Finance Capital and the Water Crisis: Insights from Mexico

NADINE REIS

University of Bonn, Bonn, Germany

ABSTRACT This paper explores how finance capitalism materializes as a socio-ecological process, shedding light on the complex causalities in which current shifts in control over natural resources are embedded. Housing is a critical aspect of financialization. A case study of the financialized housing sector in Central Mexico shows (i) how housing policy serves as a mechanism for the redistribution of wealth from the working class to global finance capital, and (ii) how mortgage-financed housing projects come into being only through an existing water governance regime, while in turn leading to new structures of groundwater governance with profound social and ecological implications. The paper concludes that current accumulation and natural resource regimes interact in complex and contradictory ways that go beyond straightforward resource grabbing. It suggests that Moore’s concept of ‘capitalism in the web of life’ could help to understand how finance capitalism simultaneously transforms the socio-natural world and is produced by it.

Keywords: financialization, housing policy, water, world ecology, Mexico

Financialization has become a key feature of housing and real estate markets, and a major point of discussion at the latest since the US housing market induced financial crisis in 2007/2008. Housing policy in Mexico has been financialized since the 1990s. First, financialization implied the shift of housing financing from the state to private mortgages (primary mortgage market). Second, financialization was consolidated after 2000 by the creation of a secondary mortgage market, that is, the Mexican state selling off mortgage portfolios to international investors. International finance capital is also involved in financing housing construction companies. This paper investigates how the financialization of social housing in Mexico played out locally, and how international finance capital is circulated and appropriated in the places where ‘capital switching’ (Harvey, 2001) actually materializes. In doing so, it shows that water has played a key role in this process.
role in the socio-spatial materialization of finance-led capital accumulation, while at the same time, the latter has retroacted on water governance and contributed to the increasing commodification of water.

The paper shows that water resource regimes interact with the financialized economy in complex ways that go beyond direct appropriation. In the past phase of capitalist development in Mexico, water used to be appropriated as a ‘free gift’ from nature (cf. Moore, 2015), mainly through the ‘conquest’ of groundwater resources for the expansion of capitalist agriculture after the Mexican revolution (Wolfe, 2013). Water remains a necessary ‘ingredient’ in today’s financialized economy. It is indispensable for the realization of profit through the ‘fixation’ of capital in the built environment (cf. Harvey, 2001). However, there are increasingly complex social, political—institutional, and physical—geographical conditions in place shaping access to water resources. Mortgage-financed housing projects come into being through an existing water governance regime with its hydrological conditions, legal frameworks, and local networks of actors. Yet, in turn, the materialization of financialized capital accumulation through this socio-natural environment has led to new structures of groundwater governance in Central Mexico, with possibly profound implications. Even if they are illegal, these structures could result in the de facto commodification of water, resulting in the (further) reallocation of water according to money power, to the detriment of human development and environmental sustainability.

This has implications not only for how we understand the functioning and impacts of financialization, but also the complex causalities in which current shifts in control over natural resources are embedded. By showing how finance capitalism does not work upon, but through nature (Moore, 2015, pp. 12–13), the Mexican case illustrates Moore’s argument that power, capital, and nature are dialectically joined through two simultaneous movements, ‘capitalism’s internalization of planetary life and processes’ and ‘the biosphere’s internalization of capitalism, through which human-initiated projects and processes influence and shape the web of life’ (Moore, 2015, p. 13). Water and finance are thus joined in the ‘web of life’.

The paper draws on empirical data mainly collected between 2013 and 2015. Interviews were conducted with state officials and other actors involved in housing development and water governance, namely real estate developers, intermediaries trading water rights and farmers, and analysed using qualitative data analysis software. Official documents and newspaper sources were collected and analysed. The paper is structured as follows. The second section presents a literature review on the financialization of housing and makes the case for adding an actor-oriented approach to the study of financialization. The third section introduces the financialization of housing policy in Mexico, through presenting the history of the financialization process, a model of current housing financing in Mexico, and the effects these structural characteristics have had in terms of their socio-spatial outcomes. Section 4 deals with the interlinkage of the financialized housing sector with water and its governance. It presents the actors that control water, their strategic actions, and how this affects the materialization of homebuilding. The article concludes on the interconnected natures of the financialized housing economy with natural resource regimes, and suggests questions for further research.

**Adding an Actor-Oriented Approach to the Study of Financialization**

As a defining characteristic of the neoliberal phase of capitalism, financialization has restructured the global economy since the late 1970s (Lapavitsas, 2013, p. 793).¹ Financialized capitalism has two major dimensions. First, it is a new economic mode, where the dominant locus of capital accumulation has shifted from the sphere of production to the sphere of financial markets
This involves the growing significance of finance in everyday life and the subjugation of the economy of goods and services under financial market logics (Hall, 2001, p. 405; Moore, 2010, p. 390). Second, finance capitalism is characterized by a new form of state, where the interests of domestic and foreign financial capital are institutionalized and shape the overall logic of state decision-making (Aalbers, 2009, pp. 282–283; Marois, 2012, p. 38).

Housing is a critical ‘frontier’ of financialized capital accumulation (Aalbers, 2008; Aalbers & Christophers, 2014; Rolnik, 2013; Sassen, 2012). The sheer size of the sector in terms of its significance for the GDP in industrialized countries and the workforce dependent on it accounts for the importance of housing for the economy (Aalbers & Christophers, 2014, p. 4). Its enormous significance was not least proven by the fact that the US mortgage debt crisis of 2007/2008 triggered a world-scale economic crisis (Lapavitsas, 2013, p. 792; Rolnik, 2013, p. 1964; Sassen, 2010, pp. 35–42). Yet, housing is not only a key sector for the financialized economy because of its size, but also because of its two crisis-relieving functions in the capitalist system. First, in contrast to many other commodities, housing is an exchangeable store of value. Under situations of effective demand crisis, it can be used to fuel capital circulation by government policies that encourage homeownership by means of private debt (Aalbers & Christophers, 2014, pp. 4–6). Second, as part of the built environment, housing has a key function for absorbing the surpluses of capital and labour that regularly emerge out of the economy’s tendency for overaccumulation (Harvey, 2006, pp. 190–196). In a process of ‘capital switching’, the ‘fixation’ of investments in the built environment serves as a crucial means for the absorption of these surpluses and hence to the temporal displacement of crisis (Harvey, 2001). In housing, this has been taking place through the formation of a secondary mortgage market in the US since the beginning of the 1980s, where mortgage portfolios are traded as financial assets. A key policy instrument for the creation of secondary mortgage markets has been ‘securitization’, where houses as spatially ‘fixed’ assets are converted into liquid resources by creating tradable mortgage portfolios, so-called ‘securities’, which are backed up by state-owned mortgage companies such as Freddie Mae and Fannie Mac in the US (Gotham, 2009). In the financialized economy, mortgages function as ‘post-industrial widgets’ linking the local neighbourhoods from which wealth is extracted with finance capital, where wealth is accumulated (Newman, 2009). Securitization has spread rapidly across the world, and is seen by development agencies (especially the World Bank) and governments as a win–win strategy for leveraging more funds for constructing homes through employing finance capital (Rolnik, 2013; Soederberg, 2015, pp. 481–482).

Primary and secondary mortgage markets have substantially grown in the more financially integrated countries of Latin America, especially in Brazil and Mexico, but also in other countries such as Chile, Colombia, Peru, and Uruguay (IMF, 2012, p. 2; Jha, 2007). Next to neo-Marxist approaches explaining the role of housing and finance under capitalism, critical analyses of the financialization of housing have mainly focused on its socio-spatial effects in the domains of social and urban development. In particular, critical scholars have shown how securitization has contributed to increasing social inequality and segregation, through the extraction of rent from low-income households (discursively obscured by the cultural symbol of homeownership) (Sassen, 2010, 2012; Wyly, Moos, Hammel, & Kabahizi, 2009); the role of mortgage debt as a newly produced social relation of class (Palomera, 2013; Wyly et al., 2009) and race (Dymski, 2009; Hernandez, 2009); and the abandonment of the idea of housing as a social good, affecting the worldwide enjoyment of the right to housing of poor and vulnerable segments of society (Rolnik, 2013).
While the existing literature has contributed to our understanding of the role of securitization in capitalist development, and the adverse effects on local urban development, social segregation, and impoverishment, Orderud (2011) has made a step to confront the lack of empirically grounded analyses of the interactions between finance capital and the actors who actually implement financialization on the local level, such as developers and homebuilders. In a similar fashion, focusing on the financialization of land, Kaika and Ruggiero (2016) have called for more qualitative studies of the strategies, conflicts, and alliances of actors through which financialization unfolds in a ‘lived process’. This paper pursues such a more ethnographic and actor-focused methodological approach to complement more macro-analytic analyses of financialization. From a neo-Marxist perspective, the financialization of housing is an outcome of the specific features and necessities of the current phase of capitalist development. However, even if material structures can be very persistent and seem to have almost determinate causal powers, society is an open system and social change always happens through people (Archer, 1995). Empirical research on the actors that make financialization happen is thus needed in order to explain how and why financialization of housing is materializing, and what its effects are: Who are the actors that realize the ‘spatial fix’ on the ground? What are the strategies of local elites to benefit from the newly available resources? And what are the implications for local power structures and the environment? Before returning to these questions, the following section presents the details of the structural reforms that facilitate capital accumulation through the financialization of housing.

**How Housing Policy Reform Serves Accumulation through Wealth Extraction**

Under neoliberal capitalism, Mexico’s housing sector has been transformed according to the needs of finance capital. Social housing policy originated in the creation of the ‘National Housing Institute’ (*Instituto Nacional de la Vivienda*) in 1954, designed to execute the construction of urban housing projects for state employees in a time of rapidly growing cities. A system of subsidized credits for home construction was put in place with the creation of FOVI (*Fondo de Operación y Financiamiento Bancario para la Vivienda*) in 1963 (UN HABITAT, 2011, p. 13). In 1972, INFONAVIT (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*) and FOVISSSTE (*Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado*) were founded, which remain the main executors of housing policy for the lower income working class until today. In the 1970s and 1980s, state agencies themselves carried out all the necessary steps for the construction and management of social housing, including the acquisition of land, housing design, and contraction and supervision of construction works (Infonavit, 2015a). The financialization of social housing started with a World Bank-induced policy reform in 1992 (*Programa para el Fomento y Desregulación de la Vivienda*, PFDV). It was formulated within the context of the wider neoliberal reform agenda of the Salinas presidency (1988–1994). The primary aim of the PFDV was the reduction of the state’s role as housing developer to increase efficiency and reduce public spending. The reform involved the withdrawal of state agencies from direct involvement in home construction and the abandonment of housing subsidies (Boils, 2004, p. 352). INFONAVIT and FOVISSSTE were transformed into financially autonomous and profit-oriented mortgage banks. Furthermore, the reform implied that credits ceased to be issued for the acquisition of land, refraining from the support of traditional individual home construction (Boils, 2004, p. 352). Instead, the promotion and construction of homes were completely shifted to private developers (Schteingart & Patiño, 2006, p. 171). Private housing financing was also promoted
through the creation of the SOFOLES and SOFOMES, private financial intermediaries specialized in mortgage credit for those not having access to INFONAVIT and FOVISSTE credits, and funded by the Inter-American Development Bank (IDB) and the China Development Bank (Söderberg, 2015, pp. 488–489). Overall, the state’s role changed from a project executor to a ‘facilitator’ for private investment into housing (Schteingart & Patiño, 2006, pp. 171–172).

The development of the secondary mortgage market took off with the creation of the Federal Mortgage Company (Sociedad Hipotecaria Federal, SHF) in 2001. In February 1999, the World Bank granted a loan of 505 million US$ to the Mexican government—one of the largest loans Mexico had ever received (Boils, 2004, p. 356). The purpose was the transformation of FOVI into a public enterprise that would facilitate mortgage securitization through providing credit and insuring the mortgage portfolios against default. The **Sociedad Hipotecaria Federal does not lend to individual homebuyers, but provides credit to National Housing Funds, SOFOLES, and SOFOMES. The backing of credit risk through SHF increased the funding for housing immensely. This led to a massive expansion of mortgage issuances by National Housing Funds (particularly INFONAVIT), SOFOLES and SOFOMES, and also increased investments of international finance capital into the housing construction sector itself (Levin & Bain, 2013). The US subprime crisis of 2007/2008 additionally shifted funds to the Mexican market (Jordan, 2008, p. 1181).

The prospect of secure profits, based on the high demand for mortgage-financed homes, and risk taken over by the state, led to a boom of the social housing sector in Mexico. This boom materialized in the mushrooming of new housing colonies (conjuntos urbanos or fraccionamientos) in the surroundings of Mexico’s large cities. In particular, developers focused on the State of Mexico, comprising the peripheries of the Metropolitan Areas of Mexico City and Toluca (see Figure 1). Between November 1999 and December 2014, the government of the State of Mexico authorized the construction of 483 conjuntos, containing a total of 726,101 houses.4 On average, the colonies contained around 1800 houses, whereas there are colonies with 10,000 or even

![Figure 1. Localization of the study region in Mexico (Map: Orestes de la Rosa).](image-url)
13,000 houses. *Conjuntos* were mostly constructed in the urban peripheries, where land was relatively cheap. New settlements with several (tens of) thousand inhabitants appeared in formerly agricultural areas, resulting in a dramatic transformation of Mexico’s urban peripheries.

Figure 2 presents a simplified model of the financing of housing colonies. The main housing funding agency is INFONAVIT. The institute has 70% of the mortgage market in Mexico and is the largest mortgage lender in Latin America (Director, Infonavit Èedomex, 13 April 2015). All workers with formal work contracts in the private economy allocate 5% of their monthly salary to their saving account at INFONAVIT, which is automatically deducted from their pay. Once they meet the eligibility criteria, the savings can be used for obtaining a mortgage from one of INFONAVIT’s programmes—either solely INFONAVIT funded, or co-financed through private banks, SOFOLES, or SOFOMES. Those who do not have access to INFONAVIT and FOVISSTE programmes can take out a mortgage directly from private bank entities. Since the creation of the primary mortgage market in 1987 up to March 2015, interest rates were between 4% and 10%, depending on the salary. However, in order to protect investors from inflation-related risks, mortgages were not issued in pesos, but in ‘times minimum wage’ (veces de salario mínimo (VSM)). Since the minimum wage rises every year with the inflation rate, this implies that the mortgage principle also automatically increases every year. With the reform in March 2015, only the credit programme which works through a direct co-financing of private banks is still based on the VSM model, while all other programmes now issue the credit in Mexican Pesos, and have fixed interest rates of 12%. Those not having access to credit via National Housing Funds can obtain credits through SOFOLES and SOFOMES. Both, mortgages

![Figure 2. Financing of housing in Mexico (elaboration of the author).](image-url)
from SOFOLES/SOFOMES and from national housing funds, are securitized and sold to international investors through the SHF. In addition, the FHipo, Mexico’s first Real Estate Investment Trust, was established in 2014. FHipo directly sells mortgage portfolios from Infonavit mortgages to international investors. Finance capital is also invested directly in the construction companies. Between 2000 and 2011, 68% of all homes were constructed by one of Mexico’s five largest developers (Secretaría de Desarrollo Urbano, 2015).

The financialization of social housing has had problematic socio-spatial effects, such as increasing socio-economic segregation (Monkkonen, 2012). The new colonies created difficulties for local governments, which were confronted with a massive and sudden population influx for whom public services and infrastructure were lacking (Isunza Vizuet & Méndez Babena, 2011). Above all, various factors—including the remote location of the colonies away from urban centres, lack of proper infrastructure, the poor construction quality of the houses, loss of employment—led to declining demand and excessive numbers of people abandoning their houses in 2012 and 2013. This created a crash in the market, with three of the five large real estate developers going bankrupt. Today, there are extremely high numbers of uninhabited houses in Mexico. Officially, it is estimated that there are around 400,000 abandoned houses in the country (SIPSE, 2015). Newspaper reports speak of up to 5 million uninhabited houses, including those abandoned and those unfinished due to the bankruptcy of developers (El Financiero, 2014; Informador, 2015). Hundreds of thousands of borrowers remain indebted while having lost their houses, while the non-performing loans turned into debt obligations of the SHF, that is, the state, remaining with a debt of around 1.7 billion € (Frente Mexiquense en Defensa para una Vivienda Digna, 2015).

The financialization of housing in Mexico is thus an exemplary case of how public policies have been transformed under the neoliberal accumulation regime in order to redistribute wealth from the working class to globalized finance capital. The following section examines how this form of accumulation happens locally, and the role that water resources governance plays for the socio-spatial materialization of financialized housing.

Financialization and the Commodification of Water Resources

The financialization of housing is embedded in social and material relationships that structure the construction of the built environment. The case shows that accumulation through financialized housing works through water as a simultaneously physical and human structure. This goes back to a key institutional structure that real estate developers face in the process of getting construction permits from local authorities: due to specific hydro-social conditions, they must obtain sufficient water rights to supply the future inhabitants of the housing colony. Water as a hydro-social resource (Linton & Budds, 2013; Swyngedouw, 2009) and the financialized housing sector have mutually constituted each other. On the one hand, the mortgage-financed housing sector can only realize profit by taking into account a specific water governance regime with its existing hydrological conditions (because a permission for supply of domestic water is a necessary condition for housing development), legal frameworks, and local networks of water-related actors. These actors manage to appropriate the newly available financial resources for their own gain, and according to the social logics in which they are embedded. In this way, they shape the socio-spatial materialization of finance capital on the ground. On the other hand, the financialization of housing and the subsequent massive demand for water rights concessions by housing estate developers have led to an illegal water rights market, where substantial sums of
money must be paid for obtaining a concession. This has contributed to the emergence of a new water governance regime, creating new structures of access to water rights—and, possibly, water itself.\textsuperscript{6}

*The Hydro-Social Environment of Housing Construction in Mexico*

Large parts of Mexico are characterized by groundwater overexploitation. The Toluca aquifer is one of Mexico’s highly overexploited aquifers. In response to groundwater overexploitation, major legal and administrative changes have been implemented in Mexico since 1988.\textsuperscript{7} A major component of the 1992 water law reform was the introduction of individual water rights concessions granted through the National Water Commission, CONAGUA. Article 27 of the Mexican constitution establishes that water is a property of the state. To counteract groundwater overexploitation, the state declared groundwater prohibition zones, so-called *zonas de veda*, where the total volume that can be extracted from the aquifer is capped.\textsuperscript{8} The Toluca valley, such as all of Central Mexico, is such a *zona de veda*. This means that during the 1990s, the state agency CONAGUA regularized\textsuperscript{9} water rights, and issued water concessions for all existing water users,\textsuperscript{10} usually for a period of 10 years (cf. Garduño, 2005, pp. 97–98). The water title allows the user to extract a certain volume per year and is registered in a public information system. Regularization finished in 1999, putting an end to the possibility of acquiring new concessions in overexploited aquifers.

To facilitate acquisition of water rights by new users, CONAGUA implemented a system of water rights transmissions from 2001 onwards (CONAGUA, 2012b, p. 8). This implies that water concessions can now only be obtained via a rights transmission from another user who wants to cede his/her rights.\textsuperscript{11} Since national water resources must legally not be commercialized, water rights transmissions are free of charge.

Due to immense population growth, public water utilities in the Toluca valley operate at the limit of their concessions and are not able to supply the new *conjuntos* from their existing concessions. Therefore, municipalities request the water concession for the volume necessary to serve the future inhabitants of the colony from the developers, before issuing a construction permit. This created a massive demand for water rights concessions by the housing construction sector, and in turn led to the emergence of a ‘black market’ for water rights after 2000.

*Commercialization of Water Rights*

The challenge this structure poses is how to ‘find’ the necessary water rights. Research showed that the key actors in water rights transmissions are intermediaries called *coyotes*. Coyotes function as brokers between (1) users wanting to cede water rights and those needing them, and (2) the formal and informal spheres of water rights allocation. According to information from CONAGUA staff and own observations, *coyotes* often work in teams, where one ‘head’ takes over the more sophisticated parts of the business involving the contact with the buyer, legal, and administrative aspects, while his/her ‘working brigades’ take over the task of approaching users potentially willing to sell their rights.

After establishing the contact through the local water utility, branch of CONAGUA, or own social networks, the *coyotes* acquire the requested volume.\textsuperscript{12} There are two groups of users who potentially cede water rights: private industry and farmers. The majority of transmissions have so far originated from farmers. In the course of the boom for land and water rights, and
deteriorating agricultural markets in Mexico since the establishment of the North American Free Trade Agreement (NAFTA), many farmers have sold land and water rights to real estate companies. In particular, farmers with large landholdings under irrigation have made a profitable business case out of selling water rights.

Once the ‘top coyote’ has acquired the necessary water rights, he/she manages the formal water rights transmission procedure at CONAGUA. There is evidence that corruption payments to higher level CONAGUA officers are necessary in order to get legal authorization. When the transmission is officially authorized through CONAGUA, all ‘compensation payments’ are made. The water rights transmission market has a substantial turnover, with financial benefits for all actors involved. In the Toluca area, prices in 2016 were around 28–35 pesos (ca. 1.60–2 €) per cubic metre for the buyer. In the Mexico City metropolitan area, prices ranged between 15 and 23 pesos (0.90–1.30 €). Depending on the planned size of the conjunto, rights transmissions involve several hundred thousand to ca. 1.5 million m³, and thus create a considerable source of income for rights brokers, those selling rights and other involved actors.

Emerging Structures of Access to Water

In the context of groundwater overextraction, and a legal framework building on individual rights concessions with the total volume of concessioned water capped, the financialization of housing has significantly contributed to the emergence of an illegal water rights market. With substantial financial turnover, the illegal market has become a defining characteristic of the water rights allocation regime in the Valley of Toluca, and as interviews suggest, in other zones of semiarid Central Mexico. The illegal water rights market did not collapse with the crash of the real estate market, as there is still high demand for water rights in the context of the currently ongoing expansion of industrial parks, while supply of water rights is decreasing. The market is maintained by a powerful network of actors benefitting from illegal water rights trading. This network includes the coyotes, water users selling surplus rights, and actors within the state bureaucracy. This has important implications for the broader political economy of groundwater in Mexico.

First, and in contrast to the initial aims of the 1992 water law, the actually existing structures do not lead to a countering of groundwater overextraction due to the massive economic interests associated with illegal water rights trading. For individual water rights to function for ecological sustainability, secondary regulations would be necessary that work towards the absorption of surplus rights for the restoration of the aquifer. The water law actually foresees a mechanism for the ‘collection’ of surplus rights, namely the concept of expiration of water rights (caducidad). It involves the cancellation of rights for water volumes that the user does not use for 2 years in a row (Ley de Aguas Nacionales, Art. 29–3). However, private water users, mainly from the industry, have managed to successfully lobby against caducidad. Since water rights are commercialized, they are perceived as private property by those water users who have bought rights. Hence, their cancellation is seen by water users as improper interference of the state into private matters (Reis, 2014, p. 476). To solve this conflict, the government introduced so-called guarantee quotas in 2010. Since then, users may pay a fee for the volumes they do not use, and in this way evade the caducidad. In effect, the system of guarantee quotas prevents CONAGUA from cancelling water rights, making them available for commercialization on the ‘black market’ rather than for the restoration of the aquifer (or the allocation for public use).
Second, the illegal water rights market structures have led to a paradox and alarming outcome regarding the incentives for further regularization of groundwater. Mexico is currently undergoing a process of further regularization of groundwater extraction. In 2013, the government suspended the free access to groundwater in those parts of the country where water extraction had not been regulated yet (DOF, 2013), and started regularizing wells in the whole country (cf. CONAGUA, 2014). Also in zones where concessions were issued already in the 1990s, such as Central Mexico, a further push for regularization of groundwater extraction can be observed. In 2004, 2008, and 2014, there were decrees that offered regularization to those who extract water based on expired titles (DOF, 2014). According to interviewees and newspaper reports, there has been enhanced monitoring of wells since 2013.

Officially, the regularization of water rights is legitimized by water scarcity and the need to provide legal certainty over water rights to water users (CONAGUA, 2014). However, a former senior head-office CONAGUA official, now active as a private water consultant, offered an alternative interpretation, openly relating the establishment of prohibition zones all over the country to ‘very strong economic interests’ of state elites and the fact that ‘people of the state and federal governments possess concessions of millions of cubic metres’. Several interviewees claimed that there was no scientific evidence of water scarcity in the proclaimed prohibition zones, which is supported by the fact that there is no transparency as regards hydrological studies conducted by CONAGUA. The nationwide regularization of water rights can thus also be interpreted as a strategic attempt for securing economic interests associated with illegal water rights trading, rather than one of achieving ecological sustainability. Further research is necessary in order to support such claims, but considering the interests associated with illegal water rights trading, it is at least doubtful whether ecological sustainability is the only incentive for the stricter regularization of groundwater extraction in Mexico. The fact that there is now a market for water rights in which government officials have vested interests is likely to prevent the allocation of water based on criteria of ecological sustainability and priority for public use—as emphasized in formal government policy. It is ironic that the establishment of ‘good water governance’—in the sense of a rigorous enforcement of the 1992 water right reform through the strict regularization of water rights—under the present conditions would result in a more tightly organized (illegal) water market in which money power determines access to water. In other words, water would effectively be commodified (cf. Bakker, 2005), even if it is legally a common property.

**Conclusion: Finance Capital in the ‘Web of Life’**

Three conclusions can be drawn from the investigation of the financialization of housing in Central Mexico. First, housing policy in Mexico was reformed not in order to serve the housing needs of the population, but those of Mexico’s globalized bank capital and international investors. Housing policy in Mexico serves as a mechanism for the re-distribution of wealth from the working class to global finance capital through the mechanism of interest. However, the outcomes of financialization at the local level are more complex than merely being a story of wealth being extracted from the local level and redistributed to the global world of finance capital. Social actors such as real estate agents, municipal and state officials, and actors controlling the necessary material resources for homebuilding make the financialization of housing happen on the ground, and are agents who can make use of their bargaining power in order to benefit from global mechanisms of capital accumulation. In the study region, it is those actors possessing and determining access to water rights, who are able to appropriate a share of the
financial resources that entered the region through the links of the Mexican housing market with international investors. Due to the central role of water rights, water users who were assigned large volumes during the regularization of groundwater extraction—in particular, large-scale farmers—the intermediaries controlling the illegal trading of water rights, and state officials with decision-making power over water rights transmissions have gained in the financialization process. Financialization does not ‘happen by itself’, but must be ‘made to happen’ by social actors, and how financialization unfolds will depend on the specific conditions that exist locally, and differ accordingly.

Second, the state plays a vital role for the unfolding of these socio-ecological processes. In spite of the debt the 2012/2013 crisis has left for the Mexican state, the crisis resulted in even increased (and reportedly successful) efforts of the state in trying to attract finance capital to the Mexican housing sector by backing risks. New forms of state institutions and regulations facilitate the deepening of neoliberal capitalist structures. However, a view on finance capitalism’s ecological embeddedness shows that state regulation is key not only in terms of the securing of property rights (Aalbers & Christophers, 2014, p. 12), but also as regards the regulation of access to material resources such as water that are needed for the realization of profit by financial means.

Third, the analysis has implications for the debate on the state of natural resources under neoliberal capitalism. Many accounts of ‘resource grabbing’ have referred to the appropriation of resources for the profit aims of corporate actors (see, for instance, Borras, Hall, Scoones, White, & Wolford, 2011; Fairhead, Leach, & Scoones, 2012; Mehta, Veldwisch, & Franco, 2012). The present case suggests that shifts in control over natural resources may also proceed through more complex routes, where finance capitalism interacts with resource regimes in indirect ways, and with contradictory outcomes. The relationship is indirect, because just as the power of finance capital cannot simply be understood as a monolithic corporate project subsuming all other actors, an interpretation of the changing water resource regime in Central Mexico of ‘water grabbing’ would fall short. The case has shown that financialization has had major implications for how access to water is governed. This has led to a re-allocation of water in favour of uses that serve the needs of capital accumulation through financial means, and disregarding the needs of the environment and society at large. This process is likely to intensify in the future, also because the reallocation of water rights happens largely unobserved by the public. However, the process does not primarily unfold through the direct appropriation of water resources for capital accumulation. Rather, the study illustrates how finance capitalism works through the ‘web of life’ (Moore, 2015), and how the world of financial instruments is connected to the world of material resources. In Toluca, new accumulation modes of the world economy have unfolded through water as a hydro-social resource. By creating new conditions and strategic opportunities for actors in this ‘web of life’ (Moore, 2015), they change the balance of power at the local level, leading to the emergence of new structures of access to water and the exacerbation of Mexico’s water crisis.

Simultaneously, the process points to the contradictory outcomes of capitalist development. The past phase of capitalist development in Mexico was characterized by the appropriation of water resources: The twentieth-century ‘hydraulic mission’ to tap groundwater for agricultural modernization served the needs of capital, but it did so by increasing the ‘ecological surplus’ through ‘putting free energy to work’ (cf. Moore, 2015). In contrast, the combination of two main features of the neoliberal policy era—the privatization and financialization of social policies on the one hand, and the introduction of ‘managerialist’, techno-rational policies that have proliferated across all domains of development and natural resources ‘management’
(Reis, 2016) on the other—has seemingly resulted in the increasing capitalization of water: It is not anymore for free. While the commodification of water serves certain classes with vested interests in illegal water rights trading, this is opposed to the interests of capital in general, for which it implies rising input costs. The ‘end of cheap water’ is not only a result of the exhaustion of the physical resource and the increasing costs for its appropriation through having to dig deeper into the ground, but also of the particular power constellations on the local level that are needed to make finance-led accumulation happen.

Finance capitalism is social and ecological at the same time. Further empirical research in other geographical contexts and on other areas of social and economic life that are penetrated by the logics of finance capital is needed in order to better understand how financialization as a critical feature of neoliberal capitalism unfolds as socio-ecological process. Such efforts may be expected to push forward not only a better theorization of natural resources regimes, but also our understanding of the neoliberal phase of capitalism as a whole.

Disclosure Statement

No potential conflict of interest was reported by the author.

Notes

1 Financialization is not a new phenomenon in the history of capitalism (Christophers, 2015, p. 193). What is exceptional about the current phase of financialization is its scale, scope, and technical sophistication (Arrighi, 1994, p. 309).

2 Both INFONAVIT and FOVISSSTE target workers with formal work contracts, while the large number of workers in the informal economy has not benefited from the state programmes. The exclusion of the poor from housing policies remains a major issue (Monkkonen, 2011; UN HABITAT, 2011, p. 14; Soederberg, 2015, p. 483).

3 Boils (2004, p. 351) states that the reform was a condition of the World Bank for further credits. However, as Marois (2012) clarifies, neoliberal reforms in Mexico must not merely be conceived as top-down imposed, since it was a fusion of domestic and foreign financial capital interests and their institutionalization in the state that led to the emergence of finance capitalism in Mexico.

4 Own calculation based on data of the Government of the State of Mexico (Secretaría de Desarrollo Urbano, 2015).

5 Eligibility is calculated based on age, salary, the amount of savings, and the time contributions have been made (Infonavit, 2015b).

6 The following data were presented in detail in Reis (2014), and are summarized here in order to argue the case for this paper.

7 See (Wilder, 2010) on the details of the reform process, including the promotion and financing of reforms through the World Bank.

8 Groundwater prohibition zones were already established in 1947 (CONAGUA, 2012a, p. 86). However, the introduction of 50 such zones between 1948 and 1963 (including the Valley of Toluca) did not have any effect, since extraction was not monitored (Wolfe, 2013, p. 17). In December 2011, there were 160 zonas de veda in Mexico (CONAGUA, 2012a, p. 86), covering 55% of the country’s surface (CONAGUA, 2014).

9 I adopt the terms ‘regularize’ and ‘regularization’ from the original Spanish term used by interviewees, ‘regularización’. In contrast to ‘regulation’, the term seems more appropriate to capture the meaning of ‘making something legal and official by rational means that was not formally organized before’.

10 Water users are agricultural users, industrial users, and public water utilities.

11 A change of use type is thereby possible, and water rights are not tied to land ownership.

12 The details of the functioning of the illegal water rights market mainly draw on several interviews with a coyote and participant observation (cf. Reis, 2014).

13 This expansion is happening as part of the government’s strong pushing of the export sector, which is also due to financialization, in that it causes an increasing dependency on obtaining foreign exchange to serve increasing debt.

14 In 2015, the SHF allocated more than 94,000 million Pesos to the housing sector in the form of credits, guarantees, and securities, amounting to 10,000 million more than in 2014 and nine times the sum allocated in 2012 (Grupo
The 2012/2013 crisis had resulted in losses for private banks (which are mostly foreign-owned and monopolized in Mexico, see Marois, 2012, p. 144) that had invested in the Mexican housing development companies, leading to a withdrawal of financing for the sector. In response, the SHF increased its activities in the direct financing of the housing supply sector by way of securing private investments. In 2015, 15,000 million Pesos were issued as direct credits to developers, equivalent to an increase of 26% compared to 2014 (Grupo Formula, 2016a, b).

References


**Nadine Reis** is an Assistant Professor at the Department of Geography at the University of Bonn, Germany. She is currently a Marie-Curie ‘P.R.I.M.E’ fellow, affiliated with El Colegio de México (Mexico), the International Institute for Social Studies (The Netherlands) and the University of Bonn (Germany). Her research focuses on critical political economy, development policy, financialization, nature and state power, with a regional focus on Latin America (especially Mexico) and Vietnam. She is the author of the book *Tracing and making the state: Policy practices and domestic water supply in the Mekong Delta, Vietnam* (LIT Verlag, 2012).