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Re: Input for Private Debt and Human Rights Report
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Access to drinkable water: the mortgage-debt trap in contaminated living settings

The following memo serves as background information for the UN report on Private Debt and Human Rights. To understand the current situation regarding debt and human rights we bring you a brief message from our studies in peri-urban settings in Mexico regarding the privatization and commodification of water. In summary we see a strong connection between the growing forms of market exposure faced by households and household economic and financial distress related to environmental contamination, financialization and economic deregulation. Our research focusses on the rise of the bottle water industry, in places where bottled water is the only safe consumable water available for large populations. In these contexts, which we argue are becoming more and more common worldwide (Greene, 2018), non-piped water sources have become an increasing share of declining or stagnating income. Bottle water covers many human needs from drinking and cooking to teeth brushing and even bathing. We therefore document a specific debt trap that ties the topic of debt to the concern of drinkable water for all.

While debt does not systematically harms poor families that may utilize consumer debt as a mechanism for integration (Saiag, 2018) or allow for some social mobility by allowing migration for instance (Morvant-Roux 2013); for temporary crisis resolution "rehabilitation" in war torn contexts (Jebarajakirthy and Thaichon 2016)[1] and for poverty alleviation (Ziyi and Huifan, 2016). At the same time, it also is clear that commercial debts can also contribute to household vulnerability (Guérin et al., 2013). Nevertheless, debt is also a relation in a social context where not all actors are equally situated, and where differences between groups is an exploitable resource for the demands of finance.

To draw the connection between water consumption through market channels and debt we apply a version of Social Reproduction Theory which tries to understand how a society of workers is reproduced, and under what living conditions. Various writers bring issues of "care work," community supports, public services, social protections and ecological services as factors in this theory that contribute to the quality of life within a social dynamic. Wages are one of the counter-parts that allow the household to live. Distinct forms of debt, both formal and informal, allow the household to get by when these other factors are less available. Thus, according to this view, the

increase in consumer debt correlates strongly with a withdrawal of the state in providing public services often accompanied by weak forms of social protection. Writing about this relation, and the increased relationship between household expenses and financialization (in the market sense), Lavinas (2017) tells us that states have "supported debt-financed spending at the expense of the provision of public goods and services." Federici (2016) agrees, stating that "many reproductive activities have now become immediate sites of capital accumulation." While financialization is not the result of specific homogeneous policies in Mexico we see two trends: the increased financial vulnerability resulting from the fact that water needs are met by relying on market mechanisms (purchasing non-pipped water solutions) and we can also see that the rise in consumer debt corresponds directly with the rise of a new model of water provision.

Lavinas' work is centered in Brazil characterized by some scholars as a state-led capitalism (Bilzberg 2019) but we find a similar situation in Mexico, as it relates to water. While there is no specific Human Right to Water, in the strictest institutionalized sense, water has been a central provision between citizens and states or governing bodies for time immemorial (Solomon, 2010, 48). Access to water according to Bakker is an emblem of citizenship (2010, 49), the difference between populations and citizens. Furthermore, we believe we are beginning to see signs of water rationing, where households manage with less water than they need, and this clearly makes living conditions worse.

While Mexico achieved the MDGs in "providing" water to 96% of its population (UN, 2015), the reality on the ground is far from celebratory. The average service provision in our central study area is for only 4 hours at a time, twice a week while 100% of households only drink bottled water (Table1 in Appendix). In another study areas respondents only receive water once every two weeks. This has been shown to be a growing concern throughout the world. In India, for instance, the entire population of 1.3 billion averages 3 hours per day and in some areas less than 1 hour every two days (Dahasahasra, 2018, 6). Despite these problems, in the case of Mexico the federal government has withdrawn from the water sector (Wester et. al, 2009) and in its place families and individuals are responsible for seeking their own solutions to access safe drinking water (Baron et al., 2019). While our research shows that this, on average does not have an overwhelming impact on income, in some cases, especially among the most vulnerable, it does. This can be seen by the fact that about 10 percent of the customers of neighborhood water providers sell their water on credit. Furthermore, water then becomes the most important commodity, first on the shopping list, and the one thing for which there is no substitute. Habits in our poorest study area show this clearly: the majority of households in indigenous communities in Chiapas simply can not afford to drink bottled water, and thus the residents drink directly from contaminated sources and report high levels of water borne illnesses (table 3 in Appendix).

This issue of sufficient clean water provision has to be understood in the context of mortgage – debt. In the last two decades 20 million Mexicans have moved to the urban periphery, to areas lacking sufficient water supply and infrastructure. The construction of 5 million social housing units (Marosi, 2017) far from the urban centers, and the provisioning of these houses to the poor through long-term financing attached to workers' formal employment status has trapped households into paying for new housing that lack basic water and public services. These areas

have developed too rapidly for the local governance institutions to provide quality basic services (security, health, education, transport, and water) and despite the steadily worsening conditions (both environmentally and socially) this pattern of construction continues unabated. This migration into these urban fringes isolated from existing public services was part of a liberalized housing reform which advocated for the financial inclusion to solve the housing needs of the working poor. In the end, they guaranteed profits for developers while putting all of the risk on the borrower. Furthermore, in Mexico, because the developers were guaranteed profits based on no-risk financing provided through the government management of a 5% tax on all workers, this guaranteed market quickly became the most securitized financial market in Latin America (Soederberg, 2015).

In the case we are researching in Mexico, we have seen the rise of this model of debt and financial inclusion as a method of securing profits for large scale housing developers (Reyes Ruiz del Cueto, 2018) and as an anchor for the world's largest housing securities market (Soederberg, 2015).[2] It is important to consider the case of Mexico and the impact this financial inclusion has had on the population because this model was largely seen as a success story to the international financial community. The unregulated structure of this financial inclusion sent developers to the most dangerous, isolated areas, where land was the cheapest and margin's for profit at scale were attainable (Libertun de Duren, 2018). Today the average distance from the city center to these new housing units "exceeds 40 km, whereas it was less than 15km a decade ago." This movement peaked in 2013 when more than 600,000 loans were granted to Mexicans.

Simultaneously the federal government has distanced itself from any taking responsibility for the conditions created by these developments. The deregulated incarnation of social housing left site selection, construction supervision, and placement to the "market" (Libertun de Duren, 2018). The move has exacerbated poverty by moving working poor families into areas with considerable depravations, far from social infrastructure and frequently in dangerously contaminated areas (Reyes Ruiz del Cueto, 2018; Marosi, 2017). Repayment is automatically reduced from workers' salaries and thus families trapped in these situations face the difficult choice of continuing to pay for inadequate housing far from the city center, or abandoning their home and thus having to leave the formal sector. Meanwhile, these developments averaged 42% profit margins (Libertun de Duren, 2018) while the costs of the social problems these developments created were pushed onto the public sector. Reporting on housing produced by one of the bigger companies in this field, Marosi (2017) writes: "defects revealed themselves with the first rains or a turn of a faucet. Water systems failed. Pumps malfunctioned. Sewage treatment plants broke down. Poorly graded streets washed away."

A recent dissertation on this theme explains: "The volatility of the labor market, the exploitative and punitive terms of the mortgage as well as the misinformation, combine to generate huge financial risks for the homebuyers of social housing. The long-term cost of the mortgage stands in sharp contrast to the precarious condition in the social housing projects" (Chen, 2018, p211).

Our own research clearly shows that the relocation of large populations to the periphery has put enormous pressure on existing water networks (among other public services) and has contributed to the lack of continuous supply and the emergence of the bottled water paradigm. Social protection is weak and not redistributive.

In this same domain of access to water, beyond our case study, an increasing level of contamination is reducing overall supply (UNEP, 2016). Contamination is rapidly becoming an issue throughout the global south where UNEP (2016) now estimates severe or moderate contamination in ground water sources now impacts as much as 40% of Latin American, 37% of African and 65% of Asian river and streams. Increasing numbers of global residents are becoming more vulnerable to water supply interruptions, despite repeated international strategies towards a sustainable path. A recent report from IFPRI and VEOLIA (2015) predicts that "the most rapid increases in exposure" heavily contaminated waters will occur in lower and middle income countries.

This is at least part of the context under which bottled water is expanding as an option for household access to safe drinking water. In 2017, the WHO and UNESCO Joint Monitoring Programme charged with monitoring country level progress towards the SDGs redefined bottled water as a form of "improved" or even "safely managed" access. Their position is that they only monitor and evaluate actual practices, even if they appear to implicitly endorsing this solution. Regardless, the fact is that this paradigm is growing throughout the world where it is predicted that within the next decade that global demand for water will outshoot supply by 40% (Stiehler, 2017). Furthermore, in our research we additionally see a growing demand and practice of buying trucked in water for non-drinking water domestic supplies. This is further evidence of the provision of water being resolved at the household and individual level and through market channels.

Seeing these interlinked factors of social reproduction, and the way wages and their absence leaves households vulnerable to public access to social goods and protections, allows us to understand debt in a territorialized way. In the debt literature we are frequently confronted with the binary, positive/negative, relationship between formal and informal financial system. By positioning the relationship of these individuals to their social contexts, both with housing debt tying them to a place where public services are reduced and by showing increased reliance on commodified goods, it is clear that debt and the subject of financial inclusion are socially construed. In this sense they are neither positive or negative and potentially either depending on factors beyond the inclusion-exclusion dialectic. Instead, we see as Lavinas shows, debt can, at least partially, be seen in relation to the total costs of social reproduction. In this light we can see that financial inclusion can both: 1) Act as a means for individuals and households to access previously publicly provided goods, and that 2) Act as a means for governance institutions to resolve provisioning of goods and services in a time of austerity and state retrenchment.

In general it is safe to say that it is the poorest segment of our populations are the most vulnerable to the market provisioning of their needs (for both housing and water). Furthermore, the expense for water is representing an increasing portion of household income and in a situation where wages are stagnate compared to inflation, this puts an increasing pressure on already overextended household budgets. Our research is beginning to confirm this and it makes sense: people without much money have a harder time accessing monetized goods. Furthermore, in our case studies we have clear examples of households that face difficult choices at least in part because of their financial inclusion. Simultaneously these populations are the least savvy, the most financially preyed upon and are the most likely to be over-indebted, behind on their payments, and vulnerable to the consequences of non-payment (such as eviction).

In summary then we see the subject of financial inclusion through access to debt as needing to be evaluated through a lens which puts it into relation with the state provision of goods and protections. In situations where the financial inclusion is a substitute for public provisioning of goods needed for household survival, then certain consumer protections are necessary to ensure that these developments do not negatively impact the most vulnerable populations.

Appendix- Output from our household Survey in Mexico

Table 1. Percentage of household receiving water 24/7 among those connected to the piped system

	Receive water 24/7
El Salto Sub-sample: 384	5.68%
San Cristobal Sub-sample: 344	6.69%

Thus our survey shows that people combine several water sources to improve their access to water: 93% of the households in El Salto combine 2 or 3 water sources and the share is 80% for San Cristobal de las Casas (table 2).

Table 2. Number of water sources used for daily consumption, household survey

Number of sources	**El Salto** **N=500**	**San Cristobal** **N=350**
	Percent	**Percent**

1	0	13
2	52.7	56
3	41.5	24
4	5.7	5.6
5	0	0.6
Total	100	100

Sources types include (1) tap water (inside the house or on the plot), (2) water from neighbour, (3) well water, (4) public tap, (5) tank trucks (from the municipality or from a private company), (6) bottled water (small bottles or 20L jug from small purifier or big brands) and in Chiapas (7) natural sources (river, stream, or other natural sources).

Table 3. Percentage of household declaring contaminants among those connected to the piped system

	Piped water shows contamination
El Salto (Sub-sample: 384)	39.59%
San Cristobal (Sub-sample: 344)	76.16%

Source: WATSIN Survey

Types of contaminations: colour, taste, odour, sediments, residues, excess of chlorine, other contaminants.

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