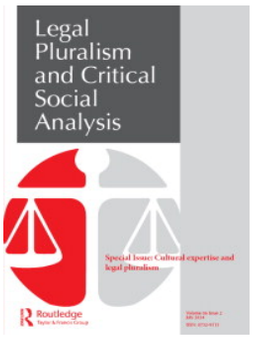

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The social life of water rights: towards a contractual approach

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ABSTRACT

Superseding the ambiguous distinctions between formal and informal or between de facto and *de jure* rights developed in water studies, the study of water rights got a new lease on life when Franz and Keebet von Benda-Beckmann proposed a distinction between categorical and concrete rights. While this approach apparently explains the social embodiment of state, customary, or local normative formulations, a closer examination shows that water rights are not enacted as enforceable entitlements but constantly (re)negotiated at every water turn. Thus, the fluid and contingent social life of water rights in Farmer-Managed Irrigation Systems (FMIS) is best understood in terms of their contractual character.

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Introduction

In this article, I examine the contributions of Franz and Keebet von Benda-Beckmann to the legal anthropological study of water rights.[1] Thanks to their insights, our understanding of the social life of these rights has improved significantly. They showed that water rights are enacted in normatively plural contexts and are always subject to multiple hydrological, ecological, social, political and economic contingencies. They also introduced the distinction between categorical and concretized rights, and between rules and principles, to stress that water rights can only be construe as an umbrella concept given the different ways in which human societies use the resource. Finally, the von Benda-Beckmanns assigned a key role to negotiation in the allocation of water turns in Farmer-Managed Irrigation Systems (FMIS). Based on this particular observation I propose a contractual approach to enhance our ethnographic observation of how are water turns finally assigned and granted in these social fields.

As Roth, Boelens, and Zwarteveen (2015) point out, Franz and Keebet von Benda-Beckmann started working on water rights in Farmer-Managed Irrigation Systems (FMIS) at a time when the international development agencies were concerned with the impacts and failures of their modernization projects in such systems.

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Trying to understand the conflicts unleashed by their interventions, and defining "FMIS as a source of irrigation knowledge […,] organizations like FAO, IWMI, IFPRI[2] and the Ford Foundation became interested in and subsequently funded FMIS research in several countries" (Roth, Boelens, and Zwarteveen 2015, 458). By the mid-1990s, the Ford Foundation funded one of these research and training projects on water rights in Nepal and India, allowing the von Benda-Beckmanns to further develop their interest in water rights within the context of FMIS.[3]

At the time, mainstream state-centric and legalistic characterizations of water rights prevailed in a scientific and developmental community that was "the preserve of economists, planners, and engineers" (Roth, Boelens, and Zwarteveen (2015, 458).[4] Few dissident perspectives challenged this consensus. For example, Coward ([1986] 2018) observed that rights to water and to use an irrigation system derived from the "hydraulic property" that users created by participating in the construction and maintenance of such a system.[5] On his side, anthropologist Abdellah Hammoudi insisted that property rights on water emerged from practice, and that "behind the official rules" there were social and power relationships determining the "actual process of water distribution" (Hammoudi 1985, 28, 52).

Finally, Elinor Ostrom and her colleagues distinguished *via* "the 'bundle of rights' metaphor between rights of access, withdrawal, management, exclusion, and alienation" (Roth, Boelens, and Zwarteveen 2015, 459).[6] They showed how common property regimes exhibited a different profile from state or market resource management, and would even perform better in local contexts.[7] However, the von Benda-Beckmanns were critical of their conceptual framework for identifying rules as prescriptions granting entitlements or imposing duties, on the one hand, and rights as the actions and endowments authorized by those rules (Ostrom and Schlager 1996, 130-131), on the other (Benda Beckmann and Benda-Beckmann 2000, 19, footnote 7). They felt that it was inadequate and never went beyond the conceptual and normative level. They also questioned the neo-institutional assumption that collective and individual practices are rational responses to rules, institutions, and incentives (Rap and van der Zaag 2019, 2). Disregarding the highly differentiated response of social actors to normative and institutional frameworks blocked the anthropological analysis of water rights. New tools were required to grasp the social embodiment of legal formulations.

In this respect, the von Benda-Beckmanns' contribution to the study of water management and irrigation cannot be overstated. This was due to their formidable academic careers and extensive fieldwork experience. While Franz held the Chair for Non-Western Agrarian Law at Wageningen University in the 1980s and 1990s, Keebet was a professor of Anthropology and Sociology of Law at Erasmus University in Rotterdam at about the same time. Practicing rather than simply claiming interdisciplinarity, they were able to learn from as well as teach engineers, developers, lawyers, and anthropologists how to traverse disciplinary boundaries and, with those insights, enrich the legal anthropological take on water rights (Roth, Boelens, and Zwarteveen 2015, 4-5). They helped formulate, for example, the three-dimensional approach to water rights, encompassing the socio-legal, technical, and organizational dimensions (see below; Boelens and Vos 2014, 56; Boelens 2021, 431). With these tools in hand, and questioning the "vaguer […] distinctions between formal and

informal or between de facto and de jure rights" applied by institutionalist literature (Boelens 2008, 73; see Benda-Beckmann and Benda-Beckmann 1998, 54), the von Benda-Beckmanns started their legal anthropological exploration of waterscapes.

In this article, I examine their contribution to the renewal of water rights studies. I emphasize the key role they attribute to negotiation and contested principles in the final allocation of water. Their insights inform the contractual approach proposed here to improve our understanding of the social life of water rights in FMIS. To start, I suggest using the term *contract* for analyzing the fluid social relations configured around the resource in small-scale irrigation systems. Second, I review the von Benda-Beckmanns ideas on water rights jointly.[8] Their claim that water rights are an umbrella concept that encompasses a bundle of rights played out in conditions of legal pluralism is central to understanding the difference they draw between categorized and concretized rights. However, this theoretical breakthrough, which stressed fluidity and contingency, was not yet fully developed when they alleged that fixed water rights behave the same as normal private property rights. Third, I try to find an explanation for this shortcoming by pointing out the possible influence of terrestrial imagination and land tenure, the epitome of property rights, in this characterization of specified water rights.

Fourth, I provide ethnographic examples of the central role bargaining and negotiation play in the actual allocation of water rights, be these authorized by state, local, or customary normative frameworks. As the sample shows, water rights are constantly negotiated and end up being reconfigured by the everyday negotiations that take place between users and local authorities. In the fifth part, I suggest we need to differentiate between legal and negotiated orders when observing the normative profile of social fields like the FMIS. A close ethnography of the everyday practices of water allocation will lead to an appreciation of their contractual character. In my final remarks, I offer an overview of my argument and pay tribute to Franz and Keebet von Benda-Beckmanns' legacy.

Negotiation and contractual practices

Negotiations and contractual practices characterize the daily routine of irrigators and their authorities, particularly canal operators. While I am aware that the use of the word *contract* in contemporary legal anthropology is frowned upon, I nevertheless find it useful to describe the contingent, negotiated, and flexible character of water rights allocation in FMIS.

It is curious, to say the least, that this term has been expunged from our analytical vocabulary, while other deeply Eurocentric terms and closely linked to modernity are frequently used in ethnographic accounts and theoretical debates (i.e. law, rights, property, religion, economy).[9] Observing this irony, the Benda-Beckmanns and Wiber ask, for example, if we should "do away altogether with the term property," but they convincingly argue that "the word property can be redefined as a general analytical category" (2006, 14).[10] Thus, in general, the "crucial question is whether and under what conditions the concept of law [, property, or contract: AGG] could be usefully fashioned into a cross-cultural comparative concept" (Benda-Beckmann 2002, 43).

The continued validity of the evolutionist prejudice summarized in the *dictum* pronounced by Sir Henry S. Maine in his well-known *Ancient Law* (1861) – "the movement of the progressive societies has hitherto been a movement *from Status to Contract*" – almost certainly conditions legal anthropological views of social reality.[11] According to this old evolutionist polarity, while some societies are savage, traditional, or statutory, others are civilized, modern, or contractual. Hence, "while tradition and culture shape the law of primitive [or traditional: AGG] societies, intellect and intention shape the law of modern societies" (Moore 1978, 4). It follows that societies of the first order lack contractual relationships as their members blindly follow custom, routine, or tradition – a difficult position to defend in this day and age.[12]

It is also likely that the legal anthropological endeavor has privileged the quest for normative legal orders, with its characteristic rules, sanctions, authorities, and programmed authorized behaviors. But we have to remember that normative orders are also relational, contractual, or negotiated, as Benda-Beckmann et al. (1997b) and other scholars have stressed (e.g. Benda-Beckmann, Spiertz, and von Benda-Beckmann 1997; Bruns and Meinzen-Dick 2000; Collier 2002; Comaroff and Roberts 1981; Malinowski 1926; Pirie 2023; Pospisil 1963, 1974; Roberts 2005; Tamanaha 2021).[13] Within this kind of social ordering, people unfold their meaningful practices and weave their social networks on a daily basis, structuring society from the bottom up. This is why an actor-oriented perspective is prone to depicting the negotiations, agreements, and arrangements over a fluid resource such as water.

Of course, I am not suggesting that contractual relations are synallagmatic, balanced, or equivalent.[14] Water relations in FMIS, as in any other social field, are embedded in power relations and are part and parcel of the constellation of unequal social, cultural, economic, legal, and political bonds that assemble society (Benda-Beckmann and Benda-Beckmann 2001, 2). Moreover, despite ideological or normative assertions of social solidarity, self-interest might prevail over altruism. But we have to remember that everyone has a stake in keeping the water flowing and the social network configured (Malinowski 1926). Some describe the outcome of these negotiated orders as "a social contract" (Shukla et al. 1997, 173),[15] but the fact is that these agreements are made "often grudgingly and provisionally" only after "fighting, pressing and disputing" (Benda-Beckmann, Spiertz, and von Benda-Beckmann 1997, 234).

In addition, I understand that the term contract may be interpreted as a tributary to the social contract theories that define societies as associations of rational, free, and equal individuals who voluntarily decide to live in society. It may also be taken as one of the postulates of neo-institutionalism or methodological individualism on social action and rational choice (Boelens 2008, 22; Rap and van der Zaag 2019, 1-2). According to this approach, the system of contractual exchanges that individuals carry out to maximize their interests magically contributes to the well-being of society. These ideologically loaded definitions of contract should not deter us from attempting an analytical use of the term contract, just as Benda-Beckmann (2002) proposed for the concept of law or the von Benda-Beckmanns and Wiber for the concept of property (2006).

Finally, there is the objection that a focus on "individualized agency and individualistic choice leads to difficulties in analyzing the rules of the game" of water management, which "is, by nature, a collective affair in Andean water control" (Boelens 2008, 22).[16] This concern is overcome if we recall the von Benda-Beckmanns insight on the importance of principles – and not rules – in water management (see below). The *rules of the game* are not fixed behavioral programs, but rather contested and negotiable principles pleaded by water users and their authorities in their daily interactions.

A new take on water rights

In a section entitled *Materiality and imagination* in an article from 2009, Keebet von Benda-Beckmann stressed the importance of paying attention to the "materiality of property objects" (Benda-Beckmann 2009, 269). Her concerns with space and materiality were not the result of any fashionable *spatial* or *material* turn. As far back as the late 1990s, she was already aware that water user groups structured their social fields and legal spaces according to the properties of water as a resource (e.g. rainfall, surface water, groundwater) (Benda-Beckmann, Benda-Beckmann, and Spiertz 1997, 31; Benda-Beckmann 2009, 271). In this way, water rights were "closely linked to the vital function of water, its specific ecological characteristics, and the crucial role of the water infrastructure in delivering the right quality and quantity of water to the right place at the right time" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1997, 30). For example, the fact that "the supply of water often fluctuates sharply over the short term" or that "water flows downhill" have "major implications for the regulation of water use" by upstream and downstream users and irrigators (von Benda-Beckmann, Benda-Beckmann, and Spiertz 1997, 30).

The complexity of these water worlds, even in FMIS, led the von Benda-Beckmanns to conclude that "the concept of water rights can never be more than an 'umbrella concept'." First, because "the many different forms and functions of water" ensue "quite a variety of different rights to different kinds of water" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 80).[17] Second, because the crisscrossing grid of entitlements (e.g. use, transfer, claim, decision-making) and duties creates a "bundle of rights," private and public, to "control, regulate, supervise, represent in outside relations, and [distribute: AGG] and allocate water, on the one hand, and rights to use and exploit it economically on the other" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 81; see Benda-Beckmann, Benda-Beckmann, and Wiber 2006, 17-18).[18] As Beccar, Boelens, and Hoogendam (2002) synthesized, these bundles of water rights in FMIS are authorized demands to use a flow of water under certain obligations, including the right-duty to participate in collective decision-making processes (*in* Boelens and Vos 2014, 56; Boelens 2021, 431).

Third, water rights are usually enacted in conditions of legal pluralism that "involve complex constellations of state law, customary law or customary practices, as well as religious law" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 78; see Benda-Beckmann and Benda-Beckmann 2003, 67-68). Although the Benda-Beckmanns were not particularly concerned with the "struggle between different ways to conceive water ontologically" (Cardoso and Pacheco-Pizarro 2022,

136; Stensrud 2021), they hinted at the importance of pondering the different conceptions of the world that were at stake in pluralistic contexts. This is one of the reasons why water is subject to "plural, and often conflictive property rights" regimes (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 78; see Benda-Beckmann, Benda-Beckmann, and Spiertz 1997, 226; Benda-Beckmann and Benda-Beckmann 2000, 19-20).[19] From these multiplex, supra-local normative conditionings, it follows that water rights have both external and internal aspects. External ones "specify the range of rights of the group, for example, the state, the village community, the family, the water user association" concerning other individuals and collectivities. Internal "rights specify the rights of the group members vis-à-vis each other and the group" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 82).

How did they account for these "multiple contingencies of water rights" (Benda-Beckmann and Benda-Beckmann 2000; Benda-Beckmann, Benda-Beckmann, and Pradhan 2000)? At first, apparently inspired by Ostrom and Schlager's distinction between rules and rights (see Introduction),[20] they still used a mechanical model to explain the enactment of rights granted by normative commands. This is why Keebet von Benda-Beckmann and her coauthors distinguished between "abstract rules" and "*actual* rights" in "management rights, rights of tenure and use rights" (italics in the original). In their view, "abstract law takes concrete form in legal relationships […] embedded in the wider social and economic structure" (Benda-Beckmann et al. 1997a, 5).[21]

This abstraction-to-concreteness model was soon replaced by a more elaborate assessment of the social life of water rights in farmers' irrigation systems (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996; Benda-Beckmann, Benda-Beckmann, and Spiertz 1997). According to their view, "We need to distinguish the *legal constructions* of categories of water rights from the *actual social relationships* that connect concrete right holding individuals, groups or associations with concrete and demarcated resources" (Benda Beckmann, Benda Beckmann, and Spiertz 1996, 82-83; italics in the original). In this way, "the actual constellation of social relationships between concrete social entities and concrete water resources" became clearly differentiated from the legal world of forms, concepts, and regulations (Benda Beckmann, Benda Beckmann, and Spiertz 1996, 83).

The differentiation between legal formulations and social relations over resources was very useful for fine-tuning the von Benda-Beckmanns' legal anthropological analysis of water rights (Benda-Beckmann and Benda-Beckmann 2000). Concerned about the enforcement of women's water rights, they stressed the need to distinguish between categorical and concretised rights.[22] On the one hand, "categorical rights define in general terms the legal status of categories of persons and property objects as well as the type of rights and obligations between persons with respect to property objects"; on the other hand, "We speak of concretised rights when the legal criteria of a categorical right are inscribed and become embodied in a social relationship between actual persons with respect to actual property objects" (Benda-Beckmann and Benda-Beckmann 2000, 18-19).[23]

To analyze the appropriation, use, and management of water at the local level, one has to discern two features. First, "the dominant constructions of categorical rights often are hybrid legal forms consisting of elements taken from state legislation

and older or more recent local traditions ('local law')" (Benda-Beckmann and Benda-Beckmann 2006, 110).[24] Second, water rights are contingent upon "legal and non-legal elements, on land rights, family relationships, political organization, and ecological conditions" (Benda-Beckmann and Benda-Beckmann 2000, 20-21; Boelens and Vos 2014, 56).

In this way, the Benda-Beckmanns stressed that water rights in FMIS were subject to multiple stipulations. They also observed that once the collective right to water was divided into fixed turns or specified volumes, these became "*very similar to a normal private property right*" (Benda-Beckmann and Benda-Beckmann 2000, 24; also, Benda-Beckmann 2007, 266; italics added). This assertion is quite puzzling because they also remarked that "water rights have a different character than those to land due to the physical-natural characteristics of water" (Benda-Beckmann and Benda-Beckmann 2000, 22; see Benda-Beckmann and Benda-Beckmann 1998, 53). As such, they could not be precisely fixed "in time and space as easily as rights to land" (Benda-Beckmann and Benda-Beckmann 2000, 22). While land rights "can be defined with respect to a clearly demarcated part of the environment," water rights "are nearly always defined as relational with respect to other users" (Benda Beckmann and Benda-Beckmann 2000, 22; see Benda-Beckmann and Benda-Beckmann 1998, 54; Benda-Beckmann 2007, 264).[25] Water rights are therefore incommensurable with (landed) private property rights due to the characteristics of the resource, a point they and many others have raised.

Fluidity and property rights

As Keebet von Benda-Beckmann pointed out, water is a very peculiar resource that appears in nature in different shapes and forms. This fact conditions the normative frameworks and allocation mechanisms human societies have devised throughout history to tap into this natural resource.

> [T]he literature on rights to water has long demonstrated the importance of looking at the physical characteristics of water. Water lacks stability; it flows, disappears, comes in overabundance, or does not come at all; it is deep under or right below the surface; saline water pushes into the land. All of this has decisive effects on the ways property rights to water are constituted, organized, and maintained (Benda-Beckmann 2009, 270).[26]

Indeed, water is "a fugitive resource" (Benda-Beckmann and Benda-Beckmann 2000, 22). Its fluidity begs the questions: "What kinds of rights can one claim over a fluid resource?" and can "water be the subject of property" (Shankar 2023, 79, 89)? As the legal historian Joshua Getzler stresses, in Western law the legal characterization of the resource faces difficulties because "underlying the law's intricate structure of property rights corporeal or incorporeal […] lay an abiding principle of physical possession as the foundation of right" (Getzler 2006, 43).

Using categories inherited from Roman Law, legal scholars have faced the difficult task of defining the legal forms in which such a fluid, variable, and socially embedded resource can be accessed and appropriated (Shankar 2023, 84-85). Overall, they

concluded that "flowing water cannot be possessed in a tangible fashion like land, only quasi-possessed or appropriated by user" (Getzler 2006, 2).

For example, William Blackstone, the famous author of *Commentaries on the Laws of England* (1765-1769), concluded that "title subsists only during time of use, as water can not be possessed or appropriated in the manner of land" (*in* Getzler 2006, 154). In contrast to the permanent occupation and exclusive control of a piece of land over time, for example, water was "subject to use-rights only" (Getzler 2006, 174).[27] All in all, the attribution of rights depended on the nature of the resource:

> Many other things may also be the objects of qualified property. It may subsist in the very elements, of fire or light, of air, and of water. A man can have no absolute permanent property in these, as he may in the earth and land; since these are of a vague and fugitive nature, and therefore can admit only of a precarious and qualified ownership (Blackstone *in* Getzler 2006, 176).

It is this *qualified and precarious ownership* that has been translated into "the right to [landed: AGG] property, long considered by liberal thinkers to be one of humanitý́s foundational rights" (Shankar 2023, 79). And, even more importantly for appreciating the impact of this process, it has been "shaped and nurtured by *a terrestrial imagination*" (Shankar 2023, 79; italics added).[28] The outcome of this reductionist conceptual operation is that the physical, chemical, and biological characteristics of the resource are obliterated and expelled from the analytical, legal, and political fields of observation and decision-making.

The importance of the terrestrial imagination cannot be overemphasized.[29] As Carol Rose (1996, 349) explains, land is the symbol of property, and property is the symbol of all rights. Ideally, land can sustain the necessities and provide independence to its owner. In this way, landed property and land rights become the root metaphors from which all other forms of use and appropriation of other kinds of resources stem. However, it is worth asking "Why is land –immovable, enduring land – the central symbol for property? Why not, say, water?" (Rose 1996, 351). Her answer to this counterfactual question opens new legal imaginaries:

> If water were our chief symbol for property, we might think of property rights – and perhaps other rights – in a quite different way. We might think of rights literally and figuratively as more fluid and less fenced-in; we might think of property as entailing less of the awesome Blackstonian power of exclusion and more of the qualities of flexibility, reasonableness, and moderation, attentiveness to others, and cooperative solutions to common problems (Rose 1996, 351).

If we apply this hindsight to the study and enforcement of property rights, the consequences could be significant. Even for the legal and the legal anthropological inquiries, and ensuing regulations and policies on water rights, the implications would be substantial. The inability to physically apprehend the resource, the low degree of exclusion of other users, and its temporary use would require not only alternative analytical lenses but also different policies and laws. Water rights would be seen as fluid, contingent, negotiable, and eminently shareable, as usually happens in FMIS.

But to open new avenues of research, we need to be consistent and overcome both the terrestrial imagination and the idea that fixed water rights become *very*

similar to normal private property rights, as the von Benda-Beckmanns stated in 2000 and 2007 (see previous section).

"Precarious negotiated orders"[30]

The ethnographic record consistently shows there is a particular way in which some water user associations devise the distribution of the resource. Particularly in FMIS, negotiation of volumes, turns, and schedules becomes the path through which water rights are finally enjoyed. Several scholars stress the significant role of negotiation in local or customary water law. As it becomes clear from the following sample, we need to focus less on the normative framework and normative content of rights and more on their contractual character, as derived from the endless and pervasive bargains that condition their social life. This is why the von Benda-Beckmanns and Spiertz observed:

> The important legal issue concerning water rights in Nepal does not seem to lie in a contradiction between alternative and contradictory legal formulations of water rights, but rather in the provisional character of the negotiations over water rights. The significance of this is particularly great because of the high *frequency* of these negotiations […]. As a consequence, these *negotiated orders* are highly provisional and temporary (Benda-Beckmann, Spiertz, and Benda-Beckmann 1997, 226; italics added).

Therefore, water rights have to be defined relationally because of the fluidity, uneven flow, and multifunctionality of the resource (Benda-Beckmann and Benda-Beckmann 2000, 22; Benda-Beckmann 2007, 264). These characteristics created "the preconditions for the continuous flux in irrigation arrangements and the constant renegotiation of water rights" (Benda-Beckmann and Benda-Beckmann 2000, 25; see Benda-Beckmann et al. 1997a, 6, 8; Benda-Beckmann, Benda-Beckmann, and Wiber 2006, 11).

There are three driving forces behind these constant readjustments and variations of the rights to access, allocation, and distribution of water, as well as of the obligations to contribute to the maintenance of water systems (Benda-Beckmann, Spiertz, and Benda-Beckmann 1997, 226). The first one is socio-economic, from migration or population growth to the increase in irrigated land. The second one is the changing political and administrative relationships between farmers, water user organizations, local and national developmental and water authorities, and NGOs. The third one is the ecological and geomorphic changes that water systems experience due to floods; flow alterations; earthquakes; landslides; or changes in the irrigation technology, infrastructure, or crop patterns and phases (Benda-Beckmann and Benda-Beckmann 2000, 24-26; Benda-Beckmann and Benda-Beckmann 1998, 62-63; Benda-Beckmann and Benda-Beckmann 2003, 73, endnote 4; Benda-Beckmann, Spiertz, and Benda-Beckmann 1997, 226-227; 240-242; Durga and Pradhan 1997, 144).

Within this dynamic of "frequent renegotiation of specific water rights, it becomes crucial for individual water users to be able to participate in such negotiations" (Benda-Beckmann and Benda-Beckmann 2000, 26). And, as Keebet Benda-Beckmann observed when documenting gender gaps, "the result is a permanently shifting 'negotiated order' which determines whether – and which – women can ultimately

obtain rights to land and water" (Benda-Beckmann et al. 1997a, 6-7; see Benda-Beckmann and Benda-Beckmann 2000, 24-26). So, negotiation "appears to have increasingly become a means of acquiring access to water" (Benda-Beckmann, Spiertz, and Benda-Beckmann 1997, 242). This can take place "in the shadow of the water court," like in the American Southwest irrigation districts or in open-field assemblies (Schlager 2006, 300).

Regarding these unstable negotiated orders, early on, anthropologist Clifford Geertz established a dichotomy between the irrigation systems of Bali and Morocco. While the former was characterized by "pluralistic collectivism," the latter was presided over by an "agonistic individualism," wherein the irrigators used a "general, universalistic moral-legal code […] as a basis for forming contracts, arguing issues, deciding conflicts, maximizing options, and adjusting opportunistically to passing reality." Moreover, he argues that in Morocco, "there is no 'village water' here. There are rules; a very great many of them. But they are phrased in terms of individual rights, not collective necessities, as *contractual, not civic, obligations*" (Geertz 1972, 37, 34; italics added).

Edward Coward (2018 [1986]) also paid attention to the negotiable character of water rights. In irrigation systems in which water rights were "sufficiently secure […] it is recognized that they can be transferred and exchanged as can other objects of property, such as land and cattle" (Coward 2018, 506-507). In systems where no such security existed, the "absence of specific property rights [ends up in: AGG] a high level of ad hoc behavior involving the individual (sometimes collective) negotiation of impermanent and idiosyncratic use rights." In the end, both kinds of systems are relational. Like Benda-Beckmann et al. (1997a), Coward also concluded that "such transient rights foster a more negotiated form of social structure" (2018, 507), one that he calls a "network order" (Coward 1990).

For Abdellah Hammoudi, one of the authors who influenced the von Benda-Beckmanns' early work on water rights, continued negotiation was "an attempt to control, through social relationships, what seems to be an uncontrollable substance – a certain quantity of water that cannot be known with exactitude" (1985, 28-29). Water turns, for example, are measured in a variety of ways: how long it takes the shadow of a stick fixed on the ground to move a foot; how long it takes a candle to burn down; the position of the stars; "how long it takes a professional reciter to recite a poem of a particular length" (Hammoudi 1985, 41), a certain number of fingers marked on a wooden rod for each irrigator (Coward 1990, 81), or indented pieces of wood for dividing water flows (Leach 1961, 160). Because of this indeterminacy, both the resources and the social relationships around them are fluid and malleable. For this reason, all a water user "has in his hands – as distinct from a substance – is a relationship that is evaluated in relation to other users over time" (Hammoudi 1985, 52).

In an edited volume entitled *Negotiating Water Rights* (Bruns and Meinzen-Dick 2000), several authors underscore this characteristic of irrigation systems, particularly of FMIS. For example, Meinzen-Dick and Bruns realized that "water rights are not static but nearly as fluid as the resource itself, subject to negotiation and change" (2000, 16). Accordingly, water allocation is a negotiated process. This dynamic system of water allocation is largely due to the technology being used, and this

means that in FMIS the exclusion rate in quite low. Moreover, rule enforcement is ambiguous and contested. The outcome is that "testing of boundaries, tolerance for errors and flexibility in response to unique circumstances are part of the tapestry of self-organized behavior" (Meinzen-Dick and Bruns 2000, 35; see Bruns and Meinzen-Dick 2000, 354).

On this point, Vermillion (2000) documented that water distribution is based on "flexibility, tolerance, and experimentation," including "mutual adjustment," which results in "neither complete communal harmony nor brutish opportunism" (Vermillion 2000, 63-64, 78). Frequent interpersonal action and exchange of information allow the farmers "to build common knowledge about physical differences and identify valid justifying criteria for adjusting the standard allocation rule" (Vermillion 2000, 79).

In my own fieldwork experience with two small FMIS in the Andean highlands of Junín and Huancavelica, Peru, (Guevara Gil 2013, 241-282, Guevara Gil 2015) it is clear that negotiations overrule any national legislation, local bylaw, or general assembly agreement of the water organizations. Water rights allocation takes place in small meetings presided over by ditch tenders at the foot of every intake derived from the main canals of these irrigation systems (e.g. Santa Rosa de Ocopa, Junin, and Santa Rosa de Tambo, Huancavelica). According to local legality, for example, the weekly scheduling of irrigation timetables ought to follow an ideal sequence. Turns should be assigned following the canal's course and, to prevent a user from always getting daytime or nighttime turns, the canal operator should alternate between allotting turns from the main intake to the tail end, from the tail end to the intake, and from the middle upwards or downwards. That is, he has to rotate the starting point every week. Consequently, nighttime and early morning turns would be distributed fairly.

This arrangement, ideally designed to prevent the same people from always getting the worst turns, i.e. the old colonial "Indian turns,"[31] is also subject to constant contingent negotiations.[32] Although the canal operator tries to keep the ideal turn sequence, irrigators also have the power to select the slot they prefer in their weekly meetings. Turns assigned by the canal operator in these assemblies are the product of negotiations in which the canal operator, the petitioner, and the rest of the users take part. While this does not ensure that the water flows consistently, it does follow the agreements made at each meeting.

Setting aside prejudices against "Indian turns," some farmers prefer to irrigate at night or in the early morning because "at night you can work more at ease, nobody bothers you, things get done quicker," there is less water theft, and, as their plots are large, they can request longer turns (3-4 h) to "soak" (*empapar*) their fields. Some even say that "at night the water is warm; when the sun comes out it is freezing cold, but when you are working you don't even feel it" (Guevara Gil 2013, 258). However, there is no one specific preference to irrigation turns. Some farmers choose slots during which they can count on the support of peons or relatives, while others choose turns that are compatible with the multiple occupations they carry out in the countryside or in nearby cities. There are also farmers who believe they must irrigate during either the day or night to prevent some plague or disease from attacking their crops.

As these cases show, irrigation turns are negotiated and not predetermined. Water availability does not operate according to a schedule; it cannot be planned far in advance. Demand has to be assessed in real time. This is the reason why irrigators meet weekly instead of on a monthly, quarterly, semi-annually, or annual basis. On this point, I recall a talk I had with the then recently sworn-in president of the FMIS of Santa Rosa de Ocopa back in 2005. He told me his plan to procure a computer to "computerize the turns" throughout the agricultural seasons. He envisioned a system in which all registered canal operators and irrigators would know who, when, and how much was being irrigated at any given time. Most likely, he came up with this modernist dream as part of some training course (the infamous *capacitaciones*) or during an internship in the water user associations of the irrigated coastal valleys, where water control is stricter than in the highlands (Vos 2002). While the FMIS never purchased the computer, due to a lack of funds, such a regimentation of the irrigation schedule was almost certainly doomed to failure. For the system to work, weekly assemblies – during which interests, conflicts, and emotions are conveyed and processed amid serious discussions interspersed with jests and gibes – are essential for negotiating water rights. This is why users invest so much time and effort into the task of attending weekly intake meetings.

Finally, Zwarteveen and Boelens (2006) also concluded that FMIS cannot control water flows in a precise way. This is why "the distribution of water, perhaps more than any other resource, is typically subject to continuous bargaining and negotiation." This haggling takes place "around the technical characteristics of the irrigation infrastructure, around the operation of the infrastructure, or about the contents of the water right." In this way, to understand water distribution and allocation it is necessary to detect "the actual water use and distribution practices and the different norms and discourses" water users deploy in their daily life negotiations (Zwarteveen and Boelens 2006, 7).

These observations led Zwarteveen and Boelens (2006) to question the usefulness of the analytic distinction between categorical and concrete rights set up by the Benda-Beckmanns. They concluded it was not enough to grasp the materialization and distinctiveness of water rights. Instead, they proposed three distinctive categories: reference, activated, and materialized rights. Reference rights, often known as 'rights on paper,' derive from broader notions of fairness and justice as well as draw upon national regulations. They define the characteristics of the right-holder and the entitlements he enjoys. Activated or 'rights in action' denotes "the process of transforming reference rights into operational rules and procedures for water distribution" and for participating in the decision-making processes of the water user associations (Zwarteveen and Boelens 2006, 7). Finally, materialized rights:

> [R]efer to actual water use and distribution practices, and to actual decision-making processes about these practices. They refer to operational rules and arrangements among users that emerge when an irrigation system is used. Materialized rights are often not written down, nor even made very explicit. These rights are normally 'authorized by routine', 'unspoken informal agreements', or 'privileges conquered by everyday negotiation and struggle' (Boelens 2008, 74; see Zwarteveen and Boelens 2006, 7-8; Roth, Boelens, and Zwarteveen 2015, 463).

This analytical specification would allow us to trace the evolution of water rights from their abstract formulation through their transformation into operational rules to their eventual social embodiment. However, the legal-anthropological endeavor requires an analysis of the creation and recreation of those materialized rights in the context of the configuration and reproduction of local (customary) water law. It is not enough to attribute their origin and validity to *routine*, *custom*, *informal agreements,* or *privilege*. To paraphrase the legal anthropologist Sally F. Moore (1978), we cannot assume that materialized rights appear "like mists from a marsh"[33] to explain the social life of water rights.

Contractual character of water rights

Seemingly, the idea that water rights are commensurate to landed rights (i.e. terrestrial) and that they behave like *normal private property rights* supports the claim that they can be concretized or materialized. However, the FMIS bargaining and negotiation process reshapes the state, local, or customary repertoires of water rights to the point of non-recognition. As Boelens and Vos (2014, 57; italics added) point out, "in-house and outwardly, under circumstances of water conflict, cooperation and negotiation, water user collectives reinvent and *experiment with their rights definitions and system operation codes*." This is precisely why "the definition and contents of 'water rights' differ from system to system" (Boelens 2021, 429; see Boelens and Vos 2014, 56).[34]

Is it possible, then, to keep talking about water rights when referring to these whirlwinds and differentiated processes of negotiated water allocation? It seems the concept requires some clarification, particularly when we focus on their concretization or materialization. Two points are worth noting here. One regards the difference between rules and principles; the other is the orientating character of (legal) rules or normative commands, no matter their source of legitimation (e.g. state, customary, or local).

Here, we once again have to rely on the von Benda-Beckmanns' contribution to the study of lawscapes in FMIS. As they rightly observed, "increasingly it is not so much the historical origin that counts, but rather the fact that people perceive regulations as belonging to them and based on local authority structures, rather than on external legitimate authority." In these contexts, "their 'local laws' often are hybrid legal forms that combine elements of state and customary legal rules and principles" (Benda-Beckmann, Benda-Beckmann, and Pradhan 2000, 11; Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 89). These hybrid legal forms – rules and principles – coalesce in the "normative water allocation system" (Boelens and Vos 2014, 56; Boelens 2021, 431).

Applying Ronald Dworkin's classic differentiation between rules and principles, the von Benda-Beckmanns and their colleagues concluded that "many elements of water law and water rights have the character of principles rather than rules (see Dworkin 1977)" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 80; see Benda-Beckmann et al. 1997a, 7). For this legal philosopher, rules either apply or they do not – it is an all-or-nothing proposition. Principles, on the other hand, are standards that might "conflict and interact with one another" (Dworkin 1977, 71).

They operate as reasons that have different degrees of *weight* according to the case at hand and the interplay with other principles. They do not provide particular solutions, just a reason to argue in favor of a given solution (Dworkin 1977, 14-80). According to this view, rules are not devised "for implementing a fine-tuned program" of water distribution; it is "notional principles that set the parameters for discourse and negotiation among the parties involved" (Coward 1990, 83). This insight has a liberating effect on the characterization of local normative frameworks and of water rights as concretized principles in specific ecological and socio-political contexts (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 80).

Using Dworkin's ideas, these authors argued that the "repertoire of accepted justifications and options for possible arrangements" in water allocation made principles "subject to contention and negotiation" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1997, 225). The reasons for deciding on the volume to distribute, the number of turns allotted, or the distribution of night turns "all have the character of principles rather than rules" (Benda-Beckmann and Benda-Beckmann 2000, 24). Principles such as first users have priority over newcomers,[35] new intakes cannot reduce the incoming flow of older ones, or the sequence to follow (from head to tail or vice versa) also form part of the usual milieu of principles that have to be sorted out in everyday practices of water allocation (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 80; Benda-Beckmann, Spiertz, and Benda-Beckmann 1997, 232-234).[36] In this way, water rights operate more akin to socially embodied principles than as enacted rules.

The other point in need of clarification is the binding or referential character of rules or normative commands. Contrary to the commonsensical idea that rules govern behavior, social reality is not deducible from the normative and institutional framework in place (Spiertz 2000, 165). For the von Benda-Beckmanns and Spiertz, particularly in contexts of legal pluralism, "the mere existence of legal rules and principles […] does not justify to draw direct conclusions with respect to the behaviour of people" (1996, 85; see Benda-Beckmann and Benda-Beckmann 1998, 54; Benda-Beckmann et al. 1997a, 2; Benda-Beckmann and Benda-Beckmann 2001, 1). These rules become socially and analytically significant only when water users and authorities "orient their behaviour towards these rules: when this orientation thus becomes one of the factors which influence their behaviour in matters of water management" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 85).

From an actor-oriented perspective, people are rule-users, not rule-determined creatures (Latour 2010). For this reason, "their actions cannot be depicted as rule-governed" but only oriented by bodies of law (Dupret 2007, 25). The philosophical explanation of this indeterminacy is known as the paradox of rule-binding:

> [N]o course of action could be determined by a rule because every course of action can be made out to accord with the rule. [If: AGG] everything can be made out to accord with the rule, then it can also be made out to conflict with it. And so there would be neither accord nor conflict here (Wittgenstein [1945] 1986, 81, paragraph 201).[37]

This paradox helps us understand the creative tension between the normative repertoire of local law and the highly negotiable social life of water rights.[38] There is a wide rift between sanctioned rules and principles, on the one hand, and the

fluid arrangements that finally transform water rights into actual flows for the irrigators, on the other (Coward 1990, 83). First, the most important elements of the normative framework are principles, which more often than not consist of contradictory standards that have to be negotiated for the water to flow. Second, water users do not blindly apply their local laws. On the contrary, the normative language of their legal repertoire is a source of arguments for claiming and adjudicating rights, for channeling their social relationships regarding water. As K. von Benda-Beckmann, H.L.J. Spiertz, and F. von Benda-Beckmann observed, "in order to justify their claims, either to defend existing rights, or to obtain new rights, people have a reservoir of legal rules and principles at their disposal. These include the existing negotiated order, in the form of the last agreement that was made" as well as state, customary, and religious norms and principles (1997, 242).

Once we take into consideration these two caveats – water rights as concretised principles and norms as orientation devices – the social life of water rights acquires new contours. To appreciate them we need an ethnographic method and sensibility to "follow the actors themselves" and "trace the associations" – the *vincula iuris* – that lead to the assemblage of water rights in the social fields of FMIS (Latour 2008, 257, 19; see Latour 2010, 142).[39] For this, we have to keep in mind that 'local law' is a complex and unstable plural legal order resulting from its hybrid normative framework that combines elements of state and customary rules and principles. This leads water users "to a strange combination of highly legalistic reasoning and a very pragmatic search for solutions" (Benda-Beckmann and Benda-Beckmann 2010, 173).[40]

To observe this process, we need to "remain on the surface of things," paying close attention to "the winding path of practice" (Latour 2010, 142, 266). Therefore, we need to transition from documenting rules, institutions, and rights, or dissecting local normative orderings on the basis of their parts (e.g. state, customary, indigenous),[41] to the detailed analysis of everyday contractual practices that shape local water law and materialize water rights. The task is to reach the "vanishing point of jurisprudence" (Reisman 1999, 15),[42] in this case of state and even local water law (e.g. laws, bylaws, customary practices, assembly agreements), to finally observe how water users reach agreements to make the resource flow.

The ceaseless negotiations that lead to contractual agreements over water rights should invite us to reconsider our views on state and local water law. As Pirie has noted, there is a danger of generalizing the features of modern legal systems, even in legal anthropology. We need to distinguish between legal and negotiated orders. Moreover, it is quite problematic to attribute "negotiated orders with the characteristics of law-centered models" (Pirie 2023, 3). Simon Roberts makes this point clear:

> Negotiated orders have their own rationalities: they involve a different orientation to the normative repertoire from those of state law; decision-making is through agreement, reached through cyclical processes of information exchange and learning, rather than the imposed order of a third party; different forms of trust are necessarily involved (Roberts 2005, 23).

In these cyclical processes of information exchange and learning, "rules may themselves be the object of negotiation and may sometimes be a resource to be managed advantageously" (Comaroff and Roberts 1981, 14). This is quite different

from rule or law-centered models, in which the decision-making orientation is supposedly based on the mechanical application of normative commands, not in its negotiation. Persuasively, Tamanaha (2021, 176-177) uses Max Weber's classic formulation to draw an interesting contrast between a "rule-oriented formal legal rationality" and an "outcome-oriented substantive legal rationality." For studying the latter from "an ethnographic and practice-based approach to water governance […] explicit or formalized knowledge, such as rules and norms, are of secondary importance" (Rap and van der Zaag 2019, 3).

In social worlds like those of the FMIS, water users "experience their world as one in which individuals [are: AGG] continually negotiating their relationships with others" (Collier 2002, 83). They are "more interested in negotiating relationships than in punishing offenders" (Collier 2002, 77). Conversely, their authorities are "less interested in enforcing rules than in helping disputants negotiate a relationship that would allow them to live in peace" and share resources like water (Collier 2002, 83-84). Paraphrasing Benda Beckmann et al. (1997b) and Benda-Beckmann, Spiertz and Benda-Beckmann (1997), the result is a permanently shifting and precarious negotiated order, not a legal one.

For this negotiated order to operate in FMIS, two factors are critical: first, the everyday allocation meetings at the water intakes of any given irrigation system; second, the role of the ditch tenders of each intake in presiding over the negotiations and allocating the agreed rights.

Depending on the needs of the crops, the availability of water, and their non-agricultural activities, irrigators tend to use water in periodical intervals, for example, every week or every two weeks. Beyond the rules established by state law or by the customary and local regulations inscribed in their bylaws and assembly agreements, it is within the context of the allocation meetings that take place periodically at each water intake that water rights are claimed, recognized, negotiated, and finally enacted (see previous section).

A water user may in fact decide against participating in those massive, time-consuming general assemblies of their associations and instead pay a fine for not taking part. But she or he better be on time for the much smaller allocation meetings at their respective water intake. Given the need "for frequent renegotiation of specific water rights, it becomes crucial for individual water users to be able to participate in such [meetings and: AGG] negotiations" (Benda-Beckmann and Benda-Beckmann 2000, 26). These meetings are the loci where the allocation of water rights takes place on a reciprocal give-and-take basis. Such a fluid process of water allocation led Vermillion to conclude that "at the level of interaction among 30 to 50 farmers, water distribution is more an art than a science" (Vermillion 2000, 79).

In this regard, Zwarteveen and Boelens are right in pointing out that control of irrigation by women "decreases the further one moves upstream from the farm inlet to the main intake of the irrigation system" (2006, 15; see Benda-Beckmann and Benda-Beckmann 2001, 2). Even though their presence is growing, women are still absent from the boards of national, regional, or even local water user organizations. But, "the view that women are 'excluded' from water management decision-making may well turn out to be ideological" because the evidence is obtained on "too limited

a notion of water management decision-making as taking place exclusively within the formal public decision-making realm" (Zwarteveen and Boelens 2006, 17). They mention that some women meet amongst themselves to settle their water turns. But they mainly claim their rights in the allocation meetings that take part at the intakes. And, in my experience, women assert their rights quite vocally in the fora that, in the end, really matter (Guevara Gil 2013, 261-282; Guevara Gil 2015).

During these small water intake gatherings, the canal operators play a leading role in the distribution of the water volume assigned to the intake, allotment of turns, and the settling of disputes among the farmers that share the intake. Their role is invisible at the national-level of water legislation and even hardly acknowledged at the level of the local water user associations. They are the low-ranked field operators of water management organizations, including FMIS. But their role is absolutely critical in the negotiations that end up in the concrete allocation of water flows. As van der Zaag and Rap (2012, 1-2) emphasize, the Mexican *canalero*, the North American ditch tender or commissioner, the Peruvian *sectorista* or *tomero*, the Spanish *regador*, the Sudanese *ghaffir*, the Indian *lascar* or *neerkatti*, the Indonesian *oeloe oeloe*, or the Australian *water bailiff* are the main actors in irrigation systems worldwide.[43]

These *canaleros* or *tomeros* are the ones who handle and put in motion the normative, infrastructural, and organizational dimensions of FMIS and irrigation systems in general (Rap and van der Zaag 2019; Zaag and Rap 2012). Their decision-making process is flexible and their decisions are casuistic. Waterkeepers are skillful negotiators. They face multiple demands from national and local authorities as well as from those normative frameworks, and they have to balance these with the water claims of their constituency. Finally, as we have seen, ditch tenders have to mediate between water users who usually demand the best turns, the longest hours, and the highest volume of the resource.

Their task is quite demanding. Only their deep knowledge of the water users, the fields to be irrigated, the stage of the crops, and the infrastructure allow them to allocate water in a satisfactory way or, at least, in a way that is least contentious. Canal operators are keenly aware of the social, political, and ecological embeddedness of the water rights they have to apportion. Moreover, as Rap and van der Zaag (2019) rightly point out, through their daily routines of administering water, *canaleros* or *tomeros* develop a situated and embodied knowledge to deal with the specific social, normative, ecological, and technical dimensions of water allocation.

Final remarks

It is in the humble and habitual gatherings presided over by ditch tenders that farmers decide how to regulate their water flows. This process reaches dizzying and bewildering proportions because it must respond to immediate, everyday demands. Unceasing trial-and-error, sinuous interpretations of normative commands, bylaws or general assembly agreements, or strategic deployments of social, political, and economic resources are all on the table when bargaining water rights at every water turn. In this vortex, state or local laws are frames of reference and not mechanically enforceable rules. They are only part of the mix of resources available for securing

actual water rights. Hence, the fluid social life of water rights in FMIS is best understood in terms of their contractual character.

In this regard, the contribution of Franz and Keebet von Benda-Beckmann, and their colleagues, to its legal anthropological study is paramount. Their role in outlining the three-dimensional approach (socio-legal, technical, organizational) to the study of water rights is quite significant. Also, their definition of water rights as an umbrella concept that encompasses a bundle of rights enacted in conditions of legal pluralism and under multiple contingencies is analytically sharp and sound. Thanks to them, the documentation of the social life of water rights in general, but particularly in FMIS, got a new lease on life when they introduced the distinction between categorical and concretized rights, as well as between rules and principles. Moreover, their remarks on the relational character of water rights resulting from their fluidity, shared use, and multifunctionality of the resource are illuminating. And their observation that the contentious concretization of water rights leads to *precarious negotiated orders* accurately stresses the ongoing weaving of the social fabric of waterscapes.

However, their work also presented some shortcomings, including comparing water rights to *normal private property rights*, falling back to the terrestrial imagination in their rendering of fixed concretized water rights, or proposing a dichotomy between categorical and concretized water rights that was later deemed insufficient for analyzing the social life of water law and rights. All in all, these limitations prevented them from advancing a more refined framework for an ethnographic understanding of the daily practices in FMIS.

But these inconsistencies in no way devalue their accomplishments in this and innumerable subjects of legal anthropology. They were original, rigorous, erudite deep thinkers. It is for these reasons that today we can firmly stand on their shoulders and continue the legal anthropological quest. They were undoubtedly giants.[44]

Notes

1. For a detailed list of their publications, see the bibliography to this article: see Turner (2015) and for Keebet von Benda-Beckmann, https://www.eth.mpg.de/3865580/publications_pure.
2. FAO, United Nations Food and Agriculture Organization; IWMI, International Water Management Institute; IFPRI, International Food Policy Research Institute.
3. They built upon earlier work on FMIS in Indonesia (Roth, Boelens, and Zwarteveen 2015, 458), e.g. Benda-Beckmann, Benda-Beckmann, and Spiertz (1996). However, Benda-Beckmann et al. (1997) offer a rich comparative ethnographic sample to support their claims.
4. Despite all the progress in the social sciences on water rights and management, even today "the 'iron trianglé of bureaucrats, politicians, and engineers" continues its hydraulic mission of promoting rational and efficient water management at the expense of grassroots communities' livelihoods (Boelens 2021, 428, 431, 435).
5. According to Coward, "one can view irrigation development as a property-creating process" that leads to "(1) the creation of new objects of property (weirs, canals, water rights, etc.) and (2) the possibility of new property relations" (2018, 502). See Boelens and Vos (2014).
6. According to Benda-Beckmann, Benda-Beckmann, and Spiertz (1996, 81, footnote 9), Henry Sumner Maine (*Ancient Law*, 1861) was the first to use the bundle of rights metaphor. Legal anthropologists have been using it for the study of institutions such

as ownership or marriage (Benda-Beckmann, Benda-Beckmann, and Wiber 2006, 15 et seq., 32, endnote 16).

7. As Ostrom and Schlager stressed, "systems of property rights and rules defined, implemented, monitored, and enforced by resource users themselves are likely to perform better than systems of property rights and rules defined, implemented, monitored, and enforced by an external authority" (1996, 145; see Benda-Beckmann, Spiertz, and Benda-Beckmann 1997, 225).
8. In their assessment of the impact of Franz von Benda-Beckmanns' work in the field of water rights, Roth, Boelens, and Zwarteveen (2015, 471, endnote 2) also stress this collaborative effort. As the list of references shows, the von Benda-Beckmanns developed their most important contributions together, along with colleagues like H.L.J. Spiertz and Rajendra Pradhan.
9. As F. von Benda-Beckmann noticed, Clifford Geertz remarked that while "the problematic relationship between rubrics emerging from one culture and practices met in another has been recognized neither as avoidable nor fatal in connection with 'religion', 'family', 'government', 'art' and even 'science', it remains oddly obstructive in the case of 'law' (1983, 168)" (2002, 44, footnote 10).
10. As they conclude, "It may be difficult to distance oneself completely from ethnocentric understandings of certain terms, but it would be strange if a semantic determinism prevented anthropologists and other scholars from clarifying their concepts to reduce specific ideological content" (Benda-Beckmann, Benda-Beckmann, and Wiber 2006, 14; see 32, endnote 14).
11. Maine ([1861] 1986, 141).
12. Bronislaw Malinowski launched an early manifesto against the notion that "the savage has a deep reverence for tradition and custom, an automatic submission to their biddings." In his view, "savage society," much like modern society, is also organized on the basis of a system of exchanges and reciprocal obligations (1926, 10).
13. It is worth acknowledging that even in the heydays of structural-functionalism, ethnographers like Leopold Pospisil were depicting that in "tribal societies […] the individual is relatively free and is able to create for himself rights and duties through quite an impressive inventory of different types of contracts" (1974, 150). His ethnography on the contractual life in New Guinea was published in 1963 (see 313 et seq.).
14. Anyone who has bought an air ticket and experienced flight problems knows that contractual relations are hardly fair.
15. According to Shukla et al. (1997), the resource captured by a water user association is apportioned into individual claims and, in defining each "individual's claim the irrigators come to a set of agreements that creates a social contract for irrigators to realize their claims and acknowledge the claims of others" (Shukla et al. 1997, 173-174). These are widely different because "irrigators develop and enforce differential sets of agreements to define the collective and individual claims depending upon the flow regimes at the source and within the system" (Shukla et al. 1997, 174).
16. The Benda-Beckmanns caution us on the problem of defining the external aspect of water user associations as corporate ownership: "The interpretation of local property rights as communal, implicitly on the basis of European legal notions of ownership obscures individual rights in local societies" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 82; see Benda-Beckmann, Benda-Beckmann, and Wiber 2006, 12-13).
17. In Benda-Beckmann, Benda-Beckmann, and Spiertz (1997), they make very similar claims. Unless stated otherwise, I will only quote their (1996) article.
18. In modern states the distinction between the public and private is sharp. But even "in societies with less hierarchical political organizations […] aspects of socio-political authority and use and exploitation […] usually are distinguished" (Benda-Beckmann, Benda-Beckmann, and Spiertz 1996, 81; Benda-Beckmann, Benda-Beckmann, and Pradhan 2000, 4-5).
19. Their 2000 contribution is based on Benda-Beckmann and Benda-Beckmann (1998).

20. For example, in Benda-Beckmann, Benda-Beckmann, and Spiertz (1997, 224), they quote Schlager and Ostrom (1992). Also, in Benda-Beckmann, Benda-Beckmann, and Pradhan (2000, 19, footnote 7).
21. As the Franz and Keebet von Benda-Beckmann pointed out, water rights and duties are "embedded within multiplex relationships" (economic, social, political, ideological, legal). A legal anthropological analysis should consider that they are also embedded "as abstract types of relationships" that condition their interpretive and pragmatic substantiation (2010, 174).
22. The earlier distinction between abstract rules and actual rights proposed by Keebet von Benda-Beckmann was also based on her observations regarding the differentiated role of women in natural resource management, particularly water (Benda-Beckmann et al. 1997a, 5-6).
23. In Benda-Beckmann and Benda-Beckmann (2006) they explain these ideas alike. Unless stated otherwise, I will only use their (2000) contribution.
24. Similarly, Cardoso and Pacheco-Pizarro (2022, 138) refer to hybridized water rights that include customs, principles, state regulations, and human rights.
25. "Water is inherently multi-functional, and its allocation and use relational" (Benda-Beckmann and Benda-Beckmann 2003, 65).
26. Wittfogel (1957, 15) made a similar observation: "Flowing automatically, water appears unevenly in the landscape, gathering either below the surface as groundwater, or above the surface in separate cavities (holes, ponds, lakes), or continuous beds (streams, rivers).".
27. "For water is a moveable wandering thing, and must of necessity continue common by the law of nature; so that I can only have a temporary, transient, usufructuary, property therein wherefore, if a body of water runs out of my pond into another man's, I have no right to reclaim it" (Blackstone [1765-1769] *in* Getzler 2006, 173-174).
28. On the importance of metaphors for structuring our experience of the world, see the classic work of Lakoff and Johnson on metaphorical rationalities (Lakoff and Johnson 1980).
29. It was extremely important for the colonial reconfiguration of the world and the imposition of a worldview grounded on land rights. For example, in Sri Lanka (former Ceylon) "land tenure, as the British authorities understood it, necessarily consisted of rights to a particular piece of land rather than rights to a particular quantity of water. Consequently, all *land* not actually under cultivation at the time of the survey was treated as Crown property. But it is the emphasis on rights in *water*, as opposed to rights in *land*, which explains the many peculiarities of the traditional system" (Leach 1961, 156; italics in the original). This explains why, at the village level "property land is worthless unless it is linked with rights to draw water to irrigate the land" (Leach 1961, 232).
30. Benda-Beckmann, Spiertz, and Benda-Beckmann (1997, 234).
31. Water turns that "during the chilly Andean nights, can be deadly" (Gelles 2000, 51).
32. On the allotment of nighttime and early morning water turns to indigenous peoples since colonial times, see Domínguez (1988, 131, 135).
33. To explain the evolution of law, some scholars assume that while "in traditional society custom somehow arose from the opinions and practices of 'the people' like mists from a marsh," modern law is the result of deliberation, reflection, and rationality by a specialized bureaucracy. In this way, "the 'deliberateness' of legislation implies by contrast the spontaneity and unthinkingness of habit attached to custom" (Moore 1978, 4, 14-15).
34. Referring to water, Wittfogel also stated early on that "property rights in different societies, even when they are similar in form, need not be similar in substance" (1957, 228).
35. For the complex relations between senior and junior water users when scattered along an irrigation system, see Schlager (2006, 299). On irrigation turns based on the Inca dual principle of social organization (*Hanan/Urin*), see Gelles (2000).

36. In a similar way, Lon Fuller concluded that "in actual practice, over the world and through history, the most diverse rules [i.e., principles: AGG] have been applied to the allocation of irrigation waters. These rules express every conceivable standard of distributive justice: First come, first served; to each according to his contribution; to each according to his needs; to each according to the needs of society; to each according to the luck of the throw" (Fuller 1965, 1039).
37. As Bruno Latour pointed out, "nothing proves that the notion of a rule is applicable to humans. Wittgenstein showed this a long time ago: one can never say of a human action that it 'obeys', that it 'follows', or 'applies' a rule: one can only say that it refers to it" (2010, 269).
38. Based on Comaroff and Roberts fascinating question: "What explains the dualism in the Tswana conception of their world, according to which social life is described as rule-governed yet highly negotiable, normatively regulated yet pragmatically individualistic?" (1981, 215; see Benda-Beckmann and von Benda-Beckmann 2010).
39. Following Latour, "what we loosely call 'the social' is rather the result of what has been produced by types of connection ('associations') that are established by scientific, religious, political, technological, economical, or legal connectors" (2010, viii).
40. "In the process, they create ambivalent and opportunistic ways to negotiate property [or water: AGG] relations and to justify their interpretations of actual conditions, claims and solutions in legal terms" (Benda-Beckmann and Benda-Beckmann 2010, 173).
41. In agreement with the von Benda-Beckmanns' characterization of local law, Boelens, Roth, and Zwarteveen rightly observe: "a focus on function rather than on form and typology makes the a priori distinction between state and nonstate forms of normative ordering rather pointless" (Boelens, Roth, and Zwarteveen 2005, 6).
42. Local law and local water rights "may be near 'the vanishing point of jurisprudence' [or Social Science observation because of their: AGG] low visibility," which produces a "disdainful rejection by scholars of the law" and by rule-centered researchers (Reisman 1999, 15, quoting Sir Thomas Holland [1880]).
43. On the *sectoristas* of the irrigation systems on the Peruvian coast, see Vos (2002). On the role of highland *tomeros* in Peru, Guevara Gil (2013, 243-282; Guevara Gil 2015). On the Pani Thekdar and Pani Chowkidar (water contractors and guards) in Nepal, see Durga and Pradhan (1997, 137). On the Vel Vidāne, the irrigation headman in Pul Eliya (Sri Lanka, former Ceylon), see Leach (1961, 160).
44. "If I have seen further it is by standing on the shoulders of Giants," Sir Isaac Newton, letter to Robert Hooke (1675).

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