Sodality: Jurnal Sosiologi Pedesaan Vol. 12 (02) 2024 | 162-174
https://doi.org/10.22500/12202451316
E-ISSN: 2302-7525 | P-ISSN: 2302-7517

Water Governance Conflict in Kupang: between Limited Water Debit versus Commercialization

Didimus Dedi Dhosa*)

Department of Government Science, Widya Mandira Catholic University, Kupang, 85361, Indonesia
*)*Correspondence e-mail: dedidhosa@unwira.ac.id*

Received: November 7, 2023 | Revised: June 6, 2024 | Accepted: November 25, 2024 | Online Publication: December 23, 2024

ABSTRACT

This study aims to present the long-standing water governance dilemma in Kupang, East Nusa Tenggara, which has never been fully resolved. On the one hand, the people of Kupang City and Kupang Regency experience water shortages during the dry season. On the other hand, the practice of water commercialization appears to be carried out by local political economy elites in a vulgar and massive manner. Commercialization is understood as an effort involving a set of rules, policies, and norms that empower the market to provide clean water, and even produce and distribute water to citizens. This research was a qualitative study that employed in-depth interviews with 20 informants, observations at 5 water selling locations, and focus group discussions with drinking water customers. Using the commercialization perspective, this paper challenged the view that water scarcity in Kupang is due to limited water debit, rapid population growth, and low rainfall. This study found that the water problem in Kupang was caused by the massive commercialization of water, which was dominated by the private sector with government support through water sales operation permits, as well as illegal water drilling by local communities.

Keywords: water, government, businessman, local communities

INTRODUCTION

The clean water crisis has plagued the Global South and threatened the quality of life of its populations over recent decades (Barati et al, 2023; Beard et al., 2022; Millington and Scheba, 2020; Rawlins, 2019; Salehi, 2022). Recent global data highlights that more than 1.1 billion individuals experience inequitable access to clean water (Mishra et al., 2021), and UNICEF reports reveal a sanitation deficit affecting 4.2 billion people worldwide (UNICEF, 2019).

This water crisis has attracted the attention of several world leaders, prompting them to take strategic steps to mitigate the extreme impact of poor-quality drinking water. In 2003, a meeting of Environment and Water Ministers was held in Kyoto as a response to the water crisis, which had a direct impact on the future of humanity and ecology. However, some parties view this meeting as an attempt to strengthen market dominance in the management of water and the environment at the global level (Bakker, 2004; Bakker, 2007; Bernstein, 2001).

In Indonesia, access to clean water sources for citizens faces significant challenges. Nationally, a report by the National Development Planning Agency (Bappenas) in 2018, as cited by Messakh dan Punuf, (2020), indicates that approximately 72 million Indonesians lack access to clean water. Furthermore, at the local level in East Nusa Tenggara province, only three districts have relatively well-managed water services provided by the Regional Drinking Water Company (PDAM) that adequately meet the household needs of residents, specifically East Sumba, Alor, and West Manggarai (Messakh et al., 2018).

According to a report by the Central Bureau of Statistics (2019), 75% of households in East Nusa Tenggara Province have access to clean water. However, Kupang City, the provincial capital, is one of the regions considered to have poor water management (Messakh et al., 2018). For example, in 2017, there were 48 sub-districts in Kupang experiencing a clean water shortage (Wishanti, 2021). In response to this problem, the local government has taken steps to provide water tanks that are used to sell water to the community (Aminah, 2017; Asa, 2020; Wishanti, 2021).

Previous studies by Hauteas et al (2021), Messakh et al (2015), Raya et al (2020), and Theodolfi dan Waangsir (2014) tend to look at population numbers and consumption levels linked to the availability of water discharge in Kupang, and the study of Messakh et al (2015b) compared rainfall across five stations to measure water availability in Timor. The approach developed in this series of articles can be summarized into geographical and climatic perspectives.

In Indonesia, studies on water conflicts tend to be limited to identifying the actors involved in struggles over this resource, between pro and con parties, as well as conflicts between sectors over water. The government and corporations are often grouped and supported by segments of society that benefit from government policies (Hakim et al, 2017; Strauß, 2011). Other studies have examined institutional challenges in developing water-sensitive cities (M. Kösters, 2019; Paramita Rahayu et al, 2021), and water governance in relation to gender and feminist political ecology (Cole, 2017; Indarti, Rostiani, and Megaw, 2019). Additionally, several studies discuss the dimensions and indicators of urban water security (Wuysang and Soeryamassoeka, 2021), community participation in supporting water availability programs (Maryati, Firman, Humaira, 2022; Djono and Daniel, 2022), and the vulnerability of water availability at the local level (Rahayu, Rini, Soedwiwahjono, 2019). Unlike previous studies on water problems in Timor and Indonesia in general, this paper presents a critical perspective on the commercialization of water. Water sources in Kupang are being contested for commercialization by four main actors: borehole owners on private land, water tank owners, the Regional Drinking Water Company (PDAM), and bottled water companies that extract water from springs in Kupang. This paper will explain how these actors contest through the practice of water commercialization.

The privatization of the commons is a tactic of capital accumulation rooted in the historical process of primitive accumulation (Marx, 1976). Marx conceptualized primitive accumulation as the 'historical process of separating the producer from the means of production.' The exclusion of peasants from their land, whether through violence or state policy, served as the entry point for these peasants into neoliberal market networks.

In the context of increasing modernization, the practice of capital accumulation has undergone a metamorphosis, taking on various forms in different places, a phenomenon that Harvey (2003) has termed 'accumulation by dispossession' (Ahmed, 2019; Englert, 2020; Frederiksen and Himley, 2020). Privatization, as a component of capital accumulation driven by the neoliberal state (Harvey, 2005), is

a result of state policies that grant the market increased authority to assume roles traditionally held by the public sector.

Despite its widespread use, the concept of privatization is subject to diverse interpretations across different academic disciplines. A literature review by Radić et al (2021) highlights a comprehensive overview of these variations, highlighting the differing perspectives in public administration, sociology, and political science. These fields, as noted by Radić et al (2021), define privatization as encompassing deregulation or a reduction in excessive state regulations and activities. Conversely, in the fields of management, finance, and economics, scholars tend to view privatization more narrowly as the transfer of state-owned enterprises (SOEs) to private entities. This concept indicates that state power over national resources, which were initially managed by the government for the common good, is gradually, or even swiftly, transferred to private entities, whether a small portion or a significant share of state assets.

Referring to previous literature reviews, Radić et al (2021) subsequently divided privatization into four macro-areas, namely what they termed antecedents, outcomes, mediating processes, and moderators. At the antecedent level, for instance, they explain what drives governments to privatize all state assets/SOEs to the private sector. The answer to this question, according to Radić et al (2021), is explained through the levels of country-level determinants and firm-level determinants.

In the realm of outcomes, Radić et al (2021) argue that the primary justification for privatization is that transferring management from the state to private agents can lead to a more effective increase in shareholder wealth compared to when it was under state control. Furthermore, the mediation process of privatization can involve incentive systems, managerial attitudes, organizational structure, and even organizational culture.

Finally, the moderators of privatization, according to Radić et al (2021), refer to a number of factors that have a significant impact on the outcome of privatization. These include institutional quality, which encompasses governance mechanisms and political influences.

These four aspects, in practice, are not solely driven by the desire to make SOEs more effective throughout their entire operational chain. Instead, the profits from privatization policies can be used as capital to repay domestic and foreign debts. Additionally, they can also be used as capital in electoral political contests (Radić et al 2021). Consequently, the benefits of privatization are distributed among various stakeholders in diverse ways.

Within the political ecology of water privatization, Bakker (2003) argues that privatization should be understood more broadly as a shift from a 'state hydraulic' to a 'market conservation' mode of water regulation. Privatization, therefore, represents a form of transformation and increased control from the public to the private sector. This involves a transfer of ownership of resources. This transfer also results in a shift in corporate management from a community-based to an individual-based approach.

Privatization and commercialization are inextricably intertwined, with the latter often influencing public policy decisions (Bakker 2003). This dynamic represents a fundamental shift in power relations, as control over water resources is transferred from the public to the private sphere. This transfer can manifest through various mechanisms, including changes in ownership and management responsibilities (Radić, Ravasi, Munir 2021; Sato and Matsura 2019; Pan, Cheng, and Gao 2022).

The management of water in Indonesia stands at a crossroad between state control over water access and market commercialization mechanisms. Commercialization in this context refers to a set of rules, policies, and norms that empower the market to provide, produce, and distribute water to the public. The entry of the market into Indonesia's water management is closely linked to the active role of the state in establishing several market-friendly regulations (Hadipuro, 2010), a phenomenon that Harvey refers to as the 'neoliberal state'.

Employing a regulatory perspective, Hadipuro (2010) argues that the Indonesian government has shifted from a highly centralized water management regime, as embodied in Law No. 11 of 1974, exemplified by Law No. 7 of 2004 that tends to create opportunities for the market to profit. According to Hadipuro (2010), Law No.7 of 2004 on water resources serves as an entry point for ideological changes in water governance in Indonesia. Furthermore, the government enacted a policy in 2005 that incorporated private entities into the water supply system for citizens (Hadipuro, 2010). This policy change paved the way for the commercialization of water services in various regions of Indonesia, including East Nusa Tenggara.

The theoretical framework employed in this study is commercialization. Grounded in Marxist political economy, this perspective views social relations and monopolies over the means of production as central to the accumulation of capital. Commercialization and these social relations are reinforced by state policies that tend to favor the economic interests of elites. Within this framework, the study aims to uncover how the practice of water commercialization by various actors in Kupang, amidst public complaints about water scarcity, is both supported and legitimized by the government.

METHOD

This qualitative descriptive study aimed to trace conflicts in water resource management arising from the commercialization of water. The qualitative research paradigm sought to explore and comprehend the meanings associated with this social problem. Within this framework, the researcher endeavored to uncover the underlying factors contributing to the observed social phenomenon. Consequently, an interpretive and theoretical framework was employed to understand the conflicts in water management (Häder, 2022; Islam, Khan, Baikady, 2022).

This research was conducted in Kupang City and Kupang Regency, East Nusa Tenggara province, from 2021 to 2022, with a follow-up study in April 2024. The primary reason for selecting Kupang Regency as the research site was twofold. Firstly, a significant portion of the boreholes and water sources in Kupang City are owned by the Kupang Regency Regional Water Company (PDAM). Secondly, several villages in Kupang Regency possess abundant raw water resources, serving as a buffer zone to supply water for residents of Kupang City. The village of Baumata in Taebenu district, a rural area bordering Kupang City, was chosen as the research location. This village boasts the largest water source in Kupang Regency, utilized by the Kupang City PDAM, and concurrently serves as the primary source for two mineral water companies consumed by Kupang City residents: PT Aquamor and PT Aquafit.

Three primary methods were employed to gather primary data: in-depth interviews, observations, and focus group discussions. Firstly, in-depth interviews were conducted. To identify suitable informants, purposive sampling was utilized to select individuals possessing adequate knowledge and information regarding water governance in Kupang. A total of 20 informants were interviewed, representing various stakeholders including government officials, private sector representatives (businesses, entrepreneurs), employees, and water consumers. More specifically, the interviews were conducted with directors and staff from both Kupang City and Kupang Regency PDAMs, water tank owners, tank drivers, borehole owners, and consumers who purchased water from tank trucks. Semi-structured interviews were conducted to ensure a comprehensive and focused data collection.

Secondly, participant observation was employed. Researchers conducted observations at five borehole locations to witness the process of water sales from borehole owners to water tank trucks. These five observation sites included two boreholes in Baumata village, Taebenu district, Kupang Regency, and three locations in Kupang City: Liliba, Pohon Duri, and Oepura. Additionally, researchers accompanied tank truck drivers to observe the water distribution process to customers. For an entire day, researchers joined drivers in delivering water to various customers.

Thirdly, focus group discussions were conducted involving individuals with substantial knowledge of water governance conflicts in Kupang. These discussions were held twice and facilitated by a set of guiding questions for conversation.

The researcher employed these three methods to ensure the triangulation, comprehensiveness, validity, and critical analysis of the collected data. The primary data was categorized based on research priorities and subsequently analyzed through the lens of commercialization, informed by a comprehensive review of relevant journals and books directly related to the research focus.

RESULTS AND DISCUSSION

Kupang as a Semi-Arid Region and Water Crisis

The scarcity of water in Kupang has been a longstanding issue. The community has consistently faced challenges in meeting its domestic water needs, particularly during the dry season. Higher-income households have been able to mitigate these challenges by purchasing water from water tank trucks.

However, low-income households have found this option financially prohibitive. Consequently, Kupang City and Kupang Regency have become a stage for the contestation of economic and political actors seeking to accumulate capital through the commercialization of water. This situation of water scarcity can be explained through the following two prevailing perspectives.

The first perspective to analyze the water crisis in Kupang is the geographical-climatic perspective, as represented by (Messakh, 2020b; Raya, Ivonia Isabela, 2020b). According to these studies, Kupang is located in a semi-arid region. A semi-arid region is characterized by very low rainfall over limited periods and prolonged dry seasons. The majority of water flow is concentrated between December and March, while water shortages are prevalent from April to November. These conditions are also influenced by average air temperature. In Kupang, the average minimum temperature ranged from 20.1°C to 24.5°C, while the average maximum temperature ranged from 29.9°C to 35.2°C. Consequently, the overall average temperature was approximately 27.5°C. The relative humidity levels in the region fluctuated between 64% and 90%, and there were an average of 110 rainy days per year.

Raya et al (2020) reported an annual rainfall of 731.12 mm in Kupang City. Consequently, the average annual rainfall in Kupang was less than 1,500 mm, classifying it as low rainfall. Data indicates that the lowest rainfall occurred in August, with a potential of only 1.0 mm. Conversely, the highest rainfall was recorded in February, with a potential of 93.05 mm (Raya et al 2020). Rainfall in Kupang is concentrated within a relatively short period, with an average of only 80 rainy days per year (Messakh et al, 2018).

Rainfall patterns significantly influenced the fluctuations in water availability within Kupang's river systems. Several rivers in Kupang possessed substantial water discharge potential, making them suitable for water supply. However, the seasonal nature of rainfall, concentrated within a three-month wet season, resulted in substantial reductions in river flow during the prolonged dry season across all river basins. Raya et al (2020) reported that the largest river in Kupang was located in Maulafa subdistrict, with a potential discharge of 50,866.091 liters per second. In contrast, the lowest potential discharge was observed in Alak subdistrict, at 14,879.016 liters per second. Furthermore, among the numerous springs in Kupang, Raya et al (2020) identified the spring in Kota Raja subdistrict as having the highest water yield, estimated at 316.90 liters per second. Conversely, Maulafa subdistrict had the lowest estimated spring discharge at 125.67 liters per second.

The second group argued that Kupang's water crisis was attributed to the suboptimal utilization of water resources, including river systems, springs, and boreholes. Consequently, residents frequently complained of water scarcity, despite Raya et al (2020, p. 27) assertion that water was not limited in Kupang. According to their assessment, the total available water (assets) across six subdistricts amounted to 147,120,000 m^3/year. However, the total water consumption and demand (liabilities) was 129,120,000 m^3/year. While the water supply in three subdistricts was sufficient to meet annual demand, Oebobo, Kota Raja, and Kelapa Lima subdistricts experienced water deficits due to consumption exceeding supply.

Legal and Illegal Water Boreholes Amid the Water Crisis

Amid discussions about the scarcity of clean water and declining water levels during the dry season, the government has granted permits to individuals and corporate groups in the business of utilizing and commercializing water. Data obtained from the East Nusa Tenggara Provincial Licensing Office shows that there are operational licenses for businesses in the groundwater sector as shown in the following Table 1.

Table 1 shows fluctuations in the number of groundwater utilization and borehole permits. From 2016 to 2021, the highest number of groundwater usage and business permits was recorded in 2017, with 35 permits. This number continued to decline, reaching 13 permits in 2021. At the company operations level, the highest number of groundwater boreholes company permits also occurred in 2017, with 28 permits. In 2020, the number dropped to 27 and further decreased to only 5 company permits in 2021.

The permits granted and facilitated by the state to individual actors, groups, or corporations for capital accumulation through water commercialization raise serious problems in the discourse surrounding water as *the common* versus water as a commodity. As *the commons*, water is considered a shared resource, managed fairly by the state, and used for the benefit of all citizens. In contrast, as a commodity, water becomes contested, privatized, and commercialized for the purpose of capital accumulation.

Table 1. Boreholes Permits in Kupang

No	Type of Business	Permit Year					
		2016	2017	2018	2019	2020	2021
1	Permits for the provision, allocation, use, and exploitation of Water Resources in the River Basin Across Regency/City	-	3	-	-	-	-
2	Spring Water Utilization Permit (SIPMA)	-	2	-	-	-	-
3	Boreholes Permit (SIP)	-	24	-	-	-	2
4	Groundwater Use and Business Permit (SIPPA)	-	35	11	17	21	13
5	Groundwater Boreholes Company Permit (SIPPAT)	8	28	5	5	27	5
6	Boreholes Certificate	-	28	4	4	-	-
7	Groundwater Borehole's License	-	-	-	-	21	6

Source: Licensing Office of East Nusa Tenggara Province (2022)

The government's facilitation of permits for individuals, groups, and corporations to accumulate capital through water commercialization raises serious issues regarding the concept of water as *the commons* versus water as a *commodity*. As *the commons*, water is shared, fairly managed by the state, and used for the public good. When treated as a commodity, water becomes privatized and commercialized for profit.

In the city of Kupang, to meet the demand for clean water, residents manually dig wells and drill boreholes using machines, whether through official government permits or illegally. The Research Report on the Potential Development of Groundwater Management and Zoning in Kupang City (2007), as cited by (Raya, Ivonia Isabela, 2020b) explains that there are more than 6,000 dug wells spread across all sub-districts in Kupang. Of this number, 3,100 dug wells have been documented.

Almost all areas in the city of Kupang have dug wells. The regions with the highest number of wells are Maulafa, Oebufu, Pasir Panjang, and Oesapa. In these areas, nearly every 3-4 houses have one dug well. Additionally, wells are also spread across Oebobo, Sikumana, Oetona, Labat, Oepura, Naikoten, Tofa, Bakunase-Manulai, and Tabun. The topography of Kupang, characterized by high hills and some low-lying coastal plains, also affects the depth of water in the boreholes. The depth of the wells ranges from 1.2 to 2 meters in the Oesapa-Pasir Panjang area, which is a low-lying coastal region, and in Airmata, which is close to a water source. Furthermore, dug wells can reach depths of up to 50 meters (Adoe 2008, cited in (Raya, Ivonia Isabela, 2020a).

Other data indicates that there are 11 boreholes in the city of Kupang managed by the Groundwater Development Project (P2AT) of Kupang City. In addition, the Regional Drinking Water Company (PDAM) of Kupang manages 13 boreholes, and there are 9 boreholes managed by various institutions such as government agencies, educational institutions, seminaries, universities, private entities, and individuals. The largest availability of borehole water is found in Kelapa Lima, with a flow rate of 57.13 liters per second (Raya, Ivonia Isabela, 2020a).

Dug wells and boreholes owned by residents for household purposes, as well as those managed by companies and even individual actors aiming for capital accumulation, have both direct and indirect impacts on the water supply in Kupang. The practice of water sales by borehole owners constitutes a form of water grabbing, where water, initially conceived as a shared resource (*the commons*), shifts to private ownership, is privatized, and then transitions to commercialization.

Water Commercialization Amid Complaints of Limited Water Supply in Kupang

The massive commercialization occurring in Kupang is not a new phenomenon in Indonesia. It is partly a result of the privatization and commercialization of water stemming from New Order policies in 1967/1968. Through two laws—the foreign investment law and the domestic investment law—Indonesia was flooded with foreign investments, as well as investments from its own citizens, particularly Suharto and his cronies (Robison and Hadiz, 2004). As investment opportunities were opened wide, capital was increasingly reproduced at the local level by local elites following the fall of the New Order regime.

In Kupang, the commercialization of water used for household needs is a common occurrence. Water governance appears ironic because while poor residents complain about their limited access to clean water, at the same time, massive and systematic practices of water commercialization are taking place, supported and legitimized by local government policies.

At least, water commercialization in Kupang is carried out through two clusters. The first is managed by village institutions, and the second by individuals with land and financial resources. These two management models will be explained in the following sections. Comparing these two water management approaches aims to provide a critical perspective on privately run water management by individuals vis-à-vis communal management by official institutions.

First, water management by village institutions, specifically in Baumata Village, Kupang Regency. Baumata Village has a significant potential for groundwater. This village is located in the Taebenu Sub-district of Kupang Regency. The water springs in this village are managed by several private companies as well as the Regional Drinking Water Company (PDAM) of the Kupang government, which supplies water to the residents of Kupang City.

The village of Baumata has invested capital to manage its water resources to avoid becoming a mere spectator of its own water sources, which are increasingly being managed by several private companies. The sale of water from Baumata's springs began in 2016. In 2021, water was sold at 20,000 rupiah per tank. However, due to a decline in customers—who opted to get water from a police-owned borehole in Venun, located not far from Baumata's spring—the village lowered the price to 15,000 rupiah per tank, a rate that remains in effect to this day. The number of tanks varies daily, both in the rainy and dry seasons. During the rainy season, around 5-10 tanks come each day, while in the dry season, the number can reach 20-30 per day.

The total monthly revenue during the rainy season ranges between 3-5 million rupiah. Meanwhile, revenue during the dry season is around 5-7 million rupiah per month. Of course, the income is always fluctuating. The funds generated from the sale of raw water to the water tanks are used for the development of Baumata village and for the benefit of its community. This stands in contrast to the commercialization of water by private companies, which generate large profits for the purpose of capital accumulation.

Secondly, the practice of water commercialization by the local economic-political elite. The massive sale of water by tank operators in Kupang during the dry season essentially challenges the government's narrative, which consistently argues that water availability in Kupang is very limited. While the water supply has indeed decreased, field evidence shows that water sales have never stopped and that hotels and several companies actually have their own water sources, extracted from the ground, to support their operations.

The abundant water supply is essentially supported by the distribution of karst layers, which serve as reservoirs for clean water. Kupang, as a semi-arid region, has abundant karst reserves, as emphasized by Darmawan & Lastiadi (2010) with vast raw water reserves stored beneath these karsts (Dhosa, 2019). The emerging issue is that the abundance of raw water is being managed by private entities through both legal and illegal boreholes, driven by private-commercial interests.

The commercialization of clean water by private entities is carried out through boreholes that are fairly evenly distributed across Kupang. Three boreholes represent this practice in Kupang, located in the areas of Liliba, Oepura, and Pohon Duri. First, *Bigness Water* (BW) is the name of a borehole in Liliba. The owner of BW is Minggus Konai, a well-known figure in Kupang and regarded as one of the wealthiest landowners in the city. The BW borehole is one of the largest water sources in Kupang. Every day, dozens of water tanks line up, waiting for their turn to fill water.

Cici, the cashier at BW, shared that the daily revenue from the BW borehole is highly uncertain because it depends on the number of water tank trucks filling up, which in turn indirectly depends on the number of orders for water. According to Cici, BW's daily revenue ranges from over one million to more than two million rupiah. On Sundays, revenue can reach around 800 thousand rupiah. Regardless of whether it's the rainy season or the scorching dry season, the BW area is always crowded with water tank trucks.

The price of water at the BW borehole varies depending on the capacity of the water tanks. The income from this clean water commercialization is used for private capital accumulation. Data collected on April 29, 2024, from 07:00 to 19:00 WITA shows the water prices, the number of tanks, and the total volume of water sold per day, as summarized in the following Table 2.

Table 2. Water Price and Number of Tanks

Boreholes Location	Tanks Sizes (Liters) and Price	Number of Tanks	Total Debit Water
Liliba	3.000 liters = Rp. 15.000	1	650.000 liters
	4.000 liters = Rp. 15.000	14	
	5.000 liters = Rp. 20.000	69	
	6.000 liters = Rp. 25.000	41	
Pohon Duri	5.000 liters = Rp. 10.000	54	636.000 liters
	6.000 liters = Rp. 10.000	61	
Oepura	5.000 liters = Rp. 15.000	19	131.000 liters
	6.000 liters = Rp. 15.000	6	

Secondly, there is also a borehole in Pohon Duri, Kelapa Lima District, Kupang City, owned by Ber Long, who is of Rote descent. BL owns three boreholes at the same location. The water sold is drawn from these boreholes located on his land. The price for water sold to tank operators is Rp. 10,000 (ten thousand rupiah). According to Yos, a laborer responsible for overseeing the borehole and filling the tanks, around 50-100 tanks collect water from the Pohon Duri borehole daily during the rainy season. The number of tanks increases sharply during the dry season, reaching around 200 tanks per day. Yos stays on duty from early morning until night to assist drivers in filling their tanks (Y, Kupang, 27/1/2022). Similar to BW, the water commercialization business operated by BL also supports personal and family capital accumulation.

Thirdly, the commercialization of clean water from boreholes in Oepura. One of the borehole owners is a civil servant (ASN) working for the Kupang Regency government. The number of water tank trucks queuing and parking around his borehole is large and often overflows. In addition to this civil servant, most of the boreholes in the Oepura area are owned by the Foenay family, a prominent noble family in Timor known as landowners due to their extensive land holdings. These boreholes are located very close to the Kupang Regency PDAM (Regional Drinking Water Company) office, along with its various equipment and machinery.

In addition to village enterprises and individual economic-political elites, the commercialization of water is also carried out by companies that manage drinking water for sale to consumers in Kupang. Two private companies involved in bottled water production are PT Aquamor and PT Aquafit. The owners of both companies come from political circles in East Timor and West Timor. These two companies extract water from the raw water springs of Baumata in Kupang Regency. The owner of Aquafit is a local elite from Malaka Regency, belonging to a family that dominates the bureaucracy and legislature in the regency as well as the provincial legislature of East Nusa Tenggara (NTT). Some members of this family also hold key positions on the board of directors at Bank NTT. Their strong access to political and economic resources enables this group to manage water from the Baumata spring, one of the main sources of clean water consumed by residents of Kupang Regency and Kupang City.

Unlike literature that views water grabbing as the large-scale acquisition of land for agricultural activities, this writing emphasizes the commercialization of water in non-agricultural areas, specifically for household consumption. The persistence of water commercialization practices is enabled by state support. The provincial government of East Nusa Tenggara (NTT) grants operational permits to borehole entrepreneurs, well drillers, and water tank owners, allowing them to form a water business network (cf. NTT Provincial Licensing Office, 2022). The irony is that this occurs precisely when the public is experiencing water shortages.

Harmful to the Public, Beneficial to the Elite

The limited water supply due to scarce rainfall in semi-arid regions should ideally be managed professionally by the state, with a commitment to social justice principles for all citizens. However, what is happening is state inaction regarding the widespread practice of water sales by private entities. This reinforces the discourse promoted by proponents of neoliberal regimes under what they term "neoliberalism of nature" and "environmental neoliberalism." According to market advocates, the water crisis can only be solved if and only if it is managed by the market, without any state intervention in the market, and even without state capitalism (Chorbajian, 2021; Dolfsma, Wilfred, 2019).

Amid the clean water crisis in Kupang, actors who profit materially are emerging. The water crisis in this semi-arid region of Indonesia thus gives rise to contrasting interests. On one side, low-income residents have to spend money to buy water sold from tanks. If they use water supplied through PDAM pipelines, the cost they often have to pay is high—not because of the amount of water flowing, but due to the air pressure coming out of the faucet pipes.

On the other hand, tank owners are reaping substantial profits from the commercialization of water. A source, a water tank owner in the Baumata residential area in Kupang Regency, rejected the intent and effort of PDAM Kupang Regency officers who wanted to install water pipes and meters at his house. Two main reasons underlie this stance. First, PDAM pipes, both in the city and regency, do not supply water consistently. What mostly comes out is air, with relatively high costs for customers. If water does not flow for weeks, customers still have to pay the basic fee to PDAM and even incur late payment penalties. Second, to secure profit and accumulate personal capital, he rejects the installation of PDAM pipes and meters. He can instead obtain clean water through his tank truck. With this tank truck, he can distribute water to most customers in the RSS Baumata residential area in Kupang Regency. This is precisely where economic capital aggregation interests are constantly reproduced whenever customers need water, especially as state-managed water resources continue to face issues.

Most of the tank owners belong to the middle class, as defined by Klinken (2015) and Tanter (2018). The longer the water crisis persists, the greater their profits become. They capitalize on each water crisis affecting the Global South, including East Nusa Tenggara.

Unlike the tank owners, drivers as laborers face their challenges in dealing with the water crisis and water commercialization. The practice of commercialization always places large capital owners on the winning side, while their workers are on the losing side. Drivers must seek out as many customers as possible and deliver water whenever needed. Each vehicle has different rules. Some vehicle owners set a fixed amount that employees must remit. The daily earnings of the water tank determine how much salary the tank owners will pay the drivers. These are the factors that shape the livelihood struggles of water tank employees.

The profits that drivers earn in the water commercialization chain depend on certain seasons. The rainy season, lasting about three months, is very disadvantageous for them. Following that, they gain profit when the clean water crisis occurs from April to November. Thus, while residents generally struggle to access clean water for approximately eight months, the drivers are fortunate, and beyond them, the tank owners reap the largest profits from the commercialization of clean water.

A driver who also serves as a resource person, Adi Tanesib, explained during an interview that there are four water seasons for tank truck drivers. The first season is from January to May. During this period, rainfall occurs, resulting in fewer customers ordering water from tankers. As a consequence, tanker drivers face difficulties earning income from water sales. The second season is from June to August, which he refers to as the 'moderate average' period, where the demand for tanker water increases significantly. The third season is from September to November, which marks the peak of tanker water demand. Kupang experiences extreme summer during this time, causing residents to require more water. The fourth season is December, during which there are still many customers, but the demand slightly decreases as the rainy season begins (AT, Kupang, 01/26/2022).

In response to the dual nature of the water crisis—disadvantaging the majority of residents while simultaneously benefiting a small economic-political elite—a critical discourse on water as *the commons* and water as a commodity becomes a *conditio sine qua non* at both the local level in East Nusa Tenggara and nationally across Indonesia. The choice of whether to return water management to the state, delegate part of it to the market with state intervention, or allow the market to take full control is a position that must be determined.

Yan Muliana, the head of the technical division at the Regency PDAM, protested against the widespread practice of water sales by tanker trucks in Kupang. For him, water as public property must be managed by the state, one way being through PDAM. This is because, in addition to its profit orientation, PDAM has a stronger social focus. In contrast, water tankers are primarily business-oriented rather than socially driven. In his view, the water supply in Kupang is relatively stable, and distribution to customers tends to be more equitable if managed integrally by the state through PDAM (YM, Kupang, 12/20/2021). However, the increasing commercialization by numerous water tankers filling the streets of Kupang indicates that part of the state's role has been taken over by private actors—a common trend in Indonesia resulting from the destruction of the leftist movement in 1965 (Bevins, 2021; Cribb, 2016; Dhosa, 2017).

Since the collapse of the leftist movement, Indonesia has lost its progressive groups that advocated for social justice and opposed the expansion of neoliberal markets. Excessive (water) commercialization reflects market dominance driven by profit-seeking and capital accumulation, something the leftist movement opposed.

CONCLUSION

This study has shown that water scarcity in Kupang is not solely caused by limited water discharge, low rainfall, or Kupang's status as a semi-arid region, as commonly stated by many sources. The high demand for water, especially during the dry season, has turned Kupang into a contested arena where various actors seek to accumulate capital through water commercialization practices. Water scarcity has become an economic battleground for political and economic elites who engage in large-scale water businesses.

In contrast to mainstream views, this paper argues that water scarcity in Kupang is also driven by excessive commercialization practices led by local economic and political elites. These elites include private well owners, companies that produce bottled water from springs, and tank owners.

Private well owners sell water to tank operators, who then sell it to customers. These actors enjoy financial gains while public access to water remains limited. While water on privately owned land can rightfully be used for household consumption, the issue arises when it is sold to the public on a large scale. Several companies also profit from these water commercialization practices, with actors competing to accumulate capital.

Water commercialization did not emerge in a vacuum. It has not been restricted by the state but instead legally facilitated through the issuance of business licenses. Local governments, as part of the state apparatus, have actively paved the way for the legal commercialization of water. Water is privatized, contested by individuals with varying economic and political power, and commodified. This is the root cause of the water crisis in Kupang.

The points above refute the narrative put forward by the local government in East Nusa Tenggara (NTT), which tends to attribute the water shortage solely to limited groundwater resources. In reality, this narrative conceals the political and economic relationships between water commercialization actors and the government.

ACKNOWLEDGMENT

This research was funded by a project on the politics of water provision in Indonesia, in collaboration with PolGov, Universitas Gadjah Mada, under contract number 992.5/UN1/FSP.2/DPP-PolGov/Rst.6/X/2021.

BIBLIOGRAPHY

Ahmed, Y. M. (2019). The social life of wheat and grapes: domestic land-grabbing as accumulation by dispossession in rural Egypt. *Review of African Political Economy*, *46*(162). https://doi.org/10.1080/03056244.2019.1688486

Al, R. et. (2021). Privatization: Implications of a Shift from State to Private Ownership. *Journal of Management*, *XX*(X), 1–34. https://doi.org/10.1177/0149206320988356

Aminah, A. N. (2017). *BPBD Kupang sediakan 100 Tangki Air Bersih atasi Krisis*.

Asa, S. (2020). *Pemkot Kupang Siapkan 500 Tangki Air untuk Warga Terdampak Kekeringan*.

Bakker, K. (2004). *An Uncooperative Commodity: Privatizing Water in England and Wales*. Oxford University Press.

Bakker, K. J. (2003). A Political Ecology of Water Privatization. *Studies in Political Economy*, *70*(1), 35–58.

Bakker, K. J. (2007). The "Commons" Versus the "Commodity": Alter-globalization, Anti-privatization

and the Human Right to Water in the Global South. *Editorial Board of Antipode*.

Barati, Ali Akbar, Milad Dehghani Pour, M. A. S. (2023). Water crisis in Iran: A system dynamics approach on water, energy, food, land and climate (WEFLC) nexus. *Science of The Total Environment*, *882*(163549). https://doi.org/10.1016/j.scitotenv.2023.163549

Beard, V. A., Satterthwaite, D., Mitlin, D., & Du, J. (2022). Out of sight, out of mind: Understanding the sanitation crisis in global South cities. *Journal of Environmental Management*, *306*, 114285. https://doi.org/10.1016/j.jenvman.2021.114285

Bernstein, S. (2001). *The Compromise of Liberal Environmentalism*. Columbia University Press.

Bevins, V. (2021). *The Jakarta Method: Washington's Anticommunist Crusade and the Mass Murder Program that Shaped Our World*. Public Affairs.

Chorbajian, L. (2021). *Power and Inequality: Critical Readings for a New Era*. Routledge.

Cole, S. (2017). Water worries: An intersectional feminist political ecology of tourism and water in Labuan Bajo, Indonesia. *Annals of Tourism Research*, *67*, 14–24.

Cribb, R. (2016). *The Indonesian Killings: Pembantaian PKI di Jawa dan Bali 1965-1966* (R. Cribb (ed.)).

Darmawan, A., & Lastiadi, H. A. (2010). Geologi lingkungan dan fenomena kars sebagai arahan pengembangan wilayah perkotaan Kupang, Nusa Tenggara Timur. *Jurnal Lingkungan Dan Bencana Geologi*, *1*(1), 11–26. http://jlbg.geologi.esdm.go.id/index.php/jlbg/article/view/2

Dhosa, D. D. (2017). Akumulasi Kapital, Penghancuran Gerakan Kiri, dan Kemiskinan di Nusa Tenggara Timur. *Jurnal Pemikiran Sosiologi*, *4*(2), 19–35.

Dhosa, D. D. (2019). Land Acquisition, Peasant Exclusion, and People Resistance Advocacy at Bolok Industrial Area in Kupang, East Nusa Tenggara, Indonesia. *Sodality: Jurnal Sosiologi Pedesaan*, *7*(3), 167–181. https://doi.org/10.22500/sodality.v7i3.27169

Dolfsma, Wilfred, A. G. (2019). State Capitalism Revisited: A Review of Emergent Forms and Developments. *Journal of Economic Issues*, *53*(2). https://doi.org/10.1080/00213624.2019.1606653

Englert, S. (2020). Settlers, Workers, and the Logic of Accumulation by Dispossession. *Antipode*, *52*(6), 1647–1666. https://doi.org/10.1111/anti.12659

Frederiksen, T. and M. H. (2020). Tactics of dispossession: Access, power, and subjectivity at the extractive frontier. *Transactions of the Institute of British Geographers*, *45*(1), 50–64. https://doi.org/10.1111/tran.12329

Häder, M. (2022). *Empirical Social Research: An Introduction*. Springer.

Hadipuro, W. (2010). Indonesia's water supply regulatory framework: Between commercialisation and public service? *Water Alternatives*, *3*(3), 475–491.

Hakim, Lukman Agus, Lala M Kolopaking, Hermanto Siregar, E. I. K. P. (2017). Struggle for Resources Water: Analysis Conflict and Politics of Spatial Planning. *Sodality: Jurnal Sosiologi Pedesaan*, *5*(2). https://doi.org/10.22500/sodality.v5i2.17901

Harvey, D. (2003). *The New Imperialism*. Oxford University Press.

Harvey, D. (2005). *A Brief History of Neoliberalism*. Oxford University Press.

Hauteas, Imel, J. J. M. dan P. G. T. (2021). Kajian Debit Aliran Kali Liliba Kota Kupang, di Daerah Semi-Arid Menggunakan Alat Apung dan Alat Flow Meter. *Jurnal Batakarang*, *2*(2).

Indarti, Nurul, Rokhima Rostiani, Tamara Megaw, J. W. (2019). Women's involvement in economic opportunities in water, sanitation and hygiene (WASH) in Indonesia: Examining personal experiences and potential for empowerment. *Development Studies Research*, *6*(1). https://doi.org/10.1080/21665095.2019.1604149

J. E. Wuysang, S. B. S. (2021). A Study on Developing Theoretical Framework, Dimensions, and Indicators of Urban Water Security in Indonesia. In N. D. Mukand Babel, Andreas Haarstrick, Lars

Ribbe, Victor R. Shinde (Ed.), *Water Security in Asia: Opportunities and Challenges in the Context of Climate Change* (pp. 123–134). Springer.

Klinken, G. van. (2015). *The Making of Middle Indonesia: Kelas Menengah di Kota Kupang, 1930an-1980an*. Yayasan Pustaka Obor Indonesia-KITLV.

M. Kösters, F. B. & K. S. (2019). Institutional inertia: challenges in urban water management on the path towards a water-sensitive Surabaya, Indonesia. *International Journal of Water Resources Development*. https://doi.org/10.1080/07900627.2019.1662378

M. Rezaul Islam, Niaz Ahmed Khan, R. B. (2022). *Principles of Social Research Methodology* (R. B. M. Rezaul Islam, Niaz Ahmed Khan (ed.)). Springer.

Marx, K. (1976). *Capital: A Critique of Political Economy*. Penguin Books.

Messakh, Jakobiis Johanis, D L Moy, D Mojo, Y. M. (2018). The linkage between household water consumption and rainfall in the semi-arid region of East Nusa Tenggara, Indonesia. *Earth and Environmental Science 106*. https://doi.org/10.1088/1755-1315/106/1/012084

Messakh, Jakobis J., Arwin Sabar, Iwan K. Hadihardaja, dan Z. D. (2015). Management Strategy of Water Resources Base on Rainfall Characteristics in The Semi-Arid Region in Indonesia. *International Journal of Scientific & Engineering Research*, *6*(8).

Messakh, Jakobis Johanis, Arwin Sabar, I. K. H. dan A. A. C. (2015). Kajian Pemenuhan Kebutuhan Air Minum untuk Masyarakat di Kawasan Semi-Arid Indonesia. *Jurnal MANUSIA DAN LINGKUNGAN*, *22*(3), 271–280.

Messakh, J. J. and D. A. P. (2020a). Study on the accessibility of water sources to meet the water needs of rural communities in semi-arid regions of Indonesia. *The 3rd International Conference on Eco Engineering Development. IOP Conf. Series: Earth and Environmental Science 426*. https://doi.org/10.1088/1755-1315/426/1/012043

Messakh, J. J. and D. A. P. (2020b). Study on the accessibility of water sources to meet the water needs of rural communities in semi-arid regions of Indonesia. *The 3rd International Conference on Eco Engineering Development. IOP Conf. Series: Earth and Environmental Science 426*. https://doi.org/10.1088/1755-1315/426/1/012043

Millington, Nate, S. S. (2020). Day Zero and The Infrastructures of Climate Change: Water Governance, Inequality, and Infrastructural Politics in Cape Town's Water Crisis. *International Journal of Urban and Regional Research*, *45*(1). https://doi.org/10.1111/1468-2427.12899

Mishra, B., Kumar, P., Saraswat, C., Chakraborty, S., & Gautam, A. (2021). Water Security in a Changing Environment: Concept, Challenges and Solutions. *Water*, *13*(4), 490. https://doi.org/10.3390/w13040490

Paramita Rahayu, Erma Fitria Rini, S. (2019). Domestic Water Adequacy of Surakarta, Indonesia: Is it Prone to Vulnerability? *Environment and Urbanization ASIA*, *10*(1), 81–98. https://doi.org/10.1177/0975425318821

Paramita Rahayu, J. W. & T. F. (2021). Shared water resources in decentralized city regions: mixed governance arrangements in Indonesia. *Urban Water Journal*, *18*(9). https://doi.org/10.1080/1573062X.2021.1931358

Radić, Mislav, Davide Ravasi, K. M. (2021). Privatization: Implications of a Shift from State to Private Ownership. *Journal of Management*, *XX*(X), 1–34. https://doi.org/10.1177/0149206320988

Rawlins, J. (2019). Political economy of water reallocation in South Africa: Insight from the Western Cape water crisis. *Water Security*, *6*(100029), 1–7. https://doi.org/10.1016/j.wasec.2019.100029

Raya, Ivonia Isabela, W. B. dan R. A. B. (2020a). Analisis Ketersedian Air dan Penggunaan Air (Water Balance) untuk Penduduk Kota Kupang. *JUTEKS - JURNAL TEKNIK SIPIL*, *V*(1), 20–28.

Raya, Ivonia Isabela, W. B. dan R. A. B. (2020b). nalisis Ketersedian Air dan Penggunaan Air (Water Balance) untuk Penduduk Kota Kupang. *JUTEKS - JURNAL TEKNIK SIPIL*, *1*, 20–28.

Robison, R. dan V. R. H. (2004). *Reorganising Power in Indonesia: The Politics of Oligarchy in an Age*

of Markets. RoutledgeCurzon.

Salehi, M. (2022). Global water shortage and potable water safety; Today's concern and tomorrow's crisis. *Environment International*, *158*(106936). https://doi.org/10.1016/j.envint.2021.106936

Sri Maryati, Tommy Firman, A. N. S. H. (2022). A sustainability assessment of decentralized water supply systems in Bandung City, Indonesia. *Utilities Policy*, *76*. https://doi.org/10.1016/j.jup.2022.101373

Statistik, B. P. (2019). *Badan Pusat Statistik*.

Strauß, S. (2011). Water Conflicts among Different User Groups in South Bali, Indonesia. *Human Ecology*, *39*, 69–79. https://doi.org/10.1007/s10745-011-9381-3

Susumu Sato, T. M. (2019). Dynamic Privatization Policy. *The Manchester School*, *87*(1), 37–59. https://doi.org/10.1111/manc.12217

Tanter, R. dan K. Y. (2018). *Politik Kelas Menengah Indonesia*. LP3ES.

Theodolfi, R. dan F. W. W. (2014). Analisis Kebutuhan Air Bersih Kota Kupang Menurut Ketersediaan Sumber Air Bersih dan Zona Pelayanan. *JURNAL MKMI*, *10*(2).

Trimo Pamudji Al Djono, D. D. (2022). The effect of community contribution on the functionality of rural water supply programs in Indonesia. *Groundwater for Sustainable Development*, *19*. https://doi.org/10.1016/j.gsd.2022.100822

UNICEF. (2019). *Progress on household drinking water, sanitation and hygiene, 2000-2017*.

Wishanti, D. A. P. E. (2021). *Mengapa krisis air dan sanitasi selalu terjadi di Nusa Tenggara Timur, juga di Pulau Jawa*. The Conversation.

Xia Pan, Wenyin Cheng, Y. G. (2022). The impact of privatization of state-owned enterprises on innovation in China: A tale of privatization degree. *Technovation*, *118*. https://doi.org/10.1016/j.technovation.2022.102587