2018-76

Papiers de Recherche | Research Papers

Harnessing the commons to govern water as a flow

Julie TROTTIER*

July 2018

Please cite this paper as: TROTTIER, J. (2018), "Harnessing the commons to govern water as a flow", *AFD Research Papers Series*, No. 2018-76, July.

Contact at AFD: Stéphanie LEYRONAS (leyronass@afd.fr)

* Julie TROTTIER, CNRS, UMR Art-Dev.

Papiers de Recherche de l'AFD

Les *Papiers de Recherche de l'AFD* ont pour but de diffuser rapidement les résultats de travaux en cours. Ils s'adressent principalement aux chercheurs, aux étudiants et au monde académique. Ils couvrent l'ensemble des sujets de travail de l'AFD : analyse économique, théorie économique, analyse des politiques publiques, sciences de l'ingénieur, sociologie, géographie et anthropologie. Une publication dans les Papiers de Recherche de l'AFD n'en exclut aucune autre.

L'Agence Française de Développement (AFD), institution financière publique qui met en œuvre la politique définie par le gouvernement français, agit pour combattre la pauvreté et favoriser le développement durable. Présente sur quatre continents à travers un réseau de 72 bureaux, l'AFD finance et accompagne des projets qui améliorent les conditions de vie des populations, soutiennent la croissance économique et protègent la planète. En 2014, l'AFD a consacré 8,1 milliards d'euros au financement de projets dans les pays en développement et en faveur des Outre-mer.

Les opinions exprimées dans ce papier sont celles de son (ses) auteur(s) et ne reflètent pas nécessairement celles de l'AFD. Ce document est publié sous l'entière responsabilité de son (ses) auteur(s).

Les *Papiers de Recherche* sont téléchargeables sur : https://www.afd.fr/fr/ressources

AFD Research Papers

AFD Research Papers are intended to rapidly disseminate findings of ongoing work and mainly target researchers, students and the wider academic community. They cover the full range of AFD work, including: economic analysis, economic theory, policy analysis, engineering sciences, sociology, geography and anthropology. *AFD Research Papers* and other publications are not mutually exclusive.

Agence Française de Développement (AFD), a public financial institution that implements the policy defined by the French Government, works to combat poverty and promote sustainable development. AFD operates on four continents via a network of 72 offices and finances and supports projects that improve living conditions for populations, boost economic growth and protect the planet. In 2014, AFD earmarked EUR 8.1bn to finance projects in developing countries and for overseas France.

The opinions expressed in this paper are those of the author(s) and do not necessarily reflect the position of AFD. It is therefore published under the sole responsibility of its author(s).

AFD Research Papers can be downloaded from: https://www.afd.fr/en/ressources

AFD, 5 rue Roland Barthes

75598 Paris Cedex 12, France

✉ ResearchPapers@afd.fr

ISSN 2492 - 2846

Harnessing the commons to govern water as a flow

Julie TROTTIER, CNRS, UMR Art-Dev.

Résumé

Cet article explore l'utilité de reconnaître les communs qui gouvernent l'eau destinée à l'irrigation. Il mobilise la notion de communs pour comprendre les interactions de pouvoir en jeu au sein des transformations se réalisant sur des échelles locale, nationale et internationale. Il propose de se saisir des externalités positives générées par les communs afin de transformer les interactions politiques et économiques aux échelles nationale et internationale. Bien qu'il s'appuie sur une étude de cas palestinienne, ce développement conceptuel peut être appliqué n'importe où.

Les Palestiniens gèrent depuis longtemps l'irrigation en tant que communs au niveau local. Cependant, l'attention massive qu'a suscitée leur combat national a mené les chercheurs à se focaliser sur les institutions nationales plutôt que sur les institutions locales. Cette focalisation sur l'échelle nationale a aussi favorisé la perception de l'eau en tant que stock plutôt qu'en tant que flux. Tous les aquifères de Cisjordanie sont partagés avec Israël. Les accords d'Oslo les ont traités comme un stock et les ont divisés quantitativement entre deux utilisateurs : Israël et l'Autorité Palestinienne. Reconnaître l'existence de communs au sein de l'irrigation palestinienne nous permet de traiter l'eau comme un flux. En effet, la même goutte d'eau coule successivement au travers de plusieurs institutions. Certaines sont palestiniennes et d'autres sont israéliennes. Chacune déploie des régimes de propriété définis sur des niveaux d'échelle différents.

Cet article examine l'utilité de considérer l'eau comme un flux qui est géré successivement par cette variété d'institutions. Au niveau local, ceci nous permet de comprendre les interactions entre les petits agriculteurs et les agribusiness voisines, par exemple. Ceci nous permet de comprendre les bouleversements au sein des interactions de pouvoir qui ont lieu lorsqu'une économie marchande entre en interaction avec une économie humaine. Au niveau national, ceci nous permet de nous pencher sur la gouvernance des paracommuns. Ce terme désigne les gains matériels qui sont potentiellement générés par l'amélioration de l'efficience au sein de différents systèmes s'approvisionnant tous auprès de la même source d'eau. De tels gains sont forcément dynamiques car l'amélioration de l'efficience au sein d'un système implique souvent une perte pour un système voisin ou pour un système éloigné mais lié au premier. L'ensemble de ces gains matériels potentiels constituent un nouveau commun dont l'appropriation doit être gouvernée. Il s'agit d'un paracommun car il n'existe que si les projets d'amélioration de l'efficience de différents systèmes sont réalisés. Les bailleurs financent massivement de nombreux projets visant à améliorer l'efficience de l'irrigation. Il est maintenant urgent de faire face à la question de la gouvernance des paracommuns de l'irrigation palestinienne. Cet article analyse la façon dont le capital social élaboré au sein des communs existants peut contribuer à cela. Enfin, au niveau international, inclure les institutions émergeant des communs au sein d'une structure institutionnelle qui gère l'eau en tant que flux nous permet de sortir de l'impasse actuelle des négociations concernant l'eau entre Israël et l'Autorité Palestinienne. Cet article détaille la façon dont ceci peut être réalisé.

Mots-clés : irrigation, communs, conflit israélo-palestinien, paracommuns, gouvernance de l'eau

Abstract

This paper examines the usefulness of recognizing the commons governing irrigation water. It harnesses the commons to understand the power interactions at play in transformations over local, national and international scales. It proposes to harness the positive externalities commons generate in order to transform political and economic interactions at the national and international scales. Although it uses a Palestinian case study, this conceptual development can apply anywhere.

Palestinians have long managed irrigation as commons at the local level. But the overwhelming attention paid to their national struggle has led most researchers to focus on national institutions instead. It has also favored treating water as a stock rather than a flow. All West Bank aquifers are shared with Israel. The Oslo agreements treated them as a stock and divided them quantitatively between two users: Israel and the Palestinian Authority. Recognising the existence of commons in Palestinian irrigation allows treating water as a flow. Indeed, the same water drops flow successively through several institutions, some Palestinian and others Israeli, deploying different property regimes over varying scalar levels.

This paper examines the usefulness of considering water as a flow that is managed successively by such a variety of institutions. At the local level, it allows us to understand the interactions between smallholders and neighboring agribusinesses, for example. It allows us to understand the upheaval in power interactions when a merchant economy attempts to supplant a human economy. At the national level, it allows us to address the governance of the *paracommons*. This term designates the material gains potentially generated by the improvement of efficiency within various systems all drawing on the same source of water. Such gains are dynamic because the efficiency gain in one system often entails a loss in a neighbouring system or in a distant, yet interlinked, system. These material gains thus constitute a new commons, the appropriation of which needs to be governed. It is a *para*commons because it doesn't exist until the projects designed to improve the efficiency of different systems are implemented. Donors are funding heavily projects purporting to improve irrigation efficiency. Addressing the governance of the paracommons of Palestinian irrigation is now urgent. This paper analyses the manner the social capital developed in existing commons can contribute to this. Finally, at the international level, including the institutions emerging from the commons into an institutional structure that manages water as a flow allows us to break the deadlock of present water negotiations between Israel and the Palestinian Authority. The paper details the manner this can be achieved.

Key words: irrigation, commons, Israeli-Palestinian conflict, paracommons, water governance

JEL Classification: D71, H82, 012, 013, 017, 019, 035, 038, Q15, Q24, Q25, Q28.

Acknowledgments

The author wishes to thank the support of the research department of the AFD which funded this research through the project « The Paracommons of Palestinian Water ».

Original version: English

Accepted: July 2018

I. Introduction

Social science research on water has tended to perceive water as a stock. When fuelled by field work, research on the commons has tended to focus either on small scale systems of natural resource management or on large scale management of immaterial resources. When fuelled by theoretical reflections, research on the common (or on commoning) often promotes it as the political principle that will coalesce anticapitalist movements. This paper examines the usefulness of recognizing the existing commons already governing water as a flow instead of a stock. It promotes their study within the context of their interactions with institutions active over other scalar levels. Commons do not function in autarchy. Their members, although keen to defend their common, systematically engage with the state and with capitalism. This article uses the example of Palestinian water to argue that we would benefit from harnessing the existing commons managing water as a flow into a wider institutional structure. This does not mean designing them into categories dictated by the state or by private businesses. A common can only be constructed endogenously, by those who construct co-obligations within it. Accepting the diversity of categories they produce means accepting the interactions among different value systems. It means accepting the messiness of the world, something pure theoretical developments prevents but field work forces us to recognize.

II. Water: a stock or a flow?

Water can be conceptualised both as a stock and as a flow. When thought of as a stock, water becomes a resource that can be appropriated. Water in a plastic bottle or in a water tanker becomes a commodity. When thought of as a flow, water becomes a resource that cannot be appropriated. Approaching water as a flow forces us to consider all of our interactions with it, while removing it from the realm of commodities.

Much of the literature concerning water confuses water use and water consumption. Water *use* designates the volume of water that goes through the hands of water users. Water *consumption* designates the volume of water that leaves the system through a given use. For example, a profligate user of domestic water may use one cubic meter when he takes a shower while consuming hardly any water at all. Water can only be consumed in either of three ways: reaching the sea, evaporating from the ground or other surfaces, or evapo-transpiring through the leaves of plants or through an animal. The rest of the water that we use keeps flowing in the system. Very little of the water used in a shower actually evaporates. Most of it pursues its trajectory, first through the drain of the shower, then through a cesspit or wastewater system into the environment. In irrigation however, large amounts of water either evaporate or evapo-transpirate. At the global scale, irrigation accounts for 93% of the water that is consumed by humans.

Considering water only as a stock, and neglecting the fact it is a flow through the environment, has led many authors to consider water use in a manner that amounts to fraudulent accounting. The Oslo agreements provide a typical example. Treating the three shared aquifers between Israel and the West Bank as an immobile stock, they apportioned quantities of water to each of Israel and the

Palestinian Authority. The figures that appear in the 1995 agreement correspond to the overall volume of water used the year before. They do not correspond to the water that was consumed the year before. In other words, the same water drop was counted many times over within each of the portions attributed to both parties.

Table 1: Water sharing in the Olso Agreements - 1995

	Million Cubic Meters for Israel	**Million Cubic Meters for Palestinian Authority**
Western Aquifer	340	22
Eastern Aquifer	40	54 +78 to be developed
Northeastern Aquifer	103	42

Source : (Trottier, 1999)

Presently locked in a squabble over quantities, as if water was only an immobile stock, Israeli-Palestinian negotiations on water are at a standstill. This is problematic both because examples abound showing us that considering water as a flow could lead to easy progress in those negotiations and because focusing on volume misses the main point. As water flows, its quality is altered. Examining the biography of a water drop illustrates this easily. A raindrop falling in the West Bank, the area that covers most of the recharge of the three aquifers, penetrates the soil and emerges in a spring or a shallow well managed by farmers in the West Bank. It goes through a locally crafted institution, a common, that directs it to a field. If it is not evapo-transpired through the leaves of a plant, it seeps into the soil and keeps travelling into the aquifer. However, it is now laden with chemicals: herbicides, pesticides or fertilizers. The same water drop may then show up in a Palestinian Authority well. It now goes through a public institution that chlorinates it, does not remove the chemicals because water utilities never do, and distributes it only for domestic purposes. Our water drop then travels to a toilet and returns to the environment now carrying bacteriological contaminants. It keeps travelling until it shows up in an Israeli well. It is now handled by a state governed, public institution that chlorinates it once again and distributes it. As the Israeli system is integrated nationally, our water drop may be pumped up to a settlement such as Ariel for example. Back on the ridge that runs north-south in the West Bank, our water drop will keep on travelling, going through institutions that apply very different rules while engaging with the same flow.

Addressing water as a flow has a series of implications. For example, Palestinians in Anabta refugee camp could benefit from installing a wastewater sewer system. Presently, waste water floods occur regularly. But if such a wastewater system is set up, the Israeli Ministry of Housing will agree to building permits for the settlement of Pizgat Zeev, lower down the hill from Anabta refugee camp. The untreated sewage that flows into the settlement area scheduled to be constructed presently deters the Ministry of Housing from agreeing to the permits. Further south, the village of Wadi Fukin has seen the flow of its springs decrease dramatically because of the construction of the

settlement of Betar Illit and of the Israeli town of Tzur Hadassah. The entire recharge area of these springs lies within this narrow valley of 6 km². (Haviv and Asaf 2005) The impermeable land cover created by the constructions above the village interfere with the recharge of the springs. Water is not lost. It is directed somewhere else. As Wadi Fukin is an agricultural village relying on irrigation, the impact is severe. These examples illustrate how inadequate a representation of water in terms of volume can be. Once we think of water as a flow, we are forced to take into account all of our interactions with it. Activities that seem to lie outside of the realm of water, such as construction, suddenly appear clearly connected with it. Conceptualising water as a flow forces us to understand that we have a multiplicity of interactions with that resource. It can never be appropriated although water users, such as the farmers of Wadi Fukin, can be dispossessed when the flow is reoriented so that it bypasses them. Once we think of water as a flow, our fundamental challenge becomes one of managing collectively our interactions with that flow. It can no longer be conceived as an issue of how many cubic volumes for each party.

III. Treating water as a common

The ebullient literature on the common(s) provides a variety of definitions for that term. The commons property movement, initially kicked off with the Maryland conference in 1985, focused on the management of renewable resources such as fisheries, forests, and water in irrigation networks. It defined common property resources as as *non-excludable*, i.e. it is very difficult to exclude users from accessing and using the resource, and *rivalrous*, i.e. what is consumed by one user cannot be consumed by another. (Ostrom 1990; Ostrom, Dietz et al. 2002) The organisation around the exploitation of such a resource is what made it a common. Ostrom identified a series of rules that kept reappearing in institutions managing such resources sustainably both economically and environmentally. Later, the concept of commons was extended to include immaterial resources such as knowledge, for example. This led many authors to assume an analytic distinction between the immaterial commons and the material commons. (Hardt and Negri 2009) In the case of material commons, nature is perceived as providing a stock of resources which limits human action. In the case of immaterial commons, nature is no longer perceived as limiting. Open access software, such as QGIS for example, illustrates an immaterial commons. All users are given access to the code and are invited to improve it. As the number of users increases, so does the usefulness and productivity of the software.

Many have challenged identifying a common on the basis of the characteristics of the resources managed by that institution. (Bresnihan 2015) Several authors point to the etymological root of the word commons. *Munus* means a co-obligation. The common can be conceived as a political principle whereby a group of individuals define obligations to each other while taking part in a common activity or a common task to deal with something that cannot be appropriated. (Dardot and Laval 2015) This is useful when examining water. It is a material resource. But, the techno-science that surrounds it, whether it is a scientific discourse such as the hydrologists' analysis of the recharge of Wadi Fukin springs, or a technology such as hydroponics, is an immaterial resource. So, when looking at a commons managing water, we cannot afford to consider only the rules developed

to deal with the material resource locally. We need to examine simultaneously the scientific discourse and the technological choices that are involved. Knowledge concerning the environment is systematically altered when it circulates and when it is applied. (Goldman, Nadasdy et al. 2011) This is a well-known fact within social studies of science (STS), yet it doesn't appear to have been integrated much in the effervescent literature concerning the commons.

Much of the recent research on the commons has turned away from natural resources to focus on immaterial resources such as open access software (Coriat 2015). As opposed to the initial work in this field, recent research is focused on the theoretical development far more than on fieldwork. One side-effect of this is that clean theoretical categories are not confronted to the messiness of empirical results emerging from field observations. Individuals setting up a system of co-obligations within a common are embedded in a variety of social and economic interactions over many scalar levels. Their commitment to preserving their common is clear. Yet, they pursue simultaneously other activities that are deeply enmeshed with capitalism. Much of the present literature puts forward the common as a tool to coaelesce widespread opposition to capitalism and state control. Empirical research shows us that actors involved in constructing and maintaining commons rather seek a compromise and interactions with the state and with capitalism. For example, most Palestinian villages that maintain commons to manage their springs, their agricultural wells and their irrigation systems also resort to reticulation systems supplied by Mekorot, the Israeli water company, or by the Palestinian Water Authority for drinking water. In Al Jalame, farmers resort to "illegally" drilled boreholes because their four licensed wells have been dry since 2006. The overall volume of water they extract through their "illegal" boreholes amounts to 25% of the total of the yearly quotas attributed to the four "legal" wells. They would much prefer pumping their full quotas from the "legal" wells but they are forbidden from refurbishing them. Their strategy of drilling small boreholes they keep hidden is not a strategy aimed at fighting capitalism or the state. It is only aimed at survival in the face of adversity. They are keen to maintain their common. But they would prefer to keep doing it via the licensed wells, which would be far more secure. At the moment, unexpected visits from Israeli authorities result in the destruction of their unlicensed boreholes, a costly loss for the farmers who pay the full cost of drilling them.

Much of the political ecology studies concerned with water have followed a theoretical framework deeply influenced by David Harvey. He saw neoliberalism forever enlarging the realm of what could be appropriated by Capital. He saw a progressive aspect in this dispossession as he deemed it hastened the advent of Socialism. (Harvey 2010) As a result, political ecology studies inspired by David Harvey often focus on the privatisation of urban water management while dismissing the commons so prevalent in rural water management as a doomed, archaic form. In Harvey's logic, these commons are unavoidably dispossessed in the march of history. As a result, the political ecology literature has neglected the importance of the commons in water management.

We propose to recognise the centrality of the commons in water management in Palestinian territories. This result emerges from empirical research based on fieldwork. We define a "water common" as a socially constructed set of co-obligations concerning human use of water that is produced endogenously to manage aspects of water that can never be appropriated. Palestinian water commons manage flows far more than they manage stocks. We propose to integrate the construction of techno-science when examining the water commons. The construction of techno-science is as political as that of the commons. Yet, most actors involved in both constructions are

rarely aware of the political aspects of the activity. We propose to examine simultaneously the interactions that right holders within water commons maintain with other commons, and with other actors such as the Palestinian Authority and Israel. This can be achieved through a study of the paracommons of Palestinian water.

IV. The paracommons of Palestinian water

The term *paracommons* was coined to designate the Commons made up by the material gains resulting from potential efficiency improvements. (Lankford 2013) Such gains are dynamic because the efficiency gain in one system often entails a loss in a neighbouring system or in a distant, yet interlinked, system. These material gains thus constitute a new commons, the appropriation of which needs to be governed. Various users, various systems and various sectors may compete for the material gains resulting from these efficiency gains. Generating a greater efficiency within an irrigation system is usually portrayed as freeing up water resources for the environment or for another sector such as drinking water. Yet, most often, this does not happen. The "additional" water that is produced thanks to this efficiency gain is most often appropriated by the owner of the water right.

An efficiency gain in one system means deviating the trajectory of water along its previous path to another path. Whoever might have been using water along the previous path, is dispossessed. This user may be nature, the neighbour's field or the neighbouring village's well. The *paracommons* designate the sum total of the water savings that could be generated by a variety of projects aiming at improving the efficiency of a number of systems. The prefix *para* is used because these gains do not exist yet. They are only possible if technological improvements are carried out. They are *commons* because a gain that appears in one system is necessarily linked to a reduction elsewhere. As a result, "improving" the efficiency of a system is not something that is carried out in isolation from the other systems. These gains necessarily form a Common, for which collective decisions need to be made. Yet, a project purporting to improve efficiency of water use systematically receives the support of a donor without any deliberation with the various actors presently relying on the current trajectory of water created thanks to the "inefficiency" of the system that will be improved. Our scientific discourse convinces us that improving the efficiency of water use is always good. So, those actors who succeed in capturing the donors' attention in Palestinian territories also succeed in deviating water flows from other users to themselves.

The great number of options that conversions and losses can decompose to when an irrigation system is made "more efficient" and interconnections among various springs, wells, villages, irrigation systems through the flow of water need to be explored. The term "paragains" designates potential resources that are "created" by changes to the efficiency and net demand of resource use. (Lankford 2013)(p.32) Such paragains can be generated in either of three ways:

- by reducing the present demand and lowering the future demand for water,
- by recovering and using the water that was previously a "waste" in the process, i.e. a loss that could have been recovered but wasn't,

- by transforming "wastages", i.e. non-recoverable losses into "wastes", i.e. recoverable losses with a view to recover them.

Irrigation engineers typically distinguish between intrinsic and extrinsic withdrawals. Intrinsic withdrawals designate the water that is beneficially used, i.e. the water that is evapotranspired through the leaves of plants that are cultivated (not weeds). Extrinsic withdrawals designate the water that is not beneficially used. For example, the water that evaporates through the leaves of a tree that grows next to an irrigation canal constitutes an extrinsic withdrawal according to an irrigation engineer. Yet, the shade that tree provides to the field laborers eating their lunch may be very beneficial to them. Intrinsic and extrinsic withdrawals are not objectively defined. They are co-constructed through a process whereby scientific claims interact with political claims of ownership, excess or waste of the resource. Science and technology studies have demonstrated the manner we understand nature cannot be dissociated from the manner we want to control it. (Jasanoff 2004) As our scientific understanding of nature changes, i.e. as the "natural order" as we understand it changes, our "social order" is unavoidably affected. The reverse is also true. Any quantification of the efficiency gains and their trajectories thus necessarily needs to be carried out simultaneously with a consideration of how and why we are defining this as an efficiency gain and how and why the trajectories of these gains were socially, economically and politically constructed.

Since 1994, donors have been funding water related projects extensively in Palestinian territories (Le More 2008). They have funded waste water treatment plants, water reticulation networks, deep wells, pumping stations, the cementing of irrigation channels, the transformation of open air irrigation channels into pressurised pipe systems... Every time, the project documents argued this would lead to an improvement in the efficiency of water use. The project documents always assumed that the Palestinian water law would apply. Yet, a situation of legal pluralism prevails. (Trottier 2007) This is often the case in states that emerged from decolonisation. (Meinzen-Dick and Pradhan 2001) While the official law in Ramallah specifies that water is public property, the rules deployed to manage most of the water that is used and consumed by Palestinians are spelt out by a great number of commons each constructed over the use of a spring or a well. The context in which the *paracommons* of water are presently appropriated is one where commons are prevalent even though proto-state institutions, such as those of the Palestinian Authority and state institutions, such as those of Israel, are playing a significant role. We propose to recognise water as a flow and to recognise the present role of the great variety of commons in managing Palestinian water to tackle the tricky question of the governance of the paracommons.

So far, the water development projects funded by the donors have rarely considered the manner they were interrelated from the point of view of water flow. Yet, as each of them deviates a water flow from an initial trajectory into a new one, they systematically affect those who were previously engaging with the initial trajectory of water. Donors have systematically engaged with the Palestinian Water Authority to develop a *government* of water. They have failed to engage with the multiplicity of institutions, including the many commons, that presently carry out water *governance* in the Palestinian territories. Exploring the governance of the paracommons provides us with an opportunity to understand how a variety of actors exert power to determine the decisions made regarding water management.

V. Why harnessing the commons can be useful

The commons property movement demonstrated the economic efficiency of managing water through commons. That literature focused on a very small scalar level such as, for example, the area cultivated using water from a given spring. It largely treated the commons it studied as if they were small systems functioning in autarchy. Recent scholarship has been arguing that the common, as a principle of political organisation, could coalesce anticapitalist movements globally. That literature is extremely rich theoretically, but its authors do not tend to carry out fieldwork. Fieldwork spent studying the interactions that commons have with each other, with the state and with other actors allows us to face the messiness of the world. Such research shows us that the same actors who are keen to defend their common to manage their spring or their well also engage simultaneously with the state and with capitalism. They never exist in autarchy, neither isolated from capitalism nor from the state.

The commons that are presently managing most of Palestinian used water offer extremely useful externalities. Their members are used to deliberate and compromise on the basis of commonly agreed principles. This allows the rules to be accepted and implemented. This contrasts with the manner the very same people may not abide by the rules parachuted upon them by the Palestinian Authority. We rarely observe water thefts in farmer managed commons of water. Yet, a village that manages its spring very carefully via a common, often simultaneously demonstrates a great tolerance for illegal connections on the municipal reticulation network that brings drinking water to the houses. The inhabitants respect the rules that were produced endogenously but they often disregard those that were parachuted upon them by an authority they do not respect very much.

A common can only be produced endogenously. The group of right holders defines both their co-obligations and the boundary between those who are excluded from any right to the resource and those who have some rights. Within a common, a great variety of rights and right holders may exist. This is probably the most problematic aspect when tackling the issue of harnessing the commons within a wider institutional framework such as a state. For example, the manner water has been included within human rights only recognizes rights to individuals - the same right to every individual. Promoting the inclusion of commons in managing any resource means accepting that categories of right holders may be defined by nonstate actors and that all individuals will not have the same rights. Commons grant rights to collectives on the basis of criteria that often appear to contradict modern state law. They are often dismissed for this reason. Yet, our examination of the paracommons shows us that development projects do not hesitate to deviate water flows away from groups of users that were previously benefiting from them. This is done unwittingly because efficiency improvements are conceived in a piecemeal approach, without factoring in the interconnections between the various systems the efficiency of which is supposed to be improved. In this case, the categorization of users who benefit and others who lose is carried out by the scientific definition of the efficiency that is considered and by the criteria used by the donor to select its beneficiaries. Clearly, all individuals don't have the same rights in this context either.

Palestinian farmers manage wells and springs that are, aquifer wise, upstream from Israel. Their commons are the most appropriate institutions to regulate non point source pollution linked to agricultural inputs. Harnessing them into a wider institutional structure that manages water will thus benefit both the Palestinian Authority and its neighbor, Israel. Moreover, commons are used to manage water as a flow. Springs are divided according to water turns during which the full flow or half the flow is directed to the right holder during the length of time of his water turn. This could be ten minutes, a few hours, or more. Wells deliver hours of water, even when the farmers' greenhouses have meters. Such a system distributes abundance, when the spring flow is high or when the pump is well maintained, and scarcity, when the spring flow decreases in summer or when the well needs to be refurbished, in an unequal yet socially accepted manner.

If we choose to consider water as a flow instead of as a stock, the present squabbles over quantities that presently stall any progress in Israeli-Palestinian negotiations over water, simply disappear. This means removing flags from water drops, recognizing that every user is handling a water drop that has already been used several times and will be used again many times before it leaves the system. As water flows, it cannot be appropriated. Instead, it can be managed successfully if all of the institutions interacting with that flow, whether commons or state institutions, are gathered into an institutional structure on the basis of commonly agreed principles. No one in either Israel or the Palestinian Territories will disagree with the idea that water needs to be managed in an economically viable and environmentally sustainable fashion, that drinking water must be given priority, and that any agreement needs to be implementable. No one will disagree with the principle of subsidiarity either, according to which a problem should always be solved at the most appropriate scalar level, usually the smallest scalar level. An adequate institutional structure would recognise the existence of the commons presently managing Palestinian water through a local water management board. It would include a mediation board where any institution, whether a small common or a state ministry could lodge a complaint. Wadi Fukin could complain there about the surrounding urbanisation that destroys the flow of its springs. The Israeli ministry of health could complain about chemicals used in agriculture and polluting the aquifer.

Although such a structure deserves a far more detailed description than is possible here, it is not far fetched. Ibn Khaldun argued as far back as the 14th century that a powerful state could only exist if it harnessed the *assabiyah* (the social capital) of the different communal forms of social organisations that composed it. Western states arose as the dominant form of social organisation because communal forms of social organisation progressively disappeared from the 15th century onward. This did not happen elsewhere. Legal pluralism thrives wherever the sate has not achieved the predominance it did in Europe. Instead of ignoring the commons that presently play such a crucial role in water governance in Palestinian territories, we can choose to harness them into an institutional structure over a wide scalar level.

Bibliography

Bresnihan, P. (2015). The More-than-Human Commons: From Commons to Commoning. *Space, Power and the Commons: The Struggle for Alternative Futures*. S. Kirwan, L. Dawney and J. Brigstocke. New York, Routledge.

Coriat, B., Ed. (2015). *Le retour des Communs La crise de l'idéologie propriétaire*. Paris, Les Liens qui libèrent.

Dardot, P. and C. Laval (2015). *Commun, Essai sur la révolution au XXIè siècle*. Paris, La Découverte.

Goldman, M., P. Nadasdy, and M.D. Turner (2011). *Knowing nature : conversations at the intersection of political ecology and science studies*. Chicago, Ill. ; London, University of Chicago Press.

Hardt, M. and A. Negri (2009). *Commonwealth*. Boston, Harvard University Press.

Harvey, D. (2010). *The Enigma of Capital and the Crisis of Capitalism*. London, Profile Books.

Haviv, I. and L. Asaf (2005). "The Hydrological System of Wadi Fuqeen Springs". Tel Aviv, Friends of the Earth Middle East.

Jasanoff, S. (2004). *States of knowledge : the co-production of science and social order*. London ; New York, Routledge.

Lankford, B. (2013). *Resource Efficiency Complexity & the Commons*. London, Routledge.

Le More, A. (2008). *International assistance to the Palestinians after Oslo: political guilt, wasted money*. London, Routledge.

Meinzen-Dick, R. S. and R. Pradhan (2001). "Implications of legal pluralism for natural resource management." Ids Bulletin-Institute of Development Studies **32**(4): 10

Ostrom, E. (1990). *Governing the Commons*. Cambridge, Cambridge University Press.

Ostrom, E., T. Dietz, N. Dolsak and P. Stern., Eds. (2002). *The Drama of the Commons*. Washington, DC, National Academy Press.

Trottier, J. (1999). *Hydropolitics in the West Bank and Gaza Strip*. Jerusalem, PASSIA.

Trottier, J. (2007). "A wall, water and power: the Israeli 'separation fence'." Review of International Studies (33): 105-127.

List of recent AFD Research Papers

AFD Research Papers are available through AFD's website at https://www.afd.fr/en/ressources

2018-66 DAVID, A., N. GUILBERT, N. HAMAGUCHI, Y. HIGASHI, H. HINO, M. LEIBBRANDT and M. SHIFA (2018), "Spatial poverty and inequality in South Africa: A municipality level analysis", *AFD Research Papers Series*, No. 2018-66, January.

2018-67 CLÉMENT, M., Y.-A. Faure, J.-P. BERROU, F. COMBARNOUS, D. DARBON et E. ROUGIER (2018), "Anatomie de la classe moyenne brésilienne : identification, caractérisation et implications pour les politiques publiques", *Papiers de recherche AFD*, n° 2018-67, Juin.

2018-68 MAUREL, M. (2018), "Régionalisme en Afrique : coûts de transport « soft » and « hard »", *Papiers de Recherche AFD*, n° 2018-68, Juin.

2018-69 MILUSHEVA, S., E. zu ERBACH-SCHOENBERG, L. BENGTSSON, E. WETTER and A. TATEM (2017), "Understanding the Relationship between Short and Long Term Mobility", *AFD Research Papers Series*, No. 2018-69, June.

2018-70 DE NADAI, M., E. LETOUZÉ, M.C. GONZÁLEZ and B. LEPRI (2017), "Characterizing and analyzing urban dynamics in Bogota", *AFD Research Paper Series*, No. 2018-70, June.

2018-71 BERROU, J.-P., D. DARBON, C. BOUQUET, A. BEKELYNCK, M. CLEMENT, F. COMBARNOUS et E. ROUGIER (2017), "Le réveil des classes moyennes ivoiriennes ? Identification, caractérisation et implications pour les politiques publiques ", *Papiers de recherche AFD*, n° 2018-71, Juillet.

2018-72 BURNS, J., G. HULL, K. LEFKO-EVERETT and L. NJOZELA (2018), "Defining Social Cohesion", *AFD Research Papers Series*, No. 2018-72, June.

2018-73 BURNS, J., LEFKO-EVERETT K., NJOZELA, L. (2018), "From definition to measurement: constructing a social cohesion index for South Africa", *AFD Research Papers Series*, No. 2018-73, June.

2018-74 MEIRING, T., C. KANNEMEYER and E. POTGIETER (2018), "The Gap Between Rich and Poor: South African Society's Biggest Divide Depends on Where You Think You Fit In", *AFD Research Papers Series*, No. 2018-74, June.

2018-75 TORNAROLLI, L., M. CIASCHI and L. GALEANO (2018), "Income Distribution in Latin America. The Evolution in the Last 20 Years: A Global Approach", *AFD Research Papers Series*, No. 2018-75, April.