by a punk rock co-op, Hirvitalo, home to the Center of Contemporary Art, Kurpitsatalo (The Pumpkin House), that hosts the community’s garden movement, and the communally self-organised library next to Hirvitalo, which has been independently kept alive after the City Council closed the local branch of the City Library (Takku, 2018).

In relation to water services, Pispala is located along a ridge formed during the last

³ A somewhat similar case occurred in 1892 in Altona-Hamburg, Germany, where people living in adjoining areas were saved from cholera depending on whether they drank treated or untreated water. A system does not necessarily have to be of a high technical level, if the water source is protected or isolated. But surface water must be treated (Juuti 2001; Evans 1987).

ice age. Its hilly location was not a good place for a well and the inhabitants of Pispala were tired of retrieving water from distant water sources, so they searched for solutions to their water supply problems (Juuti and Katko, 1998; Arvonen *et al.* 2017). There is a spring in lower Pispala, or Tahmela, and most efforts were centred on tapping this source, which eventually would become the main water source for the whole of Pispala until 1966.

Picture N°1. Tahmela spring



Source: Tampere City photo archives.

In the late Nineteenth Century, August Koivunen (1860-1938), a mechanic and entrepreneur, started several business operations to tap Tahmela spring, firstly as an energy source. He rented the spring from Pispala House in 1891 and built an apartment and workrooms (*tilalle a workroom*) for himself next to the spring. Koivunen embanked the spring and built a waterwheel to power a mill for grinding corn, but the power of the waterwheel was not sufficient. He also tried other business activities until in 1896-97 he proposed the idea of pumping water for human consumption. However, pumping required to overcome the difference in altitude from the spring to the top of the ridge, which is 83 metres high, within a distance of 320 metres. The villagers of Pispala called an expert engineer from the Huber Engineering Company to help, who suggested that it was not possible to rise the water rise to the top of the ridge without a steam engine. Koivunen started to experiment and finally managed to rise water with the help of a water wheel in 1905. However, the business failed and Koivunen went bankrupt and had to sell his water operation to a local shopkeeper, Mr. Ahlstedt. Shortly afterwards, the

private operation was taken over through the creation of the Pispala Water Cooperative in 1907. The lease of Tahmela spring was moved to the cooperative on 11 May 1907 (Juuti and Katko 1998). The cooperative was established for water supply only, not for wastewater services. The water distribution system of the cooperative was first based on the tarred tree pipes. Tree pipes were gradually replaced with iron pipes starting from the 1930s.

Picture N° 2. Installing the water mains.



Source: Tampere City photo archives.

In the users' opinion, water was of good quality and it tasted good. The cooperative did not test the quality of water. A municipal health officer however performed 2-3 tests yearly. The spring and the tank were cleaned every June, around Midsummer time. In his last poem called "Happiness", published the day he passed away, Lauri Viita described his childhood summers in Pispala in the 1920s, referring also to the water service of the town:

Narrow path from well to door / overgrown with grass. / In front of a window / a withered apple tree. / Rucksack hanging by the door / with a bird's nest inside. / When I'm dead and gone. / Summer goes on. Sweet summer (cited in Juuti and Katko 1998, 86-87).

Picture N° 3. Water test in the year 1952.



Source: Tampere City photo archives.

Picture N° 4. Pumping station of the Pispala water cooperative in 1952.



Source: Tampere City photo archives.

Picture N° 5. Pispala water cooperative got a new pump in year 1956. Mr. Wilen was the only permanent worker.



Source: Mr. P. Wilen.

Although the pioneering Pispala Water Cooperative was established in a suburban area, early water cooperatives were typically solutions for domestic rural water supplies, especially for the needs of cowhouses (Katko, 1996). Also, in addition to Pispala, two other built-up areas of the Teisko-Aitolahhti rural district, which nowadays is part of Tampere, have water supply and sewerage systems run by the city. In other sparsely populated areas water supply and sewerage continue to be provided through cooperatives or by individual property owners themselves. Pispala was eventually incorporated into Tampere in 1937, and the municipal waterworks assumed control of that particular system in 1962. By then, the cooperative had come to the conclusion that it would not be able to make the necessary future investments to keep running the service. It was short of money because it charged very low rates, and all the main water pipes needed maintenance or replacement.

In 1961, a year before the Pispala Water Cooperative became part of Tampere Water Works, there were 603 houses and 185 members in the cooperative. There were 328 houses with a water meter, while others paid a flat rate according to their individual agreements. The water rates were collected twice per year. During the last years of the cooperative society in the early 1960s, the daily water consumption was 350-600 cubic metres. A considerable factor in the water consumption was the number of saunas, which increased water consumption, especially on Saturdays. The possession of the water works was transferred to the town in July 1962. The price was 13,365,000 Finnish marks (approximately 42 thousand US dollars at the time), of which the town paid 10 million (approximately 31 thousand USD) in cash and the rest through an arrangement in

which the town paid the pension of two employees of the cooperative. The operation of the water works after the takeover first continued with no changes, apart from the water rates, which were raised. Pispala was later connected to the water and sewer networks of the city water works (Juuti and Katko 1998, 74-87).

There were other cases not too dissimilar from Pispala's in the Tampere region that can be mentioned. For example, in the rural municipality of Messukylä, east of Tampere, a small informal water cooperative was founded in 1928. It was complemented by a more formal cooperative that covered the central municipal area in 1937. Ten years later, after the end of World War II, Messukylä was merged with Tampere. The city expanded its water and sewage network to Messukylä, and in 1954 the water cooperative started to distribute water bought from the city network until 1960, when Tampere Water Works took over its operations. However, despite the trend of cooperatives' takeovers by Tampere Municipality, the city has been also involved in the creation of a new cooperatives. Thus, in the 1990s, Tampere Water Works was involved in the establishment of two new water cooperatives, Sisaruspohja and Nurmi, in the northern part of the city in the Teisko area (Juuti and Katko 1998).

Concluding comments

The Finnish experience shows that water cooperatives tend to have good internal democratic self-governance, and that they are oriented to deliver a service to their local communities, not to make profit for private benefit. This was the case in the history of Pispala Water Cooperative and in is the prevailing pattern. In line with globalisation processes, and in a context of urban and population growth, urban water systems have greatly expanded and are still expanding worldwide. However, at the same time, people living in smaller communities and dispersed areas often rely or prefer modern small-scale or on-site systems. In all cases, as suggested from the experience of Tampere Municipality, the role of local governments in water services is fundamental –something that is not perhaps adequately stressed in global water forums and policy discussions related to the problems facing the provision of water and sanitation services. In developed countries, local governments have overwhelmingly been the owners of water systems, and in many transition and developing economies they are getting an increasingly important role. In this context, it is worth stressing the lessons learned from our research: water cooperatives are still a very good solution in many places where the scale is not very big.

References

- Arvonen, V., S.N. Kibocha, T.S. Katko, and P.E. Pietilä (2017). "Features of water cooperatives: a comparative study of Finland and Kenya. Public Works Management & Policy, Vol. 22, N° 4, pp. 356-377. <https://doi.org/10.1177%2F1087724X17715267>.
- Evans R. (1987). Death in Hamburg. Society and Politics in the Cholera Years 1830-1910. Oxford: Clarendon Press.
- Juuti P. and T. S. Katko (1998). "Ernomane vesitehras". Tampere.
- Juuti P. (2001). Kaupunki ja vesi. Tampereen vesihuollon ympäristöhistoria 1835–1921 (City and Water. Environmental History of Tampere 1835-1921). Summary in English. <http://acta.uta.fi/pdf/951-44-5232-1.pdf>
- Takku (2018), "Musta Pispala" (Black Pispala). Available at: <https://takku.net/article.php/20090618203416474> (accessed in November 2018).
- Katko T. S. and P. Juuti (2007). Watering the City of Tampere from the mid-1800s to the 21st Century. Tampere: Tampere Water & International Water History Association.