

Background Paper on Water Tenure and Food Security

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Key Messages

- 1. The water tenure concept recognizes all existing water allocation mechanisms. It does not only include water rights based on legally recognized land and forest rights but also considers customary rights not defined in formal law.**
- 2. Customary tenure arrangements for accessing and using water resources can be recognized as legitimate use rights.**
- 3. Recognition and protection of various water tenure rights under formal law improves food security and empowers communities to participate in decision-making.**
- 4. Secure water tenure is a prerequisite for investments in construction, rehabilitation, and efficient operation of water infrastructure for food production.**

Water Tenure and Food Security

How are water tenure and food security connected?

Water is intrinsically linked with the livelihoods and food security of all human beings. **Irrigated farming represents about 20 percent of the total cultivated land and contributes 40 percent of the total food produced worldwide** (FAO, 2021). Rural communities in particular depend on water resources for various purposes – most importantly subsistence food production, particularly in areas of limited rainfall. Irrigation allows farming communities to increase their resilience against rainfall variability and to diversify the foods grown on their land.

Furthermore, **water resources are essential for watering livestock**. Approximately 10 percent of the annual global water flows are used for the livestock sector (Deutsch et al. 2010). For instance, in Burkina Faso, Mali and Niger in the Sahel, the livestock sector accounts for about a quarter of the GDP of all three countries (FAO, 2022a), illustrating the crucial importance of reliable access to water resources for pastoralist communities. Livestock also provides important inputs to crop production as many farmers use the animal manure to fertilize their crops, which again produce food for humans and livestock alike. From a food security perspective, keeping livestock also provides an important safety net for pastoralists. In times of drought people can move their livestock to other, more water-secure areas and still maintain a source of food and income.

Overall, **food security on different scales, from local to global, depends on the accessibility of water resources**. However, in many parts of the world local communities have no secure access to water sources to sustain their food production. 77 percent of smallholder farms in low and middle-income countries are located in water scarce regions, but less than a third have access to irrigation (FAO, 2021). Similarly, accessing water for pastoralists is increasingly challenging and a source of a growing number of local disputes. Globally, the number of people raising livestock in (agro)pastoral systems exceeds 180 million (Kieta et al., 2016). 65 percent of meat, and 70 percent of milk offered on local markets in the Sahel region stems from pastoral systems (FAO, 2011b).

One underlying problem for ensuring secure access to water resources is the fact that in many countries, **access to and use of water resources is governed by customary arrangements that are often not recognized by formal water governance structures**. In the southern states of India, for instance, most local communities manage their resources under customary water tenure arrangements, as formal state law and its execution do not sufficiently organize the sustainable use of groundwaters and surface water for rural communities. In the state of Maharashtra, watering of livestock is organized by customary practice and water users can take water from village ponds that are exclusively used for livestock. There is no charge for watering or feeding livestock (on private land). For the irrigation of crops, water is shared with family members and people from the same caste. While these customary arrangements determine livelihoods and food security for local farmers based on locally established village structures, they are not recognized by formal state law (James et al., 2014) These farmers have weak or insecure water rights and are at risk of losing their means to secure food for themselves and their families.

Another case study from South Africa illustrates the linkage between access to water and livelihoods. In the Pongola River in the state of Kwazulu-Natal, local communities in the past used water and connected aquatic resources based on customary practices. The communities were highly dependent on the natural flooding regime of the river and exploited many of its benefits for livelihood purposes, including fishing and livestock grazing. Traditional authorities enforced these customary rights of communities to use the water in the floodplain and adjacent land. However, as these customary water uses were not recognized by formal law, local communities were not consulted when a major dam was constructed during the 1960s and 70s. Since its construction, flood releases have become sporadic and unpredictable, and customary uses of the aquatic ecosystems downstream for subsistence agriculture have been lost (Crafford et al., 2014). As this case illustrates, where laws do not formally recognize

customary water rights of local populations, these rights are at risk of being ignored, putting at risk their livelihood and food security.

A key challenge to sustain and improve water and food security for rural populations, particularly in areas affected by water scarcity, therefore **is how customary arrangements for accessing and using water resources can be recognized as legitimate use rights and included in broader water governance frameworks.**

What is water tenure?

Water tenure can be defined as “the relationship, whether legally or customarily defined, between people, as individuals or groups, with respect to water resources” (Hodgson 2016; FAO 2020). The advantage of this relatively new concept is that it considers all types of water uses, including those that are not formally recognized by law. **At the center of most water tenure systems is a core group, or bundle of rights** that constitute the fundamental elements of peoples’ relationship with their water resources and with each other in relation to freshwater resources. For example, tenure holders can have rights to access, impound, use, and manage water, as well as “procedural” rights to have access to information and participate in decisions pertaining to their water resources. The rights that are held by any one individual or group can vary, resulting in different “bundles of rights” that are created and protected by legislative and customary frameworks which may or may not be aligned. The ways in which various rights within the bundle are assigned, who the rights holders are and how the rights are implemented and enforced shapes both the quality and security of water tenure regimes. While the bundle-of-rights approach to tenure was initially developed to apply to terrestrial resources, it can be tailored to apply in the freshwater context.

Water tenure offers a nuanced framework for recognizing the diverse kinds of formal water tenure relationships as well as those derived from customary and local practices. Another key benefit of thinking in terms of water tenure is that it focuses on water users. The relationship between water users and the way they access and use the water is the main focus of water tenure. Because water tenure concentrates on users as opposed to laws and policies that are imposed from the top, a water tenure approach is by nature bottom-up (Hodgson 2016). Looking at the example from South Africa, it is evident that the dam was built upstream without considering customary water tenure arrangements by users downstream. A tenure approach could have encouraged a broader understanding of the ecosystem services and connected livelihood benefits provided by the river’s floodplain to downstream communities.

One can broadly distinguish between two types of tenure, legally defined water tenure and customary tenure. **Water tenure defined by formal law** often include permit-based rights for using surface and groundwater resources. They constitute property rights (or quasi-property rights) which enable the rights-holder to exclude other third parties from using these resources. Formal arrangements on water rights are signed, for example, between individuals and Water User Organizations (WUOs). In these cases, rural farmers receive their water from irrigation agencies but handled through WUOs (Hodgson, 2016). In many countries some small-scale domestic activities, so called “*de minimis* uses” allow the abstraction of small quantities of water for livestock or drinking water. They are listed under formal law arrangements but do not require a regulatory license.

Customary and religious water tenure rights on the other side include the rights to abstract and use water based on customary practices or religious teaching. In many places, customary or local law remains the dominant legal paradigm for water tenure. These customary water tenure arrangements vary significantly in form and scope. Often, they emphasize the rights of groups and communities rather than individuals (which is common for formal water tenure) and are frequently part of complex frameworks that regulate access to other natural resources. In cases where formal law does not acknowledge or protect these customary tenure rights, they do not provide formal security to water users, making them vulnerable for possible risks of sanctions and sudden prohibition of use (Hodgson, 2016).

How are water tenure rights and land rights connected?

Water tenure rights are also often linked to land and forest rights. In many countries, formal water use rights have traditionally been granted to the legal owners of land which can freely use surface and groundwater resources on their land. In Maharashtra state, India, accessing groundwater resources used to be connected to land ownership. Hence, landowners could extract groundwater resources

without any limitation – such as by acquiring a water permit. This arrangement led to an overexploitation of groundwater resources, often used extensively for agricultural irrigation. Even though the regulation was revised in 1993, it still endorsed the right of landowners to extract groundwater below their plots, manifesting the concept of private control of groundwater. A new Water Act that was passed in 2005 intends to review water projects and to define priorities of water allocation during water scarcity. However, many communities in Maharashtra continue to distribute their water for irrigation or other livelihoods based on customary rules (James et al., 2014).

As **land-based water rights are increasingly considered unsuitable for managing water resources**, most countries have now placed water resources in the public domain and provide for the use of such resources on the basis of permits that grant use rights that are independent from land tenure rights. In Indonesia, for instance, formal water use rights are not based on land permits, but on water licenses granted by the state. The National Water Resource Law distinguishes between two types of water licensing, one for non-commercial and one for commercial water uses. Water used for basic daily needs and for agricultural uses are exempt, provided they do not alter the natural condition of a water source and agricultural use happens within existing irrigation areas. (Al’Afghani, 2022).

Similarly, in Rwanda formal law does not recognize traditional water tenure arrangements. Land and water rights are strictly separated in the sense that private land that includes lakes, rivers, springs or wells are part of the public domain of state. Thus, landowners cannot claim a right to the use of water resources on their land, even when the access would be granted under customary law (FAO, 2022c).

However, even where countries’ water laws do not link water permitting to land, they often require a linkage between agricultural lands and permitting for irrigation, whether through Water User Organizations in irrigation schemes (commonhold water tenure) or even for communities.

Why is it important to recognize water tenure rights for food production?

With increasing risks due to water scarcity and climate change, secure, equitable and enforceable water tenure rights become increasingly important for food security. Secure water tenure arrangements can contribute to food security in different ways: Most importantly, securely defined and **acknowledged water rights provide important incentives for farmers to invest in water infrastructure**, such as water storage or irrigation infrastructure as they do not have to fear losing access to water for the next growing cycle. These investments in turn increase crop yields and varieties of foods that can be grown. Additionally, irrigation and other infrastructure enhancements, improve communities’ possibilities to ensure food production also during drought events.

Furthermore, with higher crop yields and more reliable access to water, rural communities can save work in crop production and invest their time in other activities such as education or other income-generating activities.

Clearly defined and secure water tenure arrangements also play a role in **preventing conflicts over water allocation** among different upstream and downstream users and those from different sectors such as between sedentary farmers and pastoralists.

In many countries, the use of small quantities of water for personal use (such as hygiene, cooking, or home gardening), so called “de minimis” rights, are exempted from permitting. Often de minimis uses are restricted to manual abstraction, whereas motorized abstraction, e.g. with pumps, requires a permit or license. However, the legal protection and security of de minimis rights holders may be low as compared to holders of water permits. A case can be made to expand the de minimis uses to other livelihood uses, such as small scale irrigation. In Rwanda, for example, the most recent guidelines for water permits prepared by the Rwanda Water Resources Board exempt farmers from permitting if they irrigate 1 ha or less. (FAO, 2022c).

Finally, recognition and protection of customary water tenure rights under formal law **empowers communities, especially often marginalized community members, to participate in decision-making frameworks** and increases their power vis a vis other, often more powerful, actors. Their

interests and views are then more likely to shape political decisions, including those that are relevant to secure food productions and livelihoods.

The impacts of water tenure rights on agricultural investments

Secure water tenure is a prerequisite for investments in construction, rehabilitation, and efficient operation of water infrastructure for food production, including irrigation schemes and other water storage and supply facilities. In many countries of the global south, foreign investment in large-scale agricultural projects plays an important role to secure food production for a growing world population. Investments in new and more efficient irrigation infrastructures is necessary to secure the availability of groundwater and surface water resources for current and future food production (FAO, 2011a; FAO, 2022c).

For foreign investors, investment contracts can be protected under international law – generating a secure tenure relationship. Over the last years, especially in Africa, concession agreements with foreign investors have increased (Cotula, 2011). Those agreements often confer water rights to the investors and specify volumes of water that can be extracted. Such investment contracts, however, can easily disenfranchise local water users, in particular when customary water arrangements have no or only weak legal security – see above. While international law provides some protection against the dispossession of local people from their lands, these rights primarily refer to land and not to water resources (Hodgson, 2016). Investments contracts are normally not open for discussion with society and can, consequently, result in water allocation practices that do not consider the rights of local communities. This is for instance the case in the Indian state Maharashtra where the federal state has favored the industrial use of water for mining over irrigation for crops and watering livestock. Hence, the extensive use of water for coal mining threatens rural communities' use of groundwater for food production and jeopardizes the sustainability of groundwater resources (James et al., 2014).

In conclusion, considering all legitimate water tenure rights within a country and recognizing these rights – hence taking a water tenure perspective – can significantly improve food security and hence also support achieving the relevant global development goals.

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