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**How to cite**

ECUYER, Brendan. Community water debts in Colombia: Financialisation from below? In: Geoforum, 2024, vol. 154, p. 104049. doi: 10.1016/j.geoforum.2024.104049

This publication URL: https://archive-ouverte.unige.ch/unige:182341
Publication DOI: 10.1016/j.geoforum.2024.104049

Geoforum 154 (2024) 104049

Contents lists available at ScienceDirect

Geoforum

journal homepage: www.elsevier.com/locate/geoforum

# Community water debts in Colombia: Financialisation from below?

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ARTICLE INFO

*Keywords:*
Financialisation
Water
Rural area
Community water management
Colombia

ABSTRACT

Drawing on the recent experience of community water finance in Colombia, this paper contributes to a diversification of the literature on the financialisation of water and the commons governance by focusing on the perspective of grassroots organisations. It highlights the inclusion and exclusion mechanisms of water access in the rural Colombian context. As water communities continue to seek autonomy from state agencies and private providers and to affirm their own management model, the paper examines the ambivalent effects of finance and the use of the credit as a political instrument. In a context of public policies that pressurise communities to adopt water management and financing strategies based on profitability and efficiency, the paper considers how access to credit from local financial institutions contributes to this quest for autonomy. It highlights how the effects of these new financial practices are starting to bring about social change within communities, such as the redefinition of leaders' roles, or the transformation of relations with the state. The paper concludes by demonstrating how, in adopting entrepreneurial forms of management, the community water organisations assume the risks associated with the market-based model and thus expose themselves to significant change.

## 1. Introduction

Finance and water are increasingly intertwined almost worldwide, as shown by the research on the financialisation of water[1] that has flourished in recent years (March & Purcell, 2014, Bayliss, 2014, Ahlers and Merme, 2016), whether in terms of the commodification of the resource, new investment in water infrastructure or inclusive water access strategies (Varley, 1995; Mader, 2011; Greene, 2018; Loftus et al., 2019; Pryke and Allen, 2019). While about 29 % of the global population lacks access to drinking water (WHO, 2017), this trend is an issue of serious concern especially in the global South: with access becoming more inequitable and conditional upon capacity to pay, the human right to water is being questioned (Sultana and Loftus, 2011).

In rural Colombia, the relationship is strengthening between grassroots community water organisations and local financial institutions, a very local connection between finance and water which differs from the usual processes observed. Even though community water management is legally recognised and represents 40 % of water supply in Colombian rural areas (DNP, 2014), it has historically been marginalised by the state and has never seriously been considered as an option for the provision of drinking water services (Moncada Mesa et al., 2013). The lack of regulations and public policies to promote local water management has hampered their growth and empowerment (Dupuits & Bernal, 2015). This paper seeks to illustrate how finance is used by community water organisations to provide independence and autonomy from outside interference and explores the risks that come with it. It does so by looking at the water communities' management of debt, and by examining the rationales associated with access to formal credit. What is the financing used for? How is it managed? How do communities understand the notion of debt? What are the effects of this debt? How does it transform internal and external social relations?

The case study focuses on around 30 community water associations

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[1] The financialisation of water is referring here to the integration of water and related services into global financial markets, so that the interests of private financial capital have shaped "the financial, economic and institutional architecture on which service provision is based" (Bayliss, 2014: 292).

https://doi.org/10.1016/j.geoforum.2024.104049
Received 17 March 2023; Received in revised form 30 March 2024; Accepted 31 May 2024
Available online 5 July 2024

in the department of Antioquia which access credit from local financial institutions, particularly for the improvement of infrastructures, the extension of networks and the purchase of land for the conservation of hydrological springs. It also looks at the various other players directly or indirectly involved in this process, such as municipalities, and the authorities responsible for public water supply policies. The results of the study show how access to credit allows communities to diversify their funding sources, reduce dependence on the state and adapt or resist changes in water supply regulations associated to neoliberalisation, such as full cost recovery and volumetric metering (Guerrero et al., 2015). They also show how, in a second stage, these new financial practices redefine the governance, with, for example, the emergence of new figureheads within the water communities and a reconfiguration of external relations, in particular with the state.

The paper provides new insights on water financialisation and on the ideological contradictions concerning local acceptance of these processes. The findings can contribute to extending the theory of commons governance (Ostrom, 1990), especially to the maintenance of the commons. Finally, it contributes more broadly to exploring the ways in which finance has integrated and is transforming water provision in a wide range of contexts across the Global South.

The Section 2 presents the methodology. The Section 3 provides a brief historical overview of the water supply in Colombia and explains how the water system is structured. Section 4 explores how community management is marginalised by the state and how it is responding. Sections 5 and 6 analyse the community banking and access to credit processes and show the political dimension, beyond its role in improving infrastructure and water quality. Sections 7 and 8 look at the governance changes within the water communities, but also the transfer of credit risks and responsabilisation. Finally, the Section 9 reflects on how the findings can help to better understand community dynamics and looks at the implications of recent political changes in Colombia for water communities.

## 2. Methodology

This research draws on data from a qualitative field study, which is part of a broader research about community water management in Colombia (Ecuyer, 2022). Community-based water organisations, commonly known as community aqueducts[2] (*acueductos comunitarios*) are systems managed collaboratively by community action councils, committees or non-profit user associations, whose role is to work collectively to meet public needs for water supply services in the home or workplace (Bernal et al., 2014). It is among the most illustrative examples of commons governance as defined by Ostrom (1990). There are different systems of administration[3] and corresponding legal statuses, however, a large part of them manage water distribution on an informal basis (Dupuits & Bernal, 2015). Their practices have their origins in indigenous and community traditions of mutual aid for the common good in public spaces (Moreno, 2018). Nowadays, they include members of civil society, economic, political and social rights defenders, and modest or poor families, usually from peasant, indigenous or Afro-Colombian communities (Moncada & al., 2013).

Adopting an interdisciplinary approach combining sociology and political economy, the aim of this research is to shed light on the complexity and heterogeneity of the financial practices of those water communities. Karl Polanyi's interdisciplinary approach, which links economic and political plurality, is an analytical and methodological reference for this work (Polanyi, 1957). Polanyi insists on the need to cover "those areas where the borders of the market economy and the non-market economy meet" (Polanyi, 1963, cited by Hillenkamp et al., 2013: 12). As Ostrom (1990) has shown, "recognition of the commons cannot be obtained from the dichotomy between market and state" (Hillenkamp et al., 2013: 22). The community water organisations precisely bring the political dimension into economic and social life through voluntary self-organisation. The ontological relationship they have with nature and the status they give to water is essential to understanding the issues of commons governance. Water is seen as a constituent element of the socio-cultural and natural fabric (Sandoval-Moreno & Günther, 2013: 168).

This is combined with a bottom-up approach that looks at the growing role of finance in social relations by examining the practices, needs and aspirations of individuals (Servet, 2006) and fed by several studies which provide an understanding of what drives individuals and groups to use financial services (Morvant-Roux, 2006; Servet, 2006; Saiag, 2011; Guérin et al., 2013; Van der Zwan, 2014; James, 2015). The "demand-side approach"[4] involves taking an interest in communities, their experiences and perceptions, and taking a close look at social relationships, not only to see debt as a source of alienation, but also to reveal its emancipatory potential (Guérin, in Farinet (ed.), 2018). As Isabelle Guérin states "before being an economic transaction, debt must be understood as the basis of human existence" (Guérin in Farinet (ed.), 2018: 134). Debts, if being primarily a social bond rather than solely an economic transaction, could be harnessed as a means to cultivate trust, promote social solidarity, and ultimately combat exclusion (Farinet (ed.)., 2018).

The field study spread over 15 months, between 2014 and 2020, in the Central and Western Cordillera region of the department of Antioquia. In total, around 55 participant observations, semi-structured interviews and informal discussions were carried out with different actors: NGOs (*Corporación Penca de Sábila, Enda Colombia*), financial cooperatives[5] (Confiar, CFA), *Empresas Públicas de Medellin* (EPM, the country's largest public utility company), local and national authorities, legal representatives, administrators and members of community water supply associations. The biggest challenge was to find organisations that had taken out formal loans and were willing to discuss financial issues and share their perception of debt. With the support of NGOs and the community water national network (*Red Nacional de Acueductos Comunitarios*), it was finally possible to identify around 40 communities, mainly in the department of Antioquia. Interviews were carried out with 30 of them, all situated in rural areas surrounding the Aburrá Valley. The map below shows the location of the community water associations surveyed and the coverage of the public utilities company EPM, in perspective.

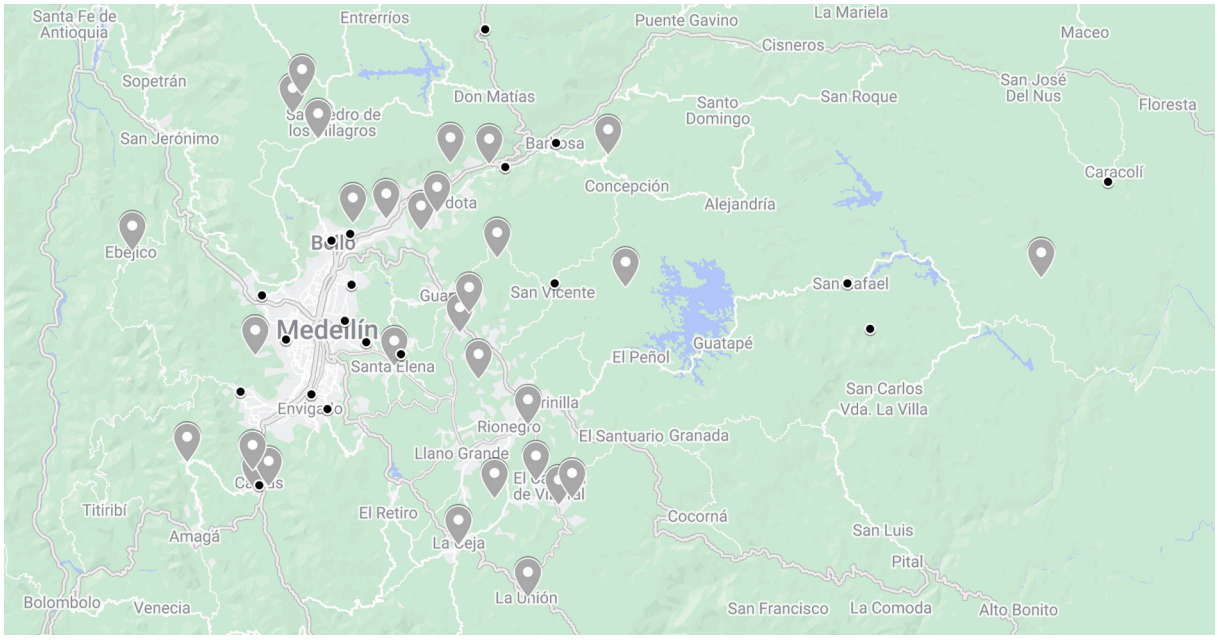
[2] In practical terms, the aqueduct is the supply network generally consisting of pipes that channel water from springs located at high altitude or underground through a water treatment and storage system to households.

[3] The organisation usually has at least one salaried plumber and one salaried secretary who oversee administration and maintenance, a steering committee that is responsible for the management of the service and internal control, a general assembly of users for decision-making and, finally, the controllers who supervise the service (Smits et al., 2013).

[4] Idea defended by S. Morvant-Roux during the seminar, *La financiarisation par le bas. Une économie morale et politique de la dette*. EHESS/CESSMA/ENS, 2019, Paris.

[5] Financial cooperatives are not-for-profit member-owned financial institutions that offer services such as savings and checking accounts and loans.

### 2.1. Location of water associations




*Map of south-western Antioquia department. The grey markers locate the water associations surveyed and the small black dots the main EPM water treatment plants (source: Ecuyer/Google Maps).*

Extensive exchanges and key informant interviews made it possible to collect data in informal contexts where information is often transmitted orally (Kumar, 1989; Olivier de Sardan, 1995). The data collected was transcribed and then systematised by isolating a serie of key themes, such as the administrative and financial management (decision-making, tariffs, billing, metering system or disconnections), the funding sources (water members fees, subsidies, banking process, loan conditions, repayment terms, guarantees), the relations with financial institutions and municipalities, and the accountability to the state and control agencies.

The associations surveyed are relatively well developed and rely on salaried staff, a tax system, investments and income. Most of the aqueducts were built by farming communities between the end of the 1970 s and the 1990 s, mainly with financial and labour contributions from members. Sometimes they had support from the coffee producers' committee, municipalities or the departmental health ministry, which generally granted loans. Their sources of funding for infrastructure maintenance come mainly from members' water fees, occasionally from state subsidies, equipment donations or co-financing agreements with the municipalities. Over the last 20 years, they have also been financed by loans granted by financial cooperatives, commercial banks or compensation funds. The table below gives an overview of the characteristics of the water organisations surveyed and gives an idea of the use of credit funding.

### 2.2. Profile of water associations

| Aqueduct associations | Date of interview | Location | Year of foundation | Number of households | Credit financing |
|---|---|---|---|---|---|
| Asuasi | 03.10.2018 | Santa Elena, Medellin | 1996 | 419 | 3 loans were taken out with three financial institutions for the construction of a water tank, the access of land ownership, a pumping station and the purchase of land to build the association's head office. The first loan was in 2008. |
| Juan Cojo | 04.10.2018 | Girardota | 1983 | 950 | 2 loans were taken out for the extension of the network and as a contribution to the purchase of land and the construction of a wastewater treatment plant. |
| Manga Arriba | 05.10.2018 | Girardota | n/a | between 200 and 300 | 1 loan was taken out to pay and compensate the former plumber who had taken legal action against the aqueduct following an internal dispute. |
| Rivera Arriba | 07.10.2018 | Carmen de Viboral | n/a | 128 | The association was unable to obtain a loan because the conditions were too restrictive. |
| Guasimalito | 25.10.2018 | Bello | n/a | between 200 and 300 | The aqueduct representative took out a loan in his name to buy micro-meters. The conditions were too stringent for the association to obtain credit in its own name. |
| La Clara | 05.11.2019 | Guarne | 1982 | 468 | 3 loans were taken to build a storage reservoir, to extend and replace pipes, and to improve the water treatment plant and pumping system. The next loan was planned for the purchase of land. The first loan was in 2011. |
| La Hondita | 05.11.2019 | Guarne | 1992 | 1928 | 8 loans were taken out to develop the catchment area, install a new water intake, repair the pipes, build the treatment plant, build storage tanks and extend the network. The first loan was in 2008. |

(*continued on next page*)

(*continued*)

| Aqueduct associations | Date of interview | Location | Year of foundation | Number of households | Credit financing |
|---|---|---|---|---|---|
| Cuatro Esquina | 06.11.2019 | Rionegro | 1965 | 1135 | 2 loans were taken out for the construction of a storage reservoir, repairs and maintenance to the treatment plant, and the installation of a fence around the water tank. The first loan was in 2006. |
| Carmin Cuchilla | 06.11.2019 | Rionegro | 1998 | around 3000 | 6 loans were taken for the purchase of trucks and 4 for aqueduct infrastructure. It should be noted that this aqueduct is no longer community-owned. It has a hybrid status, somewhere between an association and a company. It is a not-for-profit corporation. |
| Agua Viva (umbrella association) | 13.11.2019 | Carmen de Viboral | 1996 | 9 aqueducts members | Of the 9 member associations of the umbrella organisation, 6 have taken out loans to purchase conservation land, build their head offices or for other infrastructure. |
| Cerro Samaria | 13.11.2019 | Carmen de Viboral | 1978 | 1989 | 4 loans were taken out to purchase land and reforest the catchment area, as well as to build raw water storage tanks. The first loan was in 2003. |
| Campo Alegre | 13.11.2019 | Carmen de Viboral | 1960 | 400 | 2 loans were taken out for the purchase of a property and for the replacement of the drinking water supply and wastewater drainage network. The first loan was in 2013. |
| El Capiro | 18.11.2019 | Rionegro | 1985 | around 1000 | 2 loans were taken out for the installation of infrastructure, such as the treatment plant, pipes and reservoirs. These are bridging loans, pending payment of connection fees for a new hamlet. It is planned that the credits will be paid when the new users arrive. |
| Piedra Gorda | 18.11.2019 | San Vicente | n/a | 670 | 1 loan was taken out to repair storm damage to the viaduct. |
| Buenavista | 18.11.2019 | La Unión | 1987 | 275 | 1 loan was taken out to finish paying for the storage tanks and to replace the water main. Access to credit was facilitated by the trust of a financial cooperative based on a long-standing relationship. |
| La Corrala | 22.11.2019 | Caldas | 1996 | 1250 | 3 loans were taken out for specific projects, namely the renovation and construction of infrastructure such as the treatment plant, the extension of networks and storage tanks. The first loan was in 2015. |
| La Chuscala | 22.11.2019 | Caldas | n/a | 960 | 3 loans were taken out, firstly to obtain a payment history for receivables, then to extend the system and build water tanks (wear rate) and to build a water tank battery (*batería de almacenada*). |
| Guapante Asoagua | 27.11.2019 | Guarne | n/a | 240 | 1 loan was taken out with a financial institution to offer payment arrangements to users who are unable to pay (to cover internal loans). |
| Aveza El Zarzal | 06.12.2019 | Copacabana | 2000 | 812 | 5 loans were taken out to invest in infrastructure and acquire land. The first loan was in 2006. |
| Acuasfran | 12.12.2019 | San Pedro de los Milagros | 1996 | 220 | 1 loan was taken out in 2017 to replace the water pipes. |
| La gota de agua | 17.12.2019 | Barbosa | n/a | 287 | 2 loans were taken out in 2019 as part of a project with a foundation to build a roof, create a cement base for the tank and build a water tank. |
| Belen Altavista | 21.12.2019 | Altavista, Medellin | 1989 | around 2500 | Around 20 loans were contracted, for the operation of the aqueduct, the treatment plant, the construction of offices, the extension of networks, meters, household connections, as well as for the design of plans. It should be noted that this aqueduct is no longer entirely community-owned. |
| El Jordán Auajor | 08.01.2020 | San Carlos | 1980 | 617 | 1 informal loan was taken out to manage the administrative process of legalising the association with the state. Another loan was taken out to extend the association's internet café. |
| San Andrés | 10.01.2020 | Girardota | 1950 | 442 | 1 loan was taken out in 2020 to build the treatment plant and as an alternative to the lack of capitalisation. |
| Multiveredal de Ebéjico | 11.01.2020 | Ebéjico | 1996 | around 1000 | 1 loan was granted in 2013 to purchase land and build the association's offices. |
| San Nicolas | 21.01.2020 | La Ceja | 1989 | 290 | 1 loan was granted for the construction of a drinking water treatment plant in 2010. |
| Multiveredal de Angelópolis | 24.01.2020 | Angelópolis | 1998 | 550 | 1 loan was taken out under the *Banco de los pobres* programme for the purchase of volumetric meters for households that had bought the meter on credit from the association. |
| Filo Verde | 04.02.2020 | Barbosa | 1950 | 402 | The association has not taken out any loan due to their fear of over-indebtedness. |
| El Paraíso | 05.02.2020 | Barbosa | n/a | 400 | 3 loans were taken to improve and extend the networks, and to purchase land. |
| El Platanito | 06.02.2020 | Barbosa | 1985 | 430 | The association had not yet taken out a loan, but it wanted to do so to buy a plot of land near the spring. |

## 3. The water system in Colombia: Between state, market and community

The Colombian water supply system is characterised by a wide disparity between rural and urban areas. In urban areas, approximately 86 % of the population has access to safe water, while in rural areas, this figure drops to around 42 % (MVCT, 2018). Historically, the Colombian state has priviledged public, private or public–private partnership (PPP) water management models in urban areas, neglecting the community management model in rural areas (Moncada et al., 2013; Valencia and Ecuyer, 2023). For instance, the country's major cities, Bogotá, Cali and Medellin, are served by public utilities. The cities on the Caribbean coast, such as Cartagena, Barranquilla and Santa Marta, are supplied by large private, foreign, public or mixed companies (Motta Vargas, 2011; Urrea & Camacho, 2007). In rural areas, community water management is largely developed and has demonstrated its ability to supply people in the most remote areas, as well as on the outskirts of towns, where private and public providers have failed (Moncada et al., 2013).

The neoliberal evolution of public water services partly explains the predominance of the private and public sectors in urban areas and the shifts from one to the other. Until the end of the 19th century, water supply was managed by private individuals at the local level. Then, from 1910 onwards, the state gradually guaranteed the supply services, starting with the municipalities and ending with full state ownership in

the 1990 s (Moncada et al., 2013). The corporatisation of public services,[6] full cost recovery and volumetric metering began as far back as the 1910 s and 1920 s, almost simultaneously with municipalisation (Guerrero et al., 2015). At the end of the 20th century, the neoliberal reform of public services marked a turning point towards privatisation of the sector (Moncada Mesa et al., 2013). However, the country's century-long experience of corporatising water has kept the public sector deeply involved in service provision (Furlong et al., 2018). The state has repositioned itself mainly by assuming the role not of operator but of planner and regulator or "market manager" (López Rivera, 2015). It has confined itself to controlling the actions of the private sector, corporatised public companies and municipalities and set up technical and financial support programmes for public service providers (Sánchez Garcia & Villegas Carrasquilla, 2001). These are mainly subsidies for water tariffs for users (cross-subsidies[7]) and infrastructure projects co-financed by the municipalities.

The neoliberalisation and the decentralisation of water supply have also laid the groundwork for the financialisation of water access in the country. The funding of water infrastructure based on state indebtedness with national and multilateral banks extended to a regional level, contributing to the growing indebtedness of the country's departments (Urrea, 2013). This is illustrated in programmes such as the former Department Water Plans (PDA) of 2007, launched as a vehicle for water privatisation, and the more recent policy Water for Prosperity from 2011 which focuses on the development of rural water policy (Urrea, 2013). The models applied by public companies to supply water to the urban poor provide another example of water financialisation. They are based on the strategies of Bottom of the Pyramid markets (Elyachar, 2012) and share a common approach to supplying domestic and drinking water services to households through debt and debt recovery mechanisms (López Rivera, 2015; Furlong, 2019). In the case of EPM, Furlong (2019) shows how debt flows down from the top to the most vulnerable users.

In parallel, the community water management system has been consolidated in rural areas at the opposite end of the neoliberal spectrum, overcoming the difficulties of the state and the lack of private investment due to the low attractiveness of financial returns (Foster, 2013; Harvey & Reed, 2006). According to some estimates there are more than 16,000 community water organisations in Colombia, benefiting more than 12 million people (Garcia & al., 2011). Beyond water supply, the unique way of operating, based on solidarity and democratic participation, makes a significant contribution to strengthening the social fabric of communities. In their constitution, water communities do not refer to "capital" but to "assets" and are composed of partners with rights and duties and not mere clients. Decisions are taken according to a quorum and majority voting system or based on community deliberations (Salazar, 2011). The organisations are thus aligning with the principles of the social and solidarity economy, which aims at "a collective functioning based on equal voting among members (according to the principle: one person = one vote)" (Laville, 2011: 103). In addition, the water supply and treatment systems put in place alternative technologies that respect the environment, with the protection of water sources as a priority.

## 4. Community water management at the margins

Reforms and neoliberal policies have predominantly marginalised community water management. Law no. 142 of 1994 (CNC, 1994), which is enacting the reform of public services, provides some answers to the issues faced by water communities. It places emphasis on technological innovation and efficiency, and largely favours the development of larger scale public and private utilities. This law offers the possibility for individuals, private companies, and organised communities to manage and administer water systems and, in many cases, to become their owners (Ibid.). The lack of specific regulation for water communities required them to comply with the same rules that regulate large companies in the market. This includes compliance with standards concerning water quality, pricing, state taxation, and administrative management (Valencia Agudelo, 2008; Dupuits & Bernal, 2015).

Subsequently, communities find themselves obligated to implement an increasingly complex pricing methodology,[8] adhering to the full cost recovery model to account for the cost of water consumption, infrastructure and maintenance overheads. This implies the installation of volumetric meters for each household and a study of socio-economic stratification. The historical system applied by water communities is thus disregarded. Contributions are traditionally defined according to local and individual payment capacities, geographical, cultural, and technical conditions, (Red Nacional de Acueductos Comunitarios, 2018). In most cases, supply focuses on the needs of communities, and relatively low tariffs are applied (Gómez Bustos, 2012), generally based on maintenance costs.[9] These additional financial burdens cause associations to remain reluctant to standardise their operations (Chaves & García, 2009), which in turn makes it difficult for them to access, for example, tariff subsidies or project co-fundings with municipalities. Another reason for the reluctance regarding the formalisation of their activities is the fear, that failing to meet water quality and management standards might provide grounds for municipalising or privatising the service.

Given the financial difficulties faced by water communities and their lack of access to external technical support (Domínguez Rivera et al., 2016), the institutional methodology imposed by the state is difficult to implement. Usually, the number of users, varying between 100 and 2000 families, does not allow for economies of scale that generate the income needed to access technical and financial expertise (Smits & al., 2013). Added to this is a whole series of complex and costly administrative controls and regulations applied by the national and departmental authorities. For instance, "concession" contracts have to be renewed every 5 years with the departmental environmental authority (article 32 of law 80 of 1993) and cost around US$ 150 a year.

For the state, it is neither profitable nor efficient to support small, self-managed organisations scattered across the country, each of which supplies water to a limited number of families (Smits et al., 2013). The former departmental water plans (PDA) and the Water for Prosperity policy mentioned above promote the creation of regional companies that cover vast territories and unify tariffs (Salazar Restrepo, 2018). In practical terms, these plans serve to pressurise community schemes in order to either transform them into private providers administered by the principles of cost effectiveness, integrate them into larger public companies or simply make them disappear (Moncada et al., 2013, Llano-Arias, 2015). During a visit to the Tariff Regulation Commission (CRA)

[6] Corporatisation involves the adoption of entrepreneurial practices and the division of management and ownership through a share structure or shareholding (Voorn et al., 2018). In the case of water services, the practices adopted are notably centred on the principles of full cost recovery and volumetric metering (McDonald, 2014).

[7] Households located in socio-economic strata 1, 2 and 3 are recipients of subsidies of up to 50, 40 and 15%, respectively; households in strata 4 pay the service provision cost; and households in strata 5 and 6 contribute by paying a tariff 20% higher than the reference tariff for strata 4 (art. 99.6, Law 142, 1994).

[8] For example, EPM sets tariffs based on socio-economic strata and service costs. Fixed costs, covering administrative and customer service expenses (e.g., insurance, billing), are subsidised and applied uniformly. Variable costs, dependent on users' consumption and subsidised up to 13 m3, include chemical inputs, maintenance, and energy for water pumping (López, 2015).

[9] The amount of the monthly contribution per household is discussed and debated at the annual general assembly, after the annual action plan and delegated tasks were made by the steering committee.

offices in Bogota, which sets national tariff standards, an official stated that "it's not an objective to help the water communities develop, but they are tolerated". The reason, he explained, is the fact that "community water organisations do not follow an economically efficient model and do not pass on all costs to their members". This resonates with the Dublin declaration,[10] emphasizing the imperative adoption of a cost recovery model to avoid wastage and thus ensure the efficient distribution of water resources (Koudstaal et al., 1992).

It is worth noting the recent evolution of the state's position on community water management, although it continues to emphasise the need to "take advantage of economies of scale and promote regionalisation" in rural areas (DNP, 2019: 677). For instance, the National Development Plan 2018–2022 recognises the importance of community governance and proposes to support it through technical assistance measures, more flexible procedures and differential monitoring, among others (DNP, 2019: 683).

### 4.1. The everyday resistance of water communities

To defend their interests and their management model, the water communities have organised themselves into multi-level governance networks that extends throughout Colombia. As shown by Dupuits & Bernal (2015), communities are increasing their participation in different second-level associations with regional influence. For example, the Departmental Association of Community Aqueducts of Antioquia (ADACA) carries out advocacy work focusing on water policies at departmental level since 2010. The regional associations are then represented at national level by the national network (*Red Nacional de Acueductos Comunitarios*). Since 2006,[11] national events have been organised, bringing together representatives of organisations from all over the country for presentations and group work on the various regional issues, as well as more technical workshops. The most concrete initiative of this national coalition was the popular legislative initiative for the right to community self-management (*Ley Propia*), launched in 2017, which pointed out the deficiencies of public policies regarding community management and sought to revise existing laws, which is "essential to the peasant and family economy and that allow a dignified life in the community" (Red Nacional de Acueductos Comunitarios de Colombia, 2017:13).

Advocacy actions, knowledge exchange meetings at national and regional levels, and legislative initiatives are all forms of resistance and contribute to the political strengthening of community water management. However, resistance is not limited to coordinated actions, but everyday practices of resistance also safeguard the social reproduction of water communities. As stated by Marie Meudec (2017), approaching the notion of resistance in the social sciences means thinking about its various forms – exceptional or ordinary – depending on the context. It also means looking at its invisible, everyday forms and at the necessary decentring of resistance thinking. In his book, *Weapons of the Weak: Everyday Forms of Peasant Resistance*, James C. Scott (2000) examines peaceful peasant resistance. He explains that while hegemonic ideas are the result of conflict and are continually reconstructed, resistance is born more from daily experiences than from revolutionary consciousness. Masked resistance is understood as a means to rebel against the system while at the same time needing to survive within it.

Examples of everyday resistance of water communities to bypass the state are "collective" access to land[12] and the practice of *convite*. Rather than relying on usage rights granted by the state, "collective" property ownership offers more territorial stability for the communities. The protection of nature and land is intrinsically linked to the community water system (Salazar Restrepo, 2018). C*onvite* refers to a gathering of community members who engage in voluntary and participative work for the benefit of the community and is a basis of community management (Davila Ladron de Guevara et al., 2018). It has its origins in the customs and mutual aid practices of indigenous communities and made it possible to build and maintain many community aqueducts. Sometimes, *convite* includes reciprocity between different organisations participating in each other's community works (e.g. digging trenches and installing pipes, planting trees around the water source and cleaning a water tank). These practices allow traditional functioning of community management to be maintained and reproduced, despite the lack of funding and state support.

And what about the use of credit to overcome financial obstacles to purchasing land or carrying out construction work? Could credits provide a means to fight the threat of a water supply takeover by public or private companies and thus to hold out against the neoliberal model defended by the state? Can credit provide a pathway towards greater autonomy? In other words, can community water debt be synonymous with resistance? Some research already highlights the emancipatory potential of finance and suggests that it can indeed be a means of resistance. One of the arguments is that finance can be seen as a tool to contest the state and reduce financial dependence (Appel, 2014; Mann, 2017; Pitluck et al., 2018). Mann (2017) shows how language, symbols and financial tools can be appropriated to set up a cooperative credit system, in order to limit the use of central bond markets. Appel (2014) explains how activists can use their expertise and experience in financial entities to propose alternative banking systems. The argument is to consider ways of combating the excesses of neoliberal capitalism and achieving emancipation while using the tools of this same system.

## 5. From banking to credit: how credit brings together water communities and financial cooperatives

Several water communities have built closer ties to the financial system over the last 20 years. We will see that this accelerated rapprochement mostly takes place via financial cooperatives that share the same values, but not only. The use of commercial banks is beginning to spread. The Association *Hondita – Hojas Anchas*, in the Municipality of Guarne (Eastern Antioquia) opened its first bank account in 1992, the year of its foundation. Today, it has 8 accounts with 4 different large financial institutions (Banco Santander, Bancolombia, Banco Bogotá, Itaú) and with one financial cooperative. How can this evolution be explained? The process dates back to 1986, when the founding community leaders got together and launched, through their respective residents' associations (*Juntas de acción comunal*), the project to build a community water supply system. Shortly before the association was registered with the Commercial Registry, a first bank account was opened at the Itaú Bank to centralise initial contributions for construction costs. Later, as the association president explained, this account made it easier for members to pay their bills, but above all provided them with maximum transparency and security. Indeed, fraud and theft have become commonplace for many associations whose growing

[10] The Dublin Water Declaration declared water to be an economic good with an economic value through its various competing uses, at the International Conference on Water and the Environment (ICWE) in January 1992 (WMO, 1992).

[11] Since the first one in Bogotá in 2006, national meetings have been held in Buga, Cartagena (Bolívar), Pasto (Nariño), Villavicencio (Meta), Medellín (Antioquia), Iza (Boyacá), Páramo (Santander) and the last one in 2023 in Popayán (Cauca).

[12] In practice, water associations do not have formal access to collective property, they have access to property as a legal entity (*persona jurídica*). In Colombia, the concept of collective property (Political Constitution, 1991) applies exclusively to ethnic groups (Herrera Arango, 2017). Water associations can also register their property as a civil society nature reserve (Law 99 of 1993), when it involves a forest area or the protection of water sources (Santamaría et al., 2018). In this way, they benefit from reductions in property taxes and subsidies for environmental services.

financial resources have been or are still held centrally by the association's treasurer (Ecuyer, 2022).

The association quickly diversified its range of bank accounts to accommodate members who already held accounts with other banks, thus reducing the cost of transfers, often made from bank counters in town or through mobile applications. For members who live relatively far away and cannot make transfers, some banking institutions enable them to pay water bills through payment terminals at small businesses, such as supermarkets or *tiendas* (small shops). Through these bank "correspondents", members can pay their bills and obtain information on the state of their finances. Supermarkets or small shops generally charge less than banks to collect members' water fees and, more importantly, they are open every day, so farmers can make payments when they come down to the village. Financial management has become complex with the increasing number of users – some associations include 2,500 families, while the smallest ones have 250 members. As also observed in other cases, this partly explains why many associations have chosen to use banks, for reasons of security, transparency and simplification, and why they have so many different accounts (Ecuyer, 2022). In short, they have opened multiple accounts in order to centralise their resources, facilitate fee collection and adapt to the specific needs of their members, taking advantage of the respective facilities offered by each financial institution.

It is noteworthy that banking has been actively promoted by the state for administrative transactions. For instance, access to a formal bank account has become necessary in recent years for the water communities to pay state taxes, to receive tariff cross-subsidies for members on lower incomes (MVCT, 2014) or to obtain environmental compensation (the payment for environmental services scheme – *Banco 2*). While it is important to understand this in a broader context of financialisaton supported by public policies on a national level, many associations had already begun to open bank accounts to meet their specific needs several years earlier than required by the authorities for administrative reasons. We will see below how banking then became a first step towards meeting the conditions and gaining the opportunity to access credit, which is increasingly widespread.

In the years after these organisations set up bank accounts, community management associations started turning to financial cooperatives in order to diversify their sources of financing which, at first sight, offer more flexibility in terms of preconditions and better repayment terms than the standard funding mechanisms (joints projects negotiated with the municipalities or loans offered by the Department of Antioquia and second tier banks such as *Findeter* and *Finagro*). They use credit to undertake major renovation or extension work on the network (e.g., pipelines, water storage tanks, water treatment plants), and to purchase land, generally for the protection and conservation of high-altitude water sources.

The administrator of the *La Chuscala* association, in the mostly rural municipality of Caldas in the south of the Aburrá Valley, explains the "banking evolution" of his community as he likes to describe it. Shortly before 2000, the association, founded by a collective of inhabitants of *La Chuscala* (*Junta de acción comunal*), opened its first bank account with the *Banco Agrario* to centralise the association's financial resources, to facilitate accounting and the payment of members' bills. This account was also needed to pay salaries and service contracts. The administrator recounts with amusement how the association initially used an agricultural store to collect bill payments in return for a "small percentage". He explains that this was to prevent members stealing money from the fund, as one of the association's former treasurers had done. In 2015, the committee decided to close this account and to open a new one with the financial cooperative Confiar. There were several reasons for this choice. First, the fees charged by Confiar for collecting members' payments are often lower than those charged by commercial banks. Secondly, Confiar offers easy payment solutions for members living far from urban centres, like the *tiendas* acting as correspondent banks as mentioned above. Confiar also provides follow-up services, such as workshops on financial education and environmental management. Finally, Confiar also offers easier access to credit for the association.

The association took out an initial loan of about US$ 6,500 with the Confiar cooperative, mainly to start a credit history, which is a condition for accessing further loans in the future. Following this first loan, described as a "trial credit" by the administrator, the association borrowed about US$ 12,200 for network extension and water tank construction. He explains that this loan, like the previous one, had a high interest rate. It is only since the most recent loan that the conditions have been eased, he explains. This loan for about US$ 23,400 was used for a battery of water tanks.

Community management associations first gained access to credit through relationships with local financial cooperatives more present in rural areas, and often through informal contacts. These cooperatives have quickly become a point of reference for water communities, not only as a source of funding but also as a source of administrative support, through training and financial education. They often provide investment loans for up to 5 years, for sums ranging between US$ 8,000 and US$ 80,000, which can be used for the most large-scale operations (network extension, construction of water treatment plant, purchase of conservation land) with interest rates of between 1.2 % and 1.8 % per month (Ecuyer, 2022).

CFA (*Cooperativa Financiera de Antioquia*) and Confiar are the two financial cooperatives working most actively with community water management associations, as shown by their activities. In 2017, 117 associations, located mostly in the east of Antioquia Department, were registered with Confiar. The water associations' deposits totalled about US$ 1 million. Of the 117 organisations, 14 had a loan, amounting to a total of about US$ 400,000 (Confiar (2017)). CFA which is more present in the northern Aburrá Valley, has 30 community water associations among its depositors from 8 municipalities of Antioquia Department, with total deposits of approximately US$142,000. 7 associations appeared in the 2019 loan portfolio, Considering just three rural municipalities in the north of Medellin (Barbosa, San Pedro de los Milagros and Girardota).[13] In the municipality of Copacabana, an association had already contracted three loans with CFA, the largest of which amounted to US$ 38,000, according to internal information shared by the cooperative.

## 6. Credit as a tool to increase water communities' financial agency

The representative of *Filo Verde*, an association in the municipality of Barbosa, considers that the state is a threat to community management and that it is supporting the water associations "on an ad hoc basis because it is furthering its own interests", she laments. Communities cannot expect anything from the state, she says. The only support she remembers receiving is a modest contribution for construction of the treatment plant, a few years ago. Above all, she notes the community's distrust of municipal support via the principle of loan for use (*comodato*). There are fears about the municipality's intentions to take over the infrastructure or the land in which it has invested. "It is better to be indebted to a bank than to the municipality, which can then hold you accountable". Some associations therefore even refuse the support offered occasionally by municipalities, such as water analysis equipment or laboratory instruments for instance, on the grounds that they want to maintain their autonomy (Ecuyer, 2022). The representative of *Filo Verde* justifies this reluctance by the fact that "the municipality's participation delays projects because their contribution takes time to arrive, and experience shows that it is used for political purposes".

Other associations such as *Campo Alegre* in the municipality of El Carmen de Viboral experience similar challenges. The former administrator of *Campo Alegre* expressed his frustration about the municipality's

[13] Interview with CFA's network manager, 2019.

role in supporting the association. He stated that they regularly ask the mayor for support, which is slow in coming and for him, access to credit is a means to reduce this dependency. "We are not going to wait for the mayor forever! The loan is "simpler" (i.e. does not involve as many political interests), we don't dishonour ourselves and we don't depend on anyone". "It is also a way to show public companies interested in our association that we have the capacity to manage it ourselves", he explains. Indeed, the association is under constant pressure from *La Cimarrona*, the public company of the Municipality of El Carmen, which appears to be interested in taking over the management of its infrastructures. "We heard that if we were unable to manage the community water supply, *La Cimarrona* could manage it in our place". They might soon find themselves in direct competition for the catchment areas, especially since *La Cimarrona* has a treatment plant in the same hamlet and operates water sources in the same mountains. The former administrator is equally concerned about the *Empresas Públicas de Medellin* (EPM), which has already moved into the town of Rionegro, the last bastion before the Municipality of El Carmen de Viboral. "EPM applies high rates that some people cannot afford to pay", he says.

Several people stated that access to credit first became possible thanks to the trust of financial cooperatives. It is important to place the emergence of community water management debt in the context of what can be defined as a solidarity partnership with financial cooperatives in the broadest sense. Beyond the financial link, these financial cooperatives provide innovative partnership arrangements for water associations, like the one described by Malo and Lapoutte (2003) that recognises and sometimes supports the associations in their struggle to defend community management. Indeed, these two entities of the social and solidarity economy share the same values. Both the community water associations and the financial cooperatives "tend to maintain close relationships with users and their communities" and their governance system is "based on the representative democracy of users as well as their relationship to the local territory" (Malo and Tremblay, 2004: 70). Above all, through this partnership, the associations have found recognition and support in their struggle to defend the right to self-management of water.

The representative of *El Zarzal*, an association in Copacabana, recounts his association's financial transition and in particular the relationship with the financial cooperative. After going through the Bank of Bogotá for cost reasons, the association finally decided to open an account with the CFA financial cooperative. When asked about the reasons for this change, he explains that they don't really know why, but all the associations were going there, so they followed suit. "It's the social and solidarity economy", people told him. Eventually, he admits that the relationship with the cooperative has a special significance and is linked to their access to credit: "Having a credit history gives you status, and the cooperative gave us that". He considers "the trust of the cooperatives as recognition" and says that the largest loan obtained by the association was over $36,000. He adds that the Department of Antioquia and the municipality of Copacabana sometimes provide them with infrastructure but never with money, which he interprets as a lack of trust, "or at least that's how the community feels".

The same discourse can be found in the village of *El Carmen*, where the representative of the *Cerro Samaria* association goes further. She believes that the trust of the cooperatives makes up for the lack of trust of the municipality and represents the recognition of the community model, its culture of payment and its good management. As Servet & Vallat (1998: 20) state, "(…) granting credit is first of all granting trust and in return, not granting credit expresses a distrust that feeds stigmatisation". In this respect, Guérin (2018:143) believes that "for marginalised, discriminated and denigrated populations, being authorised to take out loans by virtue of their ability to repay – and not by virtue of their status as dominated or assisted communities – is in itself a sign of recognition and emancipation, whose importance must be measured".

## 7. Redefining social relations and behavioural changes

The loans by cooperatives to water communities, which seem to accompany the path towards greater autonomy, have had a parallel impact on internal functioning and community relations with the various actors, for instance with other loan providers. According to Confiar's credit manager, the conduct of water communities confirms that repayment habits are generally better in rural areas characterized by a culture of timely debt reimbursement. This reputation as a good customer has attracted other financial entities that are now approaching the water communities with credit offers (Ecuyer, 2022). This dynamic has also had an effect on other associations, who got inspired to also take out loans. "The trust associated with the loans has enhanced the communities' reputation. A good credit history means confidence for other partners", says the credit manager.

Moreover, according to some testimonials, community water financing has also altered the stance of local authorities. "The confidence of the state increased because the financial cooperatives have established trust", said a member of the *Hondita* association. Although it is unlikely that changes in central authorities' attitudes are linked to changes in financial practices in some water communities, it is relevant to examine the relationship between local authorities and some water communities. For some of these communities, there is already a positive shift in the municipalities' stance towards the associations, in line with other financial institutions who see the water associations as good customers. The associations feel able to negotiate as they have access to a new source of funding. This could bring new opportunities for developing projects co-funded by municipalities.

We also observe a redefinition of roles within the governance of these associations, usually based on the logic of inclusion and democratic participation, which plays a major role in strengthening the social fabric of communities (Salazar, 2011; Gómez Bustos, 2012). On one hand, members who have contacts to financial institutions are becoming increasingly important within the associations. "Access to credit has been very much linked with trust, gossip in the corridors, the image of the water community, on merit, friendship issues", an association member told us. On the other hand, "people with financial skills become the persons of reference in steering committees and in decision making". Previously, people with technical skills, such as engineers, were the most valued, but as the management of credits requires qualifications, they are managed by the steering committee. This could lead to the exclusion of members from participation and decision making in this regard, widening the gap between the steering committee and the general membership. In the same way, credit may compete with *convite* practices, where the role of the community members is central.

The committee member of *El Zarzal* association mentioned earlier, is involved in community management in addition to his professional activity as a bank manager. Like the alternative banking activists analysed by Appel (2014), who use their financial expertise to affirm their autonomy and propose alternative banking systems, he uses his financial skills to serve community water management, like reviewing the economic viability of loans. "The contracting system, quotes and negotiations to reduce costs" are his daily routine. Thanks to a detailed grasp of financial management, he explains, *El Zarzal* is now able to refinance loans or sell its portfolio to another financial entity in order to obtain better interest rates. This is a significant change in working practices for an association run on community management principles. "In the medium and long term, we don't look at what we are going to earn but at what we bring to the community", he states, pointing out that he is first and foremost a member of a self-managed community, prior to being a banker. However, the impact of this new development on the association is questionable. The association's new ambitions led to the dismissal of the former treasurer, on the grounds of his lack of ambition. "He was blocking the association's growth process", says the banker. Blocking the growth process probably means being reluctant to finance infrastructure through credit.

## 8. Risk transfer and responsibilisation

This new interdependence between water communities and financial institutions is nonetheless subject to the effects of market logic. The communities are inevitably exposed to the risks and responsibilities that result from this logic. The financial cooperatives, which like all Colombian financial institutions, are controlled by the *Superintendencia Financiera*, have found a way to minimise the risks they take with the water communities. Loan repayments are directly deducted from the bank account that centralises users' fees.[14] The account also generally serves as the loan guarantee. This means that associations lacking an adequate level of formalisation and are unable to provide evidence of regular fee payment by members have more difficulties to access funding. In addition, the committee members take individual responsibility by signing the credit agreements. "The Financial Information Centre (Cifin) qualifies you before applying for a loan. Any arrears are recorded in the credit history of legal and natural persons. When you take responsibility and risks on behalf of the association, it may affect your personal situation", explains a member of the *Cerro Samaria* association. In some cases, there is a mortgage guarantee on real estate or land belonging to the association. Sometimes committee members even mortgage their own property. "If the association defaults on its mortgage, they seize our individual assets", she concludes. "They are making us responsible at the individual level", complains a member of another association.

Although most of the associations surveyed did not have to increase fees to cover loan repayment, in some cases the debt is already being passed on to members, through temporary tariff increases, for instance. This comes in addition to the pre-existing connection or late payment debt of some members. It is important to note that for some associations the concept of credit is not new, as they have already granted credit internally before. There are pre-existing internal forms of credit and informal financial arrangements for members having problems to pay their fees or being in arrears with payments. Moreover, the associations usually allow new members who cannot afford to pay the fixed entry fee of approximately US$ 185 (including network connection, purchase of a water meter, water valves and labour costs), to join the association and connect to the network on credit. This credit, interest-free or with a maximum rate of 1 %, is then refunded over a period of 24 months (about US$ 8 per month). In the medium and long term, these debt management mechanisms pose a risk of a shift towards governance by debt, as described by Lazzarato (2015) at the macro level, which might tend towards a political relation of subjection.

Some water communities now operate like any other small company, looking for the best loan and debt refinancing conditions (Ecuyer, 2022). Access to credit goes far beyond the partnership with financial cooperatives (e.g., Cotrafa, Coobelen, Cogranada, Microempresas) and includes the country's main commercial banks (e.g., Bancolombia, Banco Bogotá, BBVA) that do not engage in specific follow-up with communities. The risks of over-indebtedness may be greater as a consequence (Ecuyer, 2022). In addition, a certain dependence on credit is liable to emerge, as observed with credit refinancing mechanisms. "We can now obtain a loan from a bank and refinance or sell the portfolio to another bank to get a lower interest rate. There is a real danger today for associations of falling into a dependency trap", says a community water member. It will be interesting to observe the evolution of this process in the coming years. Will it truly strengthen communities, in their desire to defend their model or, on the contrary, will it foster their transformation into public or private water management companies?

## 9. Discussion and perspectives

This research offers avenues for reflection likely to evolve and update the theory of the governance of the commons (Ostrom, 1990), by considering the governance of community debt as an integral part of the commons management. While Ostrom's theory makes it easy to situate community water management beyond the state/market dichotomy, it appears nonetheless necessary to broaden the scope to analyse new financial practices and incorporate the notion of debt. Throughout this work, it has become clear that community practices are constantly changing. We have seen, for example, that certain older practices can coexist with new ones. This is the case with the practice of the *convite*, with decision-making on the refinancing of loans or the management of debt to finance users' volumetric meters. Community dynamics are thus diversifying and becoming more complex. In the same way, the community identity is breaking down into several interacting identities and is being shaken up by new tensions and different value systems. Several elements of the case study highlight the paradoxical nature of finance for community water organisations in their journey towards greater autonomy. It can be observed in the example of accessing to "collective" property through debt. On the one hand, credit enabled the associations to acquire the land on which the water sources were located, thereby strengthening their control over the resource. On the other hand, this same land can be used as a credit guarantee, putting community dynamics under pressure. This creates a complex interdependence governed by debt that can jeopardise the precious balance between land and water (Salazar Restrepo, 2018).

The recent political changes in Colombia with the arrival of the new government in 2022 seem to be encouraging for the recognition of water communities. In June 2023, the deputies of a Senate committee approved, in a first debate, the draft Law no. 271 of 2022. It aims to guarantee mechanisms to protect the right to community water management and the establishment of a specific legal framework (Prensa Senado, 2023). This is a new version of the *Ley propia* which retains the principles of the 2017 version, incorporating the new learning of recent years. A step forward has also been taken in terms of technical and financial support mechanisms, with the introduction of specific measures as part of the latest National Development Plan 2022–2026, such as administrative simplifications or the establishment of a community subsidy (Decreto 1697 de 2023). The article 274 of law 2294 announces that "the Ministry of Housing, City and Territory, (…), may grant a subsidy to the user fees of small providers that do not receive subsidies from municipalities or districts and a special support mechanism will be designed for the investment and sustainability of supply systems" (CNC, 2023). The purpose is to provide a discount on the value of the water tariffs issued by community organisations for granting it to lower-income subscribers. (MVCT, 2023). This requires the organisation to meet costly conditions such as a socio-economic stratification of households and pricing study, which leaves open the issue of funding sources.

## 10. Conclusion

This paper focuses on how water communities engage in finance, where water debts appear to emerge from below, without being overtly imposed from above (Morvant-Roux, 2006; Servet, 2006; Saiag, 2011; Guérin et al., 2013). It seeks to understand whether water community debt can be a means of autonomy and resilience to the neoliberal management model proposed by the state.

The case study shows the ambivalent effects of finance and the analysis of financial practices reveals a political dimension and a double movement (economy/society) as the one described by Polanyi (1957). It shows how community financial practices assume a political dimension. The argument is that credit has been an enabler of agency for the water communities (Section 6), as well as a force for governance changes within the water communities (Section 7), but also it involves the transfer of credit risks (Section 8). In the context of state withdrawal, water communities use banking services to address specific needs and innovative partnerships with local financial cooperatives. The aim is to

[14] Interview with Confiar's credit manager, 2018.

strengthen their community status through technical support and community capacity-building, but above all through credit as a bond of trust and a tool for social and political recognition. This enables them to improve water distribution systems, without depending on the unpredictable and conditional support of the state.

Note that it is difficult to affirm at this point that community water finance is deployed as a deliberate resistance strategy. The limited number of organisations operating with credits and the desire for confidentiality of some of the individuals interviewed may have resulted in incomplete data collection. The information may therefore be too partial to draw any categorical conclusions. With the data provided by the financial cooperatives it was not possible to identify any systematic rationales or practices adopted by financial institutions towards water communities. Similarly, the testimonies by community members are sometimes mixed and ambiguous. For example, opinions differ on the reasons for using credit. They range from debt as a tool of resistance to debt as a default solution.

The stakes are high for the maintenance of community water management. The paper focused on the issues of recognition and autonomy related to water debts, as well as the risks for community members. Several questions are still unanswered and much work remains to be done, particularly on the quantitative aspects. This case study is a first look at a socio-economic phenomenon hardly analysed from this angle, providing leads for further research on water governance and finance in the rural contexts of the Global South.

## Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author used Deep L / translator in order to translate some French and Spanish terms and to improve readability. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

## CRediT authorship contribution statement

**Brendan Ecuyer:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

## Acknowledgments

I gratefully thank the editors of the special issue (Philip Mader, Kate Bayliss, Pranjal Deekshit and Michael Pryke) and the peer reviewers for their helpful review which greatly improved the quality of this paper. Many thanks also to Catriona Dutreuilh, Teresa Freidl and Christian Colussi for their proofreading. I am very grateful to Solène Morvant-Roux, as well as to the Paris seminar group “Financialisation from the bottom up. A moral and political economy of debt” for giving me a privileged access to a specific theoretical understanding of financialisation. I am also very grateful to Isabelle Hillenkamp, Michel Oris and German Valencia for their theoretical contributions to my work. I would like to sincerely thank all the people and organisations who facilitated my work in one way or another. I specifically thank Bibiana Salazar, Edwin González, the representatives and members of community water organisations and all members of the Corporation Penca de Sábila. Finally, I would like to thank the Boninchi Foundation for its financial support for my fieldwork in Colombia.

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