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Unpacking the Discourse of Water Scarcity in the Case of Lebanon

– Hussam Hussein–

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Abstract

This paper aims at contributing to the literature on water scarcity by adopting an interdisciplinary approach able to combine public policy, political economy, and discourse analysis, with engineering and hydrogeological contributions, providing empirical insights on the different causes of water scarcity in the Lebanon. This is important as it will allow policy makers and the donors community to better understand the nuances of reasons behind the issue of water scarcity, providing them with the tools to better design sustainable and inclusive policies to solve the issue of water scarcity. This paper focuses on the case of Lebanon, which is portrayed as a water scarce country, but would be seen as a water abundant country when compared to other countries in the region. Water scarcity in Lebanon has its roots in the political economy and in the history of the country. The economic and political interests of the Lebanese elites influence the projects and reforms in the water sector (in different directions), and when these logics are at odds the elites' logic generally subverts water sector development projects and reform attempts to incorporate their own needs. Hence, it is argued that water scarcity in the case of Lebanon is mainly due to mismanagement.

Introduction

This paper aims at contributing to the literature on water scarcity by adopting an interdisciplinary approach able to combine public policy, political economy, and discourse analysis, with engineering and hydrogeological contributions, providing empirical insights on the causes of water scarcity in the case of Lebanon. This is important as it will allow policy makers and the donors community to better understand the nuances of reasons behind the issue of water scarcity, providing them with the tools to better design sustainable and inclusive policies to solve the issue of water scarcity. This study focuses on the case of Lebanon, which is portrayed as a water scarce country, but would be seen as a water abundant country when compared to other countries in the region such as Jordan. Water scarcity in Lebanon has its roots in the political economy and in the history of the country. In fact, only by unpacking the construction of and power relations within the Lebanese society it is possible to understand and explain the reasons behind water scarcity. The status quo benefits the economic and political Lebanese elites, and they can make the most of projects and reforms in the water sector for their personal or groups' interests, undermining the general and common goods, as showed and argued by Ghiotti and Riachi (2013), Riachi (2015), and Eid Sabbagh (2014). Hence, it results that water scarcity in the case of Lebanon is mainly due to mismanagement.

Lebanon has historically been seen as the water richest country of the Middle East, the Levant's water tower or "chateau d'eau du Levant" during the French mandate (Alahkbar, 2014: 1; El-Fadel et al., 2001). Nevertheless, reports of the Lebanese government, local mass media, academics, and donors and international organisation today portray Lebanon as a facing a water crisis, and a water scarce country. The Lebanese newspaper "The Daily Star" titled "Lebanon must tackle its water crisis head-on", explaining that "Lebanon is no longer the tower of the Levant", and describing the "water crisis" situation that Lebanon is currently facing (The Daily Star, 2014: 1). The national water sector strategy discusses the "shortcomings" that the Lebanese water sector is facing (MEW, 2010: 3). A USAID report emphasises the "water stress" that Lebanon is experiencing, with a focus on the over-exploited and depleted groundwater resources (USAID, 2016: 35). For the World Bank, "Lebanon is on the threshold of water scarcity" (World Bank, 2012: 1).

This paper is guided by the following research question: how is the issue of water scarcity constructed in the case of Lebanon? To do so, this paper first presents the methodology adopted; second it provides an overview of the water sector in Lebanon, including the hydrological data, causes

of water scarcity, and proposed solutions. Finally, it discusses the politics of water scarcity in the last section. One important caveat is that while objective reality exists, such as water resources in Lebanon, the focus of this study is to understand how these environmental challenges are understood, represented, and therefore acted upon by the different actors and stakeholders.

Methodology

The paper is informed by theory and method of discourse analysis and of critical hydropolitics. Dryzek (2013) emphasises that environmental issues can be framed in different ways, each constituting a discourse, and each opening a different set of solutions and policy options. Dominant discourses are powerful and can shape policies, driving towards and opening specific solutions (Hajer, 1995). "The implicit purpose of these competing ideologies [discourses] is not just to convince but to control; better stated, they aim to control by convincing" (Scott, 2008: 23). Critical hydropolitics emphasises the political aspect of water governance, considering power asymmetries - including the role of discursive power - in shaping water allocations (Zeitoun and Warner, 2006). Mehta (2005) shows how the discourse of water scarcity is often constructed and deployed by governments to justify contested infrastructural projects (Edwards, 2013; Barnes, 2014).

The implementation of this study requires the deployment of different qualitative methods of data collection and different sources. The subject of the study requires a multi-level governance analysis (Newig and Moss, 2017) that would allow capturing the multi-dimensional aspect of water governance (Beveridge, Moss, and Naumann, 2017; Krueger et al, 2016). It also requires capturing data behind closed doors, as that is the place where most of the interesting discussions may take place (Feitelson, 2002). The project is therefore based on critical analysis of: a review of Lebanese newspaper articles; on reports, press releases, and declarations of the ministries of energy and water and of high-level governmental figures; on analysis of the national water sector strategy; semi-structured interviews to key informants; on statistical hydrological data; and on the transboundary water agreements. In addition, a survey to 60 university students has also been adopted to gauge the general public understandings of the issue. Another method of data collection is observation, which is being conducted to observe how the water scarcity discourses are deployed in forums, conferences, and events by governmental officials. Further key informant interviews at major water industry

events are being used to triangulate analysis of public discourses presented in the media and policy documents.

Results

This section presents the findings from the data collection and analysis. It presents an overview of the general background of the water situation in Lebanon: water resources and hydrological data; institutions, and water uses. It then discusses the findings about the causes and the solutions of water scarcity in Lebanon.

Water resources

In 2012, Lebanon had 1,200 MCM/capita per year (World Bank, 2012: 1), while according to the MEW, this figure in 2015 has decreased to 839 MCM/capita per year when considering the renewable water resources. Nevertheless, Lebanon is relatively a water rich country compared to the Arab region's countries, although technically below the 1,000 MCM/capita per year threshold of water scarcity. Moreover, the water uses, 63% of the water supply goes to agriculture, 29% for municipal use, and 11% for industry.

Concerning surface water resources, Lebanon has 40 rivers, of which 17 are perennial. The longest river is the Litani, with average flow of about 750 MCM and about 170 km long. Another important river is the Ibrahim River. The rivers of transboundary nature are the Orontes River – which flows from Lebanon to Syria and then to Turkey -; the Hasbani River, a tributary of the Jordan River; and the el Kebir River, shared with Syria. The other minor rivers are mainly on the Mediterranean coastal area; overall, most surface water resources are generated by springs in the mountain region, fed from the melting snow. Most of the water supply in Lebanon comes from groundwater resources. The two main aquifer systems in Lebanon are the Keserwan Limestone Formation and the Sannine – Maameltein Limestone Formation. These aquifers as well as most of the others in the country are contained in limestone and are karstic in nature, which according to geologist means that green water – coming from rainfalls and snowmelt – are rapidly absorbed into those aquifers. As further discussed below, aquifers in Lebanon are over-exploited beyond their safe yield, causing decreasing in quantity

and also of increasing salinity – and therefore of decreased quality – especially of the coastal aquifers. There are also over 2,000 seasonal springs that generate different streams. They are mainly along the coast, nevertheless they are difficult to access and therefore they are not currently much exploited. Finally, non-conventional water resources is not much used in Lebanon. For instance, there is no reuse of treated wastewater, while desalination is still limited, and currently conducted mainly by the private sector.

Institutions of the water sector

The actors officially responsible for the administration of water resources in Lebanon are: the ministry of energy and water (MEW) and its departments of the directorate of hydraulic and electrical resources, and the directorate of exploitation. The latter is responsible for the regional water establishments, which oversee water supply, waste water management, and irrigation in all the country apart from the areas where the Litani River Authority is responsible for. There are then several other governmental institutions with responsibilities that partly relate to water, including the ministry of agriculture – responsible for tariffing system -, the ministry of public health – responsible for the water quality standards in the potable water on the market, the ministry of environment looks after environmental standards and pollution, the ministry of public works – responsible for road constructions and issues related to storm drainage on public roads and highways. The municipalities, and therefore the ministry of interior, are responsible for urban waste water networks. Moreover, the government agencies responsible for reconstruction – such as the Council for Development and Reconstruction, the Council of the South, and the Central Fund for the Displaced – are broadly speaking responsible for reconstruction, and therefore they may be involved in the restoration of water management infrastructures. As explained by Eid-Sabbagh (2015), also the actors involved in the legislative process, including the parliament, council of ministers, the prime minister's office, the high council for privatisation, the relevant parliamentary sub-committees, the ministry of finance, of foreign affairs, and the public recruitment council, should also be seen as relevant actors of the water management sector in Lebanon.

Causes of water scarcity

The challenges faced by the water sector, contributing to water scarcity in Lebanon that have been identified in reports, academic articles, students' surveys, and mass media relate to these issues:

- Population growth, also due to waves of forced migrations due to regional instability
- Rainfalls occur within a short time during the winter season, with little precipitation during the rest of the year, while the peak water demand of agriculture is in the summer/dry season
- Climate change as an additional pressure
- Transboundary water resources
- Insufficient water treatment plants
- Old distribution network, resulting in water leakages
- Groundwater contamination and decrease of its quality
- Illegal connections and illegal wells
- Water flows to the sea due to lack of catchments and dams
- Increased demand due to industrial development
- Expansion of irrigated land and uncontrolled tapping into groundwater
- Lack of data about groundwater resources and on the amounts extracted; records on water resources are divided among several governmental institutions and require coordination and continue updating and monitoring
- Weak water governance: lack of coordination between water authorities (overlapping responsibilities and difficulty of implementation). For instance, regulation on groundwater abstractions, permits for new wells, are not currently enforced
- Unsustainable water use in agriculture
- Metering system, lack of tariffing per use, and flat rate system: the collection of water fees from consumers is inadequate also due to the lack of metering systems – adopting a flat rate system – and results in poor financial resources for water utilities. The flat rate system provides no incentives to saving water for the consumers, while there is no incentive for the water utilities to improve their service

The causes listed above and identified in governmental reports, academic articles, mass media, NGOs reports, students' surveys, and donors and international organisations, can be divided in six groups, as shown in Table 1.

Table 1: Causes and constraints of the water crisis in Lebanon

Natural factors	**Governance and management (or lack of)**	**Transboundary/political reasons**	**Infrastructures**	**Quality**	**New and/ or unsustainable uses**
Population growth, also due to waves of forced migrations due to regional instability	Old distribution network, resulting in water leakages	Transboundary water resources: most major surface water resources in the country are shared with neighbouring countries	Water flows to the sea due to lack of catchments and dams	Insufficient water treatment plants	Increased demand due to industrial development
Rainfalls occur within a short time during the winter season, with little precipitation during the rest of the year, while the peak water demand of agriculture is in the summer/dry season	Illegal connections and illegal wells			Groundwater contamination and decrease of its quality	Expansion of irrigated land and uncontrolled tapping into groundwater
Climate change as an additional pressure	Lack of data about groundwater resources and on the amounts extracted; records on water resources are divided among several governmental institutions and require coordination and				Unsustainable water use in agriculture

	continue updating and monitoring				
	Weak water governance: lack of coordination between water authorities (overlapping responsibilities and difficulty of implementation). For instance, regulation on groundwater abstractions, permits for new wells, are not currently enforced				
	Metering system, lack of tariffing per use, and flat rate system: the collection of water fees from consumers is inadequate also due to the lack of metering systems – adopting a flat rate system – and results in poor financial resources for water utilities. The flat rate system provides no incentives to saving water for the consumers, while there is no incentive for the water utilities to improve their service				

Natural factors

The main natural factors impacting water resources in Lebanon are the rainfalls, which are concentrated within a few months a year, and the impact of climate change. Rainfalls occur within a short time during the winter season, with little precipitation during the rest of the year, while the peak water demand of agriculture is in the summer/dry season.

Climate change is seen as an additional pressure to the limited water resources of Lebanon. In particular, climate change is expected to impact the water sector through hotter and drier climate, higher temperatures, change in evapotranspiration patterns, less precipitations, reduction in soil

moisture, run off, and groundwater recharge, and increase in variability and intensity of rainfalls (World Bank, 2012: 4; USAID, 2016: 6).

Another issue seen as a natural factor, is population growth, which has increased from less than 4.5 million in 2013 to over 6 million in 2018. An increased population, also means an increased water demand. However, while mass media often portrayed Syrians in Lebanon as having added a pressure on the limited water resources of Lebanon – giving space and reinforcing in this way the arguments of xenophobic and nationalistic political discourses in Lebanon (ibid.: 42) – the estimated water demand from Syrians in Lebanon is of about 7% of the pre-crisis domestic water demand (World Bank, 2013).

Governance and management (or lack of)

There are many issues and aspects related to water governance in Lebanon. Lack of coordination between water authorities (overlapping responsibilities and difficulty of implementation). This emerges clearly from the section above on the actors and institutions involved in the water sector in Lebanon. Given the several layers of institutions and agencies involved, it also results that there is overlapping of responsibilities, lack of coordination, and – given the under-staff issue at those agencies – also the difficulty of implementing laws and regulations. Moreover, as noted by Harb and Atallah (2015: 188), "strengthening decentralization in Lebanon is still incomplete and fragmented. The current decentralization structure, fiscal regulations, and local governance do not provide optimal conditions for maximizing service delivery and development projects, and are inhibited by many constraints—political, administrative, geographic, fiscal, and legal. Notwithstanding, local governance could provide a great entrance point to improving local development and service provision".

One of the constraints in the water sector is the metering system and revenues collection. In fact, the collection of water fees from consumers is inadequate also due to the lack of metering systems – adopting a flat rate system – and results in poor financial resources for water utilities. The flat rate system provides no incentives to saving water for the consumers, while there is no incentive for the water utilities to improve their service. Nevertheless, despite worsening of the service, the flat rate for domestic use keeps rising. For instance, as noted by Riachi (2015: 41), "it increased 22% in

one year between 2013 and 2014" and "some residents abstain from paying the bill for a service that does not deliver."

Given the bad public service on water supply, this has also resulted, especially in the Bekaa Valley, in an increase of illegal connections and illegal wells (as further discussed in this section), which has further exacerbated the quality of groundwater resources (concerning illegal wells) and the pressure of the water in the public network distribution system (concerning illegal connections).

Another issue is linked with the lack of data about groundwater resources and on the amounts extracted. Monitoring of groundwater extraction means that the government should collect information on the number of wells and monitor how much the extraction is. Also, the current regulations are obsolete dating back to the Ottoman Empire and the French Mandate; for instance, an individual does not need a permit if they extract less than 100,000 litres per day and if it is no more than 150 metres deep. In addition, as noted by Riachi, while in the 1970s there were about 3,000 wells in the country, today there are about 80,000 wells, of which almost 60,000 are not licensed (USAID, 2016: 5).

Given the old distribution network, it is estimated that about 50% of the water is lost due to leakages and other forms of wastage. In some areas, this figure increases to 80%. This issue is a broader problem of governance within the water utilities and the public administration responsible for water supply.

Transboundary/political reasons

Given that the main surface water resources in the country are of transboundary nature, this is also perceived as contributing to the water crisis in Lebanon. Lebanon has signed agreements with the Syrian government in 1994, 1997, and 2002 on the Orontes River; nevertheless, Lebanon is the weakest country in the basin – which is shared among Lebanon, Syria, and Turkey. Concerning the shared water resources with Israel, there are no diplomatic relations between the two countries, and therefore no agreements on the allocation and uses of these resources. An agreement has been signed between Lebanon and Syria on the el Kebir River; nevertheless, there it is perceived by many that the agreements on transboundary rivers are not fair to Lebanon.

Infrastructures

A long-standing discourse present and reproduced in mass media and in the general public is that Lebanon is water scarce as there is water, but it flows to the sea due to lack of catchments and dams. This discourse emphasises the lack of dams as the main problem for the water crisis in the country.

Quality

Quality refers to both the decreased quality of groundwater resources due to infiltration of pollutant agents, and to over-exploitation beyond their safe yield, as well as to the lack of water treatment plants.

Several of the best water resources of Lebanon are not usable anymore due to pollution. In fact, only about a third of the buildings are connected to sewage networks. In addition, several sewage plants are not operational, and therefore rivers and aquifers became a sewage-dumping site. As a matter of fact, only about 8% of wastewater is currently treated in Lebanon (The Daily Star, 2014: 1).

New and/or unsustainable uses

Most of the water resources in the country are used for irrigation. Water for agriculture is highly subsidised, and Lebanon currently produces double the demand of fruits and vegetables, as most of them are exported to the Gulf region. This means that an important percentage of water is currently being used to irrigate cultivations for the production of agricultural goods that are then exported. In addition, only a few dozen of regional landowners benefit from these subsidy schemes for production and exportation of agricultural goods: the large farmers, who own big agri-businesses. Furthermore, these agricultural lands, which have been further expanded in the past decades, are irrigated, further tapping into groundwater resources, which are more and more exploited and further depleted over time.

Since the end of the civil war, there has also been an increased demand due to industrial development. Nevertheless, this is only a small percentage compared to the demand and use of the agricultural sector.

Solutions to solve water scarcity

This section analyses the solutions opened up by the discourse of water scarcity in Lebanon. They have been identified during the analysis of documentation and in the interviews, as those are the ways in which water scarcity could be solved, according to the discourses identified. Specifically, those solutions derive from the discourses constructed or reproduced by governmental officials, academics, mass media, donors and international organisations, NGOs, and the general public, and are believed to be the appropriate tools to solve the issue of water scarcity in Lebanon. These solutions are inter-related to the causes perceived behind water scarcity. In fact, these solutions were mentioned in relation to specific causes of water scarcity; the perceived reasons causing the water crisis open and drive towards specific solutions, as discussed in relation to the theories underpinning this research.

The main solution put forward by the government and by most respondents from the general public is that Lebanon needs dams. Dams have long been the main pillar of the governmental vision to solve water scarcity in the country, as emerges in the national water sector strategy (MEW, 2010). This is motivated by the reasoning that Lebanon is abundant of water, and that snow melts on the mountains, but then this water flows down from the mountain into the sea, and therefore it is lost. An argument pushing for building dam is that Israel and Syria could potentially argue that Lebanon should not be allocated much water from the transboundary water resources given that Lebanon is wasting its water by letting it flow into the sea. The efforts of the MEW has been on building dams in different parts of the country, damming or planning to dam most rivers in the country. Nevertheless, this plan encountered several challenges: dams are expensive; environmental assessments and studies on the feasibility from different point of views, including geological studies, need to be conducted. In addition, several environmental NGOs and groups of citizens have been criticising from a social and environmental perspective the push for dams (The Daily Star, 2013). NGOs also mention that rather than dams, the authorities should construct urban collective storage ponds, filled by

groundwater resources and springs. It must also be mentioned that most dams are built through the financial support of donors, which however give the government loans – and not grants – which means that they will need to be paid back; some social activists argue that this is a form of neo-colonialism, countries are losing control on their own country, but governments and politicians are benefiting from it because of the personal interests and benefits linked to the construction of such projects, while citizens will be the ones paying the costs of the loans and of the negative impacts and environmental damages caused by such projects (Beirut Report, 2014).

New regulations and legislation in order to protect groundwater resources. The new reforms should also ensure data collection on existing wells, abstraction, and uses. It should set limits in order to ensure the recharge of the aquifers. The new reforms, however, should also support mechanisms to link these users to the public network service. Concerning the water utilities and public network, reforms should be initiated in order to ensure all users have a meter. Then, the government should charge according to how much water is consumed, and not a flat rate. This would incentive water conservation. In addition, agencies responsible for water supply, particularly the water utilities, should be staffed with technical people able to contribute to the rehabilitation of the network system, aiming at reducing leakages and water losses. Subsidies to farmers for water for agriculture should be re-evaluated as they are benefiting only a few dozens of landowners, while consuming important amounts of the Lebanese water resources. Regulations on type of crops, and on the export of agricultural products should be considered in order to support agriculture for local consumption and disincentive the exportation of agricultural products, for which large amounts of water is used. The Lebanese government should set up wastewater treatment plants, and it should ensure that the wastewater treatment plants are functional and operational. This would contribute to stopping the continuous decrease of the quality of water resources in the country.

Looking at the six narratives, each embedding a cause of water scarcity, it emerges that the solutions presented in this section are opened by these discourses. In particular: the natural factors narrative opens solutions on saving every drop of water through construction of dams to make the most of the limited water resources; the governance and management discourse opens solutions on new regulations and legislation, better management at the water utilities level, and tariffing system; transboundary nature of the main surface resources opens solutions on building dams in order not to allow Syria or Israel to use during negotiations the argument that Lebanon is letting water resources

flow into the sea; infrastructure discourse drives towards rehabilitation of the pipeline network system as well as building dams; quality discourse pushes towards solutions to reduce the pollution, and therefore the establishment of wastewater treatment plant, and new regulations to limit over-abstraction of groundwater resources. Finally, the discourse on the unsustainable uses opens solutions towards more sustainable uses of water resources. Given that the focus of this discourse emphasised the uses in agriculture, also the solutions opened tackle agriculture, calling for tariffing systems reforms, subsidies removal for farmers, supporting local food production of small farmers for local use rather than for exportation.

Discussion

Powerful discourses

The previous section has first presented the discourses of water scarcity, which emphasises different causes behind water scarcity; second it has showed the solutions opened and driven towards by the mentioned discourses. Nevertheless, two aspects needs to be considered: what is the emphasis and relevance of the different discourses, and consequently of the solutions they open; which ones of the solutions opened are pursued by the Lebanese government and implemented in practice, and which ones instead remain on paper. In order to answer these questions, further research is needed. Nevertheless, initial trends can be identified thanks to analysis of: the responses received from the 60 Lebanese interviewed from the general public; newspapers and mass media; governmental reports and declarations.

A powerful discourses is defined as discourses that reach the largest number of people outside of the group of actors constructing the discourse, as well as the discourses that open solutions that will then be implemented or adopted by the relevant authorities. The most powerful discourses, from initial analysis, result to be: infrastructures, governance and management (or lack of), and natural factors.

In particular, within the infrastructures discourse the emphasis of most respondents was that there is water scarcity in Lebanon as the water resources flow from the mountains to the sea, and Lebanon is not able to catch and use the water due to a lack of dams and infrastructures; this

discourse opens strongly solutions on damming all rivers and streams, which is indeed a policy adopted and backed by the MEW.

Concerning the discourse of governance and management, there is a feeling that mismanagement is behind the water scarcity issue, and therefore reforms are needed; this discourse also opens solutions on involvement of the private sector, market-oriented solutions, as the state and governments are seen unable to provide good governance and management for the water sector. Nevertheless, by privatising, fundamental issues of governance are not resolved, and actually public institutions are further undermined in their role of providing successful management of the water resources. Reforms on new regulations and legislation are often not implemented, also due to lack of personnel and enforcing capacity (closure of illegal wells, tariffing system/metering system, etc.).

Finally, the discourse of natural factors, in the interviews, emphasised the role of growing population, in particular due to the Syrian crisis impacts on Lebanon. Nevertheless, this discourse opened solutions with an emphasis on the infrastructural level – at least in the interviews and governmental responses – and therefore reinforcing the solutions opened by the infrastructure discourse and to some extent, also those opened by the governance and mismanagement discourse.

Where is the blame?

In the case of natural factors, the blame is on nature and the environment on the one hand, and on the other hand it is on the Syrian population in Lebanon. This means that the blame is certainly not on the government or on Lebanese institutions, but on factors external to the Lebanese responsibility. In the case of governance and management discourse, instead, the blame is fully on the Lebanese relevant authorities that have been mismanaging water resources and for the lack of governance in this sector. The discourse on transboundary political reasons, the blame is again on external factors, in this case on the neighbouring countries for not allowing Lebanon to use as much water as it needs. Instead, in the case of the quality discourse, similarly to the governance and management discourse, the blame is on the relevant Lebanese authorities for the lack of wastewater treatment plants and on private citizens and industries for polluting and over-abstracting groundwater resources. In the case of the unsustainable water use – especially in agriculture – the blame is on farmers and users, but also on the government and relevant authorities for not being able to renew the legislation and

regulations on these issues and for not being able to fully enforce and implement existing legislations. Unsurprisingly, the government is more likely to emphasise the discourses that blame external factors, such as natural factors and the Syrians, or infrastructure, rather than governance and management. In this way, through a supply side set of solutions focusing on increasing water resources through infrastructural solutions – mainly dam – the current uses (or misuses), especially in the agricultural sector – are maintained and not challenged, together with the interests and the political support of those benefiting from the current situation. Nevertheless, to fully understand this point, there is a need to unpack the historical roots of this situation, as done in the next section.

Historical reasons undermining reforms

For Ghiotti and Riachi (2013), it is necessary to look at the historical agrarian reforms to understand why new regulations or legislations concerning illegal wells and protection of groundwater resources have not been passed or implemented. For them, a key issue is linked to the role of agriculture, which consumes most of the water resources of Lebanon, and in particular groundwater resources, the most used water source in the country. Looking at the history of land in Lebanon, there are three categories of owners: the individual, the state, and the communities (religious communities). Therefore, "the Lebanese state was caught between communities and to a lesser extent between individuals, namely the large property owners" (ibid.: 136). Hence, reforms and new legislation had to be situated in the broader confessionalism system that has characterised Lebanese politics especially since the Taef Agreement signed at the end of the Civil War in 1989 (Edi Sabbagh, 2014: 68).

For Riachi (2015: 45), "instead of focusing on building a functioning national administration and resolving key legal, technical and personnel issues, politicians, high-ranking engineering bureaucrats and international development banks continue to prioritise expensive large-scale white elephants projects to address water deficits in Lebanon. This bias towards technical engineering solutions that advocates for damming all Lebanese rivers overshadows legal pluralism and its relation to private property, as well as, crucially, distributive politics that impose the uneven allocation of water resources in the country." For him, "the solution lies in a necessary radical reform of the country's democratic system, as confessionalism has proved itself incapable of accommodating the most basic subsistence need of the Lebanese citizens: water" (ibid.).

Another reason that deserves further research is the role of a weak state and weak governance leading to neoliberal reforms, privatisation, market-oriented reforms and its nexus with who benefits from this unregulated process, exploring therefore the businessmen-politicians nexus. Nevertheless, Fregonese (2012) shows how in the case of Lebanon, it is rather the case of hybrid sovereignties rather than of a weak state. Nevertheless, as argued by Fawaz (2009), the "prevailing neoliberal ideology of the 1990s, as translated through Lebanon's sectarian-clientelist regime, is curtailing these possibilities" of access to the public goods by the broader population including the marginalised communities. In this way, the elites have been having an increased space of manoeuvre for the (mis)management of the public goods, including water resources.

Concluding remarks and future research

This working paper showed the discourses of water scarcity in Lebanon, which solutions they drive towards, where the blame is posed, and trends of the powerfulness of the discourses and of the solutions. It has also hinted at the political and economic forces driving the water scarcity politics in the country. Nevertheless, further research is needed to further develop this paper, in particular to show which solutions are being implemented, and which ones are not, and why. It would be also useful to better map the actors emphasising or de-emphasising the different discourses, and why, meaning their interests behind it. Moreover, future research should also investigate the nuances within the Lebanese elites, their competing and converging interests, and evolutions over time. Moreover, another aspect that shall also be studied is how do the national political elites and the international money lending organisations interact, and their different approaches and interests.

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