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Evolving property rights in water and their impact on water allocation and reallocation

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Chapter 5

Water property rights through water use permits, affects water allocation and reallocation: An empirical assessment of 60 countries in Africa and Asia

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5.1 Introduction

In recent decades, the gap between the demand for and supply of water and climate variability and change have made states conscious of the urgency of improving water allocation systems. Countries worldwide have reformed their water law, and the previous chapter has shown that states use permits as the main instrument to allocate water. However, there is little systematic comparative analysis of laws on property rights in water and the role of permits in them, especially in the Global South. Hence, this chapter addresses the question: How have property rights in water evolved including through granting water use permits in Anglophone and Francophone Africa and Asia, and what are the implications for water allocation and water reallocation? Permits are water allocations or entitlements granted by the state subject to specific conditions and are grounded in national laws. This chapter addresses the gaps in knowledge, by analysing the *de facto* development of ‘property’ rights in water through permits (to address knowledge gap 1), how this affects water allocation and the reallocation (to address knowledge gap 2), focussing specifically on the Global South – Africa and Asia.

This chapter consist of two main parts, (1) an analysis of the extent to which these water use permits may exhibit quasi-property rights, and (2) an assessment of the policy in place regarding the governing of the granted permits. Most countries considered in the analysis have put water in the public domain (see 4.2), and state governments have been mandated to govern the water resources for the benefit/interest of the people. Since water use permits are the main instrument through which states allocate water, I looked at these permits in more detail. As far as the access and allocation of freshwater resources is concerned, 47 states allocate water through a permit system by granting individual water use licences (see 4.3.4).

The chapter will first discuss the permits in more detail by examining the 13 ‘property’ like elements I was able to identify, clustered into five issues indicating quasi-property rights (see 5.2.1 – 5.2.5). Second, I discuss what policies are in place that allow states to govern the granted water use permits, including: the cancelling of permits (see 5.3.1), the amendment of permits (see 5.3.2), the limiting (see 5.3.3), and suspending of permits (see 5.3.4). This is followed by discussing more specific policy systems that allow for the reallocation of water, including: the review and re-application of permits (see 5.3.5 and 5.3.6), and declare an area that allows for state intervention – regulating the granted permits (see 5.3.7). Based on the analysis, inferences are drawn (see 5.4).

5.2 Dimensions and elements of Permits

Based on the qualitative content analysis method, used in an inductive way, and being guided by the extent to which the elements would add to guaranteeing and ensuring certainty and security of the water use right, I was able to identify 13 key property 'elements' of property that I clustered into five issues indicating quasi-property rights (see Table 5.1), including:

- (i) The temporal dimension: (i) the period for which the permit is valid; (ii) the possibility to renew permits; and (iii) the possibility to intermediately change permit conditions. The longer the permit period, the longer the rights are allocated, the more it resembles real property.
- (ii) Dispute resolution: the possibility (i) to object and (ii) appeal against a state's decision; or (iii) to settle disputes when permit holders' interests are violated, and (iv) the possibility to sue the state. If you can go to court to claim that your permit has been violated, this resembles a property right.
- (iii) Compensation: (i) compensation by the state if a permit is withdrawn; (ii) whether a permit applicant has to compensate the permit holder that beneficially used the water from whom the water is reallocated; and (iii) the possibility to be compensated for any (financial) loss suffered in case of damage. If you can demand damages for the withdrawal or suspension of a permit, the rights in the permit resemble a property right.
- (iv) The protection of interests: whether organizations or individuals' interest are protected by the state. If your permit related interests are protected by the state, the right resembles a property right.
- (v) Alienation: (i) the possibility to transfer the permit; and (ii) whether the permit is granted appurtenant to land or industrial undertaking. If you can sell your water rights, this resembles a property right.

Below I discuss the results of the analysis.

5.2.1 Temporal dimension

Generally property rights can be permanent or temporary. The longer the period for which temporary property rights are granted, the more it resembles real property. Thus the temporal dimension is key in the creation of quasi-property rights in water and consists of two elements: (i) the period for which a permit is granted, and (ii) the period by which the permit can be renewed or extended.

Table 5.1 Allocation of quasi-property rights through permits.

Quasi-property right	Temporal		Alienation		Compensation			Dispute resolution			State protection	
	Temporal	Change conditions	Alienation	Permit appurtenant to	Compensation by state	Compensation by applicant	Compensation damage/dispute	Object	Appeal	Dispute settlement		Sue
Botswana	✓	✓	✓	✓	✓			✓	✓			✓
Eritrea	✓	✓	✓		✓				✓		✓	
Eswatini	✓	✓	✓	✓	✓		✓	✓	✓	✓		
Ethiopia	✓	✓	✓	✓	✓		✓	✓	✓	✓		
Ghana		✓	✓		✓			✓	✓			✓
Kenya	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
Lesotho	✓	✓	✓							✓		
Malawi	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Namibia	✓	✓	✓				✓	✓	✓	✓		
Nigeria		✓										
Sierra Leone	✓	✓						✓	✓		✓	
South Africa	✓	✓	✓	✓	✓		✓	✓	✓	✓		
Tanzania	✓	✓	✓	✓	✓		✓	✓	✓		✓	
Uganda	✓	✓	✓	✓			✓	✓	✓			✓
Zambia	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Zimbabwe	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓

Quasi-property right	Temporal		Alienation		Compensation		Dispute resolution		State protection			
	Temporal	Renew conditions	Change conditions	Alienation	Permit appurtenant to	Compensation by state	Compensation by applicant	Compensation damage/dispute		Object Appeal	Dispute settlement	Sue
Algeria				✓	✓	✓						
Benin	✓											✓
Burkina Faso												
Burundi	✓			✓		✓		✓				
Cameroon	✓	✓				✓				✓		
CAR	✓			✓		✓		✓				
Chad	✓	✓	✓	✓	✓	✓				✓		
Congo						✓						
Côte D'Ivoire	✓	✓	✓			✓		✓				
Djibouti	✓	✓		✓	✓	✓		✓			✓	
DRC				✓								
Guinea		✓	✓	✓		✓						
Mali	✓					✓						
Mauritania				✓								
Morocco	✓	✓		✓	✓	✓						

Quasi-property right	Temporal		Alienation		Compensation		Dispute resolution		State protection				
	Temporal	Renew conditions	Change conditions	Alienation	Permit appurtenant to	Compensation by state	Compensation by applicant	Compensation damage/dispute		Object	Appeal	Dispute settlement	Sue
Niger	✓			✓	✓	✓	✓	✓					
Rwanda		✓		✓									
Senegal	✓	✓	✓	✓	✓	✓					✓		
Togo	✓			✓		✓		✓					
Armenia	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
Bhutan	✓									✓	✓		✓
Cambodia	✓	✓		✓		✓		✓		✓			✓
Georgia	✓	✓	✓	✓	✓		✓	✓		✓		✓	✓
Indonesia						✓					✓	✓	
Kyrgyzstan	✓	✓	✓	✓	✓	✓				✓	✓		✓
Malaysia	✓					✓				✓		✓	
Mongolia	✓	✓											✓
Nepal	✓			✓		✓		✓		✓	✓		
Philippines	✓		✓	✓		✓	✓	✓		✓	✓		✓
Tajikistan	✓	✓		✓		✓		✓		✓	✓		✓
Vietnam	✓	✓	✓	✓		✓		✓		✓	✓	✓	✓

Source: Author

Water use permits allow a holder to use water for a specified period to guarantee reliability of supply, subject to hydrological changes. Permits cover from 5,¹³⁵ 10,¹³⁶ 15,¹³⁷ 20,¹³⁸ 25,¹³⁹ 40,¹⁴⁰ and up to 75¹⁴¹ years. In five countries, permit holders can use water for an unspecified period: an indefinite period;¹⁴² permanently;¹⁴³ in perpetuity;¹⁴⁴ as long as water is beneficially used;¹⁴⁵ and sometimes no term is specified as in the case of a farm use permit.¹⁴⁶ Some water laws have no maximum limit, stating that the permit will specify the licence period.¹⁴⁷

This period can be renewed or extended on the request of the permit holder. Some water laws allow holders to request the responsible authority to amend or renew the permit conditions. All Anglophone African countries, half of the Francophone African countries, and most Asian countries allow for permit renewal, mostly through an application¹⁴⁸ subject to certain conditions. Some laws state that a renewal shall not be declined without a good reason.¹⁴⁹ Others state that a permit shall be renewed if the terms, conditions and obligations have been upheld and the renewal does not contravene the law.¹⁵⁰ In South Africa, permits are renewed in a general review process.

In 19 out of 47 countries, permit holders can request a permit amendment.¹⁵¹ In a few countries, any permit condition can be amended.¹⁵² In other countries, the law specifies the conditions that cannot be amended¹⁵³ or states that only the water volume can be modified.¹⁵⁴ Such amendments follow a request or reapplication to the responsible

¹³⁵ Cameroon, Eswatini, Lesotho, Namibia.

¹³⁶ Eritrea, Mongolia, Morocco.

¹³⁷ Kyrgyzstan, 50 years for an irrigation system.

¹³⁸ Georgia, Vietnam.

¹³⁹ Zambia, Zimbabwe.

¹⁴⁰ Armenia, South Africa.

¹⁴¹ Cambodia, Djibouti.

¹⁴² Botswana.

¹⁴³ Tajikistan allows for both permanent and temporary use (from 3 up to 25 years).

¹⁴⁴ Bhutan.

¹⁴⁵ Philippines.

¹⁴⁶ Georgia.

¹⁴⁷ Benin, Burundi, CAR, Chad, Côte d'Ivoire, Ethiopia, Kenya, Malawi, Malaysia, Mali, Nepal, Niger, Senegal, Sierra Leone, Tanzania, Togo, Uganda.

¹⁴⁸ Cameroon, Chad, Djibouti, Eswatini, Georgia, Guinea, Malawi, Namibia, Zambia.

¹⁴⁹ Eswatini, Namibia.

¹⁵⁰ Armenia, Ethiopia, Zambia.

¹⁵¹ Armenia, Botswana, Chad, Côte d'Ivoire, Eritrea, Eswatini, Ethiopia, Georgia, Guinea, Kenya, Kyrgyzstan, Malawi, Philippines, Senegal, South Africa, Uganda, Vietnam, Zambia, Zimbabwe.

¹⁵² Botswana, Malawi, Kenya, Uganda, Zambia.

¹⁵³ I.e. increase in the volume of water; Philippines.

¹⁵⁴ Ethiopia.

authority to amend the permit.¹⁵⁵ In most countries the amendment applies permanently, in others the permit conditions are changed for a certain period of time.¹⁵⁶ Amendments are subject to criteria, including that the modification of the permit does not impair the public interest, the rights of others¹⁵⁷ including other permittees,¹⁵⁸ or impacts public health.¹⁵⁹ Some states require a valid reason (e.g. changing conditions, greater water efficiency).¹⁶⁰

5.2.2 Dispute resolution

The 'strength' of quasi-property rights in water is determined by the protection and security permit holders enjoys – the ability to protect their water use right in case the state wants to take back the water. Dispute resolution refers to recourse to courts by entities seeking protection of their rights. Legal permits may be subject to legal action which includes the rights to object, appeal, sue and settle disputes in court when permit holder's interests are allegedly violated by the state. I identified dispute resolution as an element of quasi-property rights in water, because although the water allocation is an entitlement, the element of dispute resolution allows the permit holder to protect its rights for the stipulated period against state infringement. This element is closely related to the right of compensation, discussed in the next section (see 5.2.3).

Most countries in Anglophone Africa (15 out of 16) and Asia (11 out of 12) allow legal action, while this is not so in Francophone Africa (5 out of 19). Having the right to object allows a permit holder to object against a state's decision. In half the Anglophone countries, and in four Asian countries permit holders can object against the granting of a water permit to a new applicant.¹⁶¹ In most Anglophone African (14 out of 16) and Asian (9 out of 12), countries any person who is dissatisfied by the authority's decision may appeal to the appellate authority (e.g. Minister, Commission, Court, High Court, Water Tribunal, etc.). This may include an appeal against: the authorized body exceeding its jurisdiction; the decision that no compensation was payable; the refusal to issue a licence; the refusal to grant approval for the transfer of a licence; the imposition of a discretionary condition on a licence; the refusal to renew a licence; the amendment of a licence; and the suspension or cancelling of a licence.¹⁶² Some countries allow any aggrieved person

¹⁵⁵ Armenia.

¹⁵⁶ Kyrgyzstan.

¹⁵⁷ E.g. Kenya, Zambia.

¹⁵⁸ E.g. Philippines. The Water Code of the Philippines 1976 art 12.

¹⁵⁹ E.g. Georgia. State of Georgia government, 'Ga. Comp. R. & Regs. 391-3-6-.07 – Rule 391-3-6-.07 – Surface Water Withdrawals. Amended' (1978) <<http://rules.sos.ga.gov/GAC/391-3-6-.07>> art 13.

¹⁶⁰ Georgia.

¹⁶¹ Botswana, Cambodia, Eswatini, Ghana, Kenya, Kyrgyzstan, Malawi, Philippines, Sierra Leone, South Africa, Tanzania, Uganda, Vietnam, Zambia.

¹⁶² Water Resources Management Act 2013 (Namibia) art 120.

to appeal against this decision,¹⁶³ while other countries specify the grounds on which a permit holder can appeal.¹⁶⁴ Six Anglophone African countries¹⁶⁵ and one Francophone African country,¹⁶⁶ as well as four Asian countries¹⁶⁷ allow state governments to be sued. The right to sue enables the holder to sue the responsible authority in its corporate name.

5.2.3 Compensation

Another element I identified as key in the creation of quasi-property rights in water is the right to compensation. The right of compensation includes financial compensation for losses suffered resulting from the determination or limitation of the water use permit by the state, due to an illegal action including pollution, littering, or depletion of the water body by third parties, or in case the water beneficially used is allocated to another person. I identified the compensation element as a key element of quasi-property rights in water because it protects the permit holder against state infringement. It gives the permit holder a certain degree of security, both financially, as well as protection against their rights being taken away as states may be reluctant to take water back in case of the payment of compensation. Although a permit gives the right to use, the ability to claim compensation indicates the water right holds value. The right to compensation is an element of quasi-property rights in water as it resembles real property.

Many Anglophone (13 out of 16) and Francophone (14 out of 19) African countries, and Asian countries (10 out of 12) allow compensation claims. First, compensation can be claimed from the state where a water use permit cannot be used in full because of state interference, such as when a permit is suspended, amended or revoked ahead of schedule when this is in the 'public interest' to do so.¹⁶⁸ Compensation can also be claimed for loss incurred as a result of the execution of water resources management,¹⁶⁹ or in favour of a project of greater beneficial use.¹⁷⁰ Public interest could include when this is in the interest of public safety or the need for safe drinking water, to prevent or stop flooding or when there is a threat to public safety, or to preserve the aquatic environment from threats or when the environment is subject to critical hydraulic conditions that are incompatible with its preservation.¹⁷¹ Second, in seven countries the government can require a permit

¹⁶³ Armenia, Bhutan, Cambodia, Georgia, Kenya, Malawi, Uganda, Zambia, Zimbabwe.

¹⁶⁴ Botswana, Eswatini, Ethiopia, Ghana, Kyrgyzstan, Namibia, Nepal, Philippines, Sierra Leone, South Africa, Tajikistan, Tanzania.

¹⁶⁵ Ghana, Kenya, Malawi, Sierra Leone, Tanzania, Zambia.

¹⁶⁶ Benin.

¹⁶⁷ Georgia, Indonesia, Malaysia, Vietnam.

¹⁶⁸ Algeria, Armenia, Botswana, Burundi, Cambodia, Cameroon, Chad, Djibouti, Eswatini, Ethiopia, Ghana, Guinea, Kyrgyzstan, Malawi, Morocco, Mali, Nepal, Niger, Senegal, South Africa, Tanzania, Vietnam.

¹⁶⁹ E.g. Indonesia.

¹⁷⁰ E.g. Philippines.

¹⁷¹ CAR, Côte d'Ivoire, Togo.

applicant for water being beneficially used by some else, to pay compensation to the permit holder.¹⁷² And third, in 8 out of 16 Anglophone and 6 out of 19 Francophone African, and 7 out of 12 Asian countries, permit holders can claim compensation where water users cause damage to the holders of a water use permit or infringe in the water users' rights.

5.2.4 Protection of interests

Another element is the right of organizations and individuals to have their legitimate interests protected by the state. The element of the protection of a permit holder's interests feeds into the rights of dispute resolution and compensation and adds to the 'strength' of quasi-property rights in water through the protection and security permit holders enjoy. I see the right of the state protection as an element of quasi-property rights in water, as it mandates the state to protect and respect the permit holder's rights.

In some Anglophone African countries (4 out of 16) and Asian countries (9 out of 12), the water laws protect the interests of existing water users. Two countries explicitly do so: Vietnam allows water users to 'have their rights and legitimate interests protected by the state in the process of water resource exploitation' and the right to 'lodge complaints about and initiate lawsuits against acts of infringing upon their right to exploit and use water';¹⁷³ and in Georgia, water users have the right to 'appeal decisions of bodies and officials of the executive authority that infringe his/her/its rights to water use' and '[t]he rights of a water user shall be protected by law, and if infringed, the violated rights shall be restored'.¹⁷⁴

Other countries consider the impact of the proposed abstraction upon existing water users and/or other water users,¹⁷⁵ or state that water use authorizations are granted subject to the rights of third parties.¹⁷⁶ Three countries state this concretely. In Bhutan, the responsible authority must consult with downstream users of water prior to permit issuance;¹⁷⁷ in Cambodia, the responsible ministry must consult with other relevant agencies and local authorities concerned with the water use and waterworks construction proposed by the applicant¹⁷⁸; and in Lao, applications for water use must be accompanied by a social impact assessment which needs to be approved by the government.¹⁷⁹

¹⁷² Kenya, Philippines, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

¹⁷³ Law No. 17/2012/QH13 on Water Resources 2012 (Vietnam) art 43.

¹⁷⁴ Law of Georgia on Water 1997 art 39.

¹⁷⁵ Armenia, Côte d'Ivoire, Kyrgyzstan, Malawi, Namibia, Sierra Leone, South Africa, Uganda, Zambia; Armenia.

¹⁷⁶ Cameroon, CAR, Djibouti.

¹⁷⁷ The Water Act of Bhutan 2011 art 48.

¹⁷⁸ Law on Water Resources Management of The Kingdom of Cambodia 2007 art 14.

¹⁷⁹ Law on Water and Water Resource 1996 (Lao) art 18.

5.2.5 Alienation

I identified the right of alienation as a key element of quasi-property rights in water is the right to alienate a permit, which I consider key in the creation of quasi-property rights in water. The right of alienation includes the right to lease, trade, sell, transfer, temporary transfer, pass on to a named licensee as a successor-in-title at death, and the transfer, partition, lease or sale of land or industrial undertaking to which a permit has been appurtenant to.¹⁸⁰ I identified the right of alienation as a key element, (i) because water that is transferred is not returned to the public domain, and stays in the hands of the licensee. (ii) Allowing for the transfer of water rights can result in the creation of a *de facto* water market, as has happened in South Africa (see Box 8.4). (iii) By allowing the transfer of water rights, a water right is considered a commodity that holds value. (iv) The less the right to transfer water rights is constrained, the more it resembles real property (Wheeler & Garrick, 2020).

Most Anglophone (14 out of 16), Francophone (13 out of 19) African countries, and Asian countries (8 out of 12) allow permit alienation. No state sees such alienation as the start of a nationwide water market, although in many countries water use permits can be transferred to another user either with or without being subject to state approval. In cases of the transfer, partition, lease or sale of land or specified industry to which a permit has been appurtenant to, the water laws do not mention the need for state approval.

In fourteen countries where a water right has been declared to be appurtenant to land, the benefit of the right is enjoyed by the person who possesses the land.¹⁸¹ The water use permit passes in the case of changing proprietorship (i.e. transfer, lease, partition or devolution of property, by will or on intestacy, or otherwise) of the land. For example, Chad's water law states: 'The authorization to use water granted especially or specifically for agricultural, livestock, industrial or tourist purposes is a real right which remains attached to this exploitation, whoever the beneficiary may be.'¹⁸² A water permit can also pass with the: proprietorship of an industrial undertaking;¹⁸³ transfer of any premises;¹⁸⁴ and transfer of water construction to other water users.¹⁸⁵ The transfer may come with conditions.

¹⁸⁰ E.g. in Kenya: 'A permit shall specify ... the particular portion of any land, or the particular undertaking to which the permit is to be appurtenant, and ... shall ... pass with any demise, devise, alienation, transfer or other disposition whether by operation of law or otherwise.' Water Act 2016 (Kenya) art 45(1)(b).

¹⁸¹ Algeria, Armenia, Botswana, Burundi, Eswatini, Georgia, Kenya, Kyrgyzstan, Malawi, Morocco, Tanzania, Uganda, Zambia, Zimbabwe.

¹⁸² Loi N° 98-005 Portant Régime de l'Eau 1998 (Chad) art 85.

¹⁸³ Chad, Djibouti, Eswatini, Niger, Senegal.

¹⁸⁴ Uganda.

¹⁸⁵ Tajikistan.

In other cases, a water permit can be transferred without the alienation of land. If the authorization is personal it may be transferred to the heirs;¹⁸⁶ a licence may be passed on to a named licensee as a successor-in-title at death,¹⁸⁷ and/or the transfer is possible with approval or written consent of the responsible authority.¹⁸⁸ For instance, Zimbabwe's Water Law enables a permit holder, without the alienation of land, to 'cede, sell or otherwise alienate a permit except with the consent of the catchment council concerned'.¹⁸⁹ In Djibouti, Malawi and the Philippines, a permit holder may lease the permit to another person for a maximum period: in Malawi this period generally cannot exceed six months and in the Philippines a maximum continuous period cannot exceed five years.¹⁹⁰ Some countries allow a holder to trade a water permit subject to approval,¹⁹¹ or sell the water permit.¹⁹² In Malawi, saved water may be transferred to another person, free or for a price. Djibouti comes the closest to a water market, stating that 'water rights are freely transferable insofar as their purpose and the conditions for which they were granted are not substantially modified'.¹⁹³ Four countries forbid permit transfers.¹⁹⁴

5.3 Conditions for reallocating permits

Based on the analysis of policy that governs the granted water use permits, four main approaches have been identified, these include the (i) revoking, (ii) modifying, (iii) limiting, and (iv) suspending of water use permits. I assess these approaches in more detail by looking at the grounds on which these can be applied (e.g. public interest, to accommodate other users), and the conditions to which these approaches are subject (e.g. compensation, appeal) (see Appendix E and Appendix H).

5.3.1 Cancelling permits

The cancelling (revocation, determination, withdrawal, or termination) of water use permits is one of the main policy interventions mentioned in the analysed water laws (see Appendix E). States have the right to cancel a permit based on certain grounds, subject to specified conditions. When a state revokes a permit, the holders lose their entitlement

¹⁸⁶ Djibouti, Niger, Senegal.

¹⁸⁷ Azerbaijan, Burundi, Kenya, Kyrgyzstan, Namibia, Malawi, Zambia.

¹⁸⁸ Cambodia, DRC, Ghana, Lesotho, Mauritania, Nepal, Philippines, Rwanda, Vietnam.

¹⁸⁹ Water Act 1998 (Zimbabwe) art 38.

¹⁹⁰ Water Resources Act 2013 (Malawi) art 55; Water Code of the Philippines, Implementing Rules and Regulations 1979 art 5C.

¹⁹¹ Tanzania.

¹⁹² Armenia, Nepal.

¹⁹³ Loi N° L/94/005/CTRN Portant Code de l'Eau 1994 (Guinea) art 17.

¹⁹⁴ Cameroon, Congo, Indonesia, Mongolia.

to use water. Continuing water use following such revocation is considered a violation of the law, and the violator can be fined and/or imprisoned.

5.3.1.1 Violation of the law

All states (47 out of 47) have a provision in place on the cancelling of permits in case of violation of the law or permit conditions. The reasons include for example: non (beneficial) use of water; the usage of non-authorised water; a material misstatement in the application; non-payment of permit fees; intentionally/negligently contaminating water; or the illegal transfer of a permit. Five countries do not explicitly mention the cancellation of a permit in case the law or permit conditions are violated.¹⁹⁵ However, these countries do have a provision in place that states that any person violating the law or conditions commits an offence and is liable to a fine and/or imprisonment. In most countries the violation results in losing the entitlement to use water. Of these states, in four countries a permit holder can be given the opportunity to rectify the default.¹⁹⁶ Furthermore, two countries allow holders to object against the cancellation of a permit,¹⁹⁷ in three countries a permit holder can be given the opportunity to be heard before the permit is cancelled,¹⁹⁸ and in five countries a permit holder can be given the opportunity to explain why the permit should not be revoked.¹⁹⁹ Four countries allow a permit holder to appeal to a court²⁰⁰ or minister when aggrieved.²⁰¹ In all the considered countries (47 out of 47), the cancelling of permits due to violation of law or conditions comes without the possibility of claiming compensation.

5.3.1.2 Reallocation of water

Most countries (31 out of 47) allow for the cancellation of a permit for other reasons than the violation of the law or permit conditions, which have been categorised under the group 'reallocation of water' (see Table 5.2).

The analysis shows that the main reason to revoke a water use permit is if this is in the public interest (22 out of 47 states). For example, Ghana's Water Resources Commission Act (1996: Art. 20) reads: "where the [Water Resources] Commission is satisfied that water resources are required for a public purpose it may ... terminate or limit that right on the grounds that the water is required for public purpose, and the right shall cease or shall be exercisable only as so limited." While this gives states the power and liberty

¹⁹⁵ Congo, Nigeria, Sierra Leone, Rwanda, Tanzania, Zimbabwe.

¹⁹⁶ Botswana, Ghana, South Africa, Tanzania.

¹⁹⁷ Eswatini, Cameroon.

¹⁹⁸ Eritrea, Lesotho, Philippines.

¹⁹⁹ Kenya, Malawi, Namibia, Nepal, Zambia.

²⁰⁰ Ethiopia, Kyrgyzstan.

²⁰¹ Uganda, Zambia.

to take back the water, this is subject to conditions. For example, in all 22 states that allow taking back water in the public interest, this is subject to the possibility for the permit holder to claim compensation (21 states).²⁰² For example, Botswana's Water Act (1967: Art 25(1) and (2)) states: "[t]he holder of any right determined or diminished ... shall be entitled to receive compensation from the Government for all loss resulting from the determination or diminution of the right." Moreover, in addition to claiming compensation, a few states (11 out of 22) allow aggrieved permit holders to appeal, object, or lodge a complaint against the decision to cancel the permit, of which nine are in Anglophone Africa and two Asian countries. The aggrieved permit holders can appeal against that decision to cancel the permit in the public interest to the Minister,²⁰³ Water Tribunal,²⁰⁴ High Court,²⁰⁵ and/or any other Court.²⁰⁶

However, while many water laws use the term 'public interest' or 'public purpose' as a reason to cancel a permit, only three countries specify²⁰⁷ what they mean by this. For example, in the Philippines, permits may be cancelled for "a project of greater beneficial use or for multi-purpose development",²⁰⁸ and Nepal defines 'Extensive Public Use as "the use which does not cause substantial adverse effect to the existing use and serves benefits to larger population that the existing population benefited from it".²⁰⁹ While Tanzania states: "[w]ater shall be deemed to be required for a public purpose where it is required for any of the following uses- (a) the supply of water to any city, municipality, township, minor settlement or rural area; (b) firefighting; (c) the protection of ecosystems within protected areas of Mainland Tanzania; or (d) providing for disasters".²¹⁰

And three countries allow the minister to declare "any purpose to be a public purpose".²¹¹ In most countries public interest remains an undefined concept open for discussion and interpretation.

A few other countries (15 out of 47) allow for the cancellation of permits for other reasons than in the public interest. In two countries, a water use permit can be revoked to accommodate the needs of other water users.²¹² For example, in Nigeria, the minister

²⁰² Except Nigeria.

²⁰³ Botswana, Malawi, Uganda.

²⁰⁴ Eswatini, Kenya, Malawi.

²⁰⁵ Eswatini, Eritrea.

²⁰⁶ Tanzania, Zambia, Zimbabwe, Kyrgyzstan, Nepal.

²⁰⁷ Philippines, Nepal, Tanzania.

²⁰⁸ Water Code of the Philippines 1976, Art 30.

²⁰⁹ Water Resources Act 1992 (Nepal), Art 10.

²¹⁰ Water Resources Management Act 2009 (Tanzania), Art 72(2).

²¹¹ Water Act 1968 (Botswana), Art 25(4); Water Resources Act 2013 (Malawi), Art 51(2); Water Act 1995 (Uganda), Art 26(2).

²¹² Nigeria, Zimbabwe.

Table 5.2 Grounds for the cancellation of permits

Grounds Country	Public interest	Any time by the minister	Social urgency	Without cause assigned	Public health	Drinking water	Stop floods	Protect aquatic environment	Accommodate other users	Increase demand in water	Changing env. conditions	Water shortage	Interbasin water transfer
Botswana	✓												
Eritrea	✓											✓	
Eswatini	✓												
Ghana	✓												
Kenya										✓	✓		✓
Malawi	✓												
Nigeria	✓								✓				
Tanzania	✓												
Uganda	✓												
Zambia	✓												
Zimbabwe									✓				
Algeria	✓												
Burundi	✓				✓							✓	
Cameroon	✓												
CAR					✓	✓	✓					✓	
Chad	✓												

Grounds Country	Public interest	Any time by the minister	Social urgency	Without cause assigned	Public health	Drinking water	Stop floods	Protect aquatic environment	Accommodate other users	Increase demand in water	Changing env. conditions	Water shortage	Interbasin water transfer
Côte D'Ivoire	✓				✓	✓	✓	✓					
Djibouti	✓				✓	✓	✓						
Guinea	✓												
Mali							✓						
Mauritania		✓				✓							
Morocco	✓												
Senegal	✓												
Togo					✓	✓	✓	✓					
Bhutan			✓										
Kyrgyzstan	✓												
Malaysia				✓									
Nepal	✓												
Philippines	✓												
Tajikistan				✓									
Vietnam	✓												

Source: Author

may “cancel or modify any licence for the diversion and use of water for the purpose of accommodating the needs of another user of water to which that licence relates”²¹³ and in Zimbabwe the catchment council may grant a permit, and in the exercise of this power revise or cancel any existing permit.²¹⁴ In the latter case, the applicant is required to pay compensation to the person beneficially using the water.²¹⁵ Furthermore, Kenya allows the responsible authority to cancel a permit in case of increased water demand, or an inter basin water transfer.²¹⁶ An aggrieved permit holder can appeal to the Water Tribunal, and in the case of an inter basin water transfer a permit holder can claim compensation from the responsible authority.²¹⁷

In Francophone Africa, a few countries (8 out of 49)²¹⁸ allow for the cancellation of a permit for reasons of public health and safety, drinking water, to prevent or stop floods, and/or to protect the aquatic environment. In most of these cases, the cancellation is subject to the payment of compensation.²¹⁹ Furthermore, in Bhutan, a permit can be revoked in case of social urgency, without compensation.²²⁰ However, a permit holder does have the right to appeal against this decision²²¹ to the Court of Jurisdiction.²²² Three states allow a permit to be cancelled for no reason. In Mauritania the minister at any time has the right to revoke an authorisation without compensation.²²³ In Malaysia and Tajikistan, a permit can be revoked any time without cause, subject to the payment of compensation.²²⁴

Cancelling permits is not considered a common approach in situations of insufficient water or changing environmental conditions. A few states (2 out of 49) have a provision in place to revoke a permit in case of insufficient water. For example, in Eritrea, a permit can be cancelled in times of water shortage or anticipated shortage.²²⁵ In Kenya the responsible authority can cancel a permit as a result of changing environmental conditions, and only if this causes inequity, deteriorating water quality, insufficient water

²¹³ Water Resources Act 1993 (Nigeria), Art 11.

²¹⁴ Water Act 1998 (Zimbabwe), Art 22.

²¹⁵ Water Act 1998 (Zimbabwe), Art 34(6).

²¹⁶ Water Act 2016 (Kenya), Art 46.

²¹⁷ Water Act 2016 (Kenya), Art 53 and 55.

²¹⁸ Burundi, CAR, Chad, Côte D'Ivoire, Djibouti, Mali, Mauritania, Togo.

²¹⁹ Except in Chad, Djibouti.

²²⁰ Water Regulation of Bhutan 2014, Art 45.

²²¹ Water Act of Bhutan 2011, Art 61(a).

²²² Water Act of Bhutan 2011, Art 61(b).

²²³ Loi n° 2005-30 portant Code de l'eau (Mauritania), Art 35.

²²⁴ Water Act 1920 (Malaysia), Art 9; Water Code 2000 (translated March, 2001) (Tajikistan), Art 49 and 52.

²²⁵ Proclamation No.162/2010 Eritrean Water Proclamation (Eritrea). Art 10(3)(b).

for domestic use, or when there is a shortage of water.²²⁶ In both Eritrea and Kenya, the law is quiet on compensation. In the case of Kenya, an aggrieved person can appeal to the Water Tribunal.²²⁷

5.3.1.3 Inferences

Once water is allocated, it cannot easily be taken back. For example, in most states when a permit is revoked for reasons other than the violation of the law or conditions, permit holders can claim compensation and/are allowed to appeal against the decision to revoke the permit. The payment of compensation can be problematic. It can be an expensive exercise to compensate individual permit holders for their financial loss and it could possibly put a huge burden on the financial situation of governments, if at all states are able to finance it. Moreover, in Anglophone countries, permit holders enjoy legal protection under several procedures, including the possibility to appeal against the decision to revoke a permit. Not only can litigation be expensive, it can also be a time-consuming exercise. All in all, it can delay, complicate, and frustrate the process of taking water back. States cannot arbitrarily take back water by cancelling a permit, and permit holders enjoy a certain degree of protection. This impairs a state to reallocate water.

5.3.2 Modifying permit conditions

The amendment (also referred to as modification, variation, revision) of permits is another policy intervention mentioned in the water laws (see Appendix F). Based on certain grounds and subject to specified conditions, states have the right to amend the permit conditions, including the permitted volume of water. Some states do not specify the conditions that can be amended, other countries state that any condition can be modified, and some do clearly specify the conditions including, for example, the varying of the point of diversion or abstraction of the water used under the permit, varying the use of water authorized by the permit, modifying the volume abstracted, or the period of abstraction.

5.3.2.1 Violation of the law

About half of the states (23 out of 47)²²⁸ allow for the amendment of permits, subject to specified grounds (see Table 5.3). As with the cancellation of permits, one of the main reasons that allow for the amendment of the permit conditions is when the permit

²²⁶ Water Act 2016 (Kenya), Art 46.

²²⁷ Water Act 2016 (Kenya), Art 55.

²²⁸ All Anglophone African countries (15 out of 16), half of the Francophone African countries (5 out of 19) and Asian countries (3 out of 12).

Table 5.3 Grounds for the amendment of permit conditions

Grounds Country	Public interest	Drinking water health	Stop flooding	Protect aquatic environment	Social urgency	Accommodate other users	Increased demand	Insufficient water	Change env. Cond.	Inter basin transfer	Water quality harmful dist.	Prevent assigned ground	No cause	Other ground
Botswana	✓							✓						
Eritrea								✓			✓			
Eswatini	✓								✓					
Ethiopia							✓		✓					✓
Ghana								✓						
Kenya							✓		✓	✓				✓
Malawi	✓						✓		✓					✓
Nigeria										✓				
Uganda	✓							✓			✓			
Tanzania	✓							✓						
Zambia								✓						
Zimbabwe								✓						
Algeria	✓													
CAR		✓	✓	✓										✓
Côte D'Ivoire		✓	✓	✓										

Grounds Country	Public interest	Public health	Drinking water	Stop flooding	Protect aquatic environment	Social urgency	Accommodate other users	Increased demand	Insufficient water	Change env. Cond.	Inter basin transfer	Water quality harmful dist.	Prevent No cause assigned ground	Other
Djibouti	✓	✓	✓	✓										
Guinea	✓												✓	
Mauritania			✓											
Morocco	✓													
Togo	✓	✓	✓	✓										
Bhutan						✓								
Cambodia	✓													
Indonesia										✓				
Kyrgyzstan	✓								✓					
Malaysia														✓
Vietnam								✓						

Source: Author

holder violates the law or permit conditions (11 out of 47),²²⁹ or when the water is not (beneficially) used (13 out of 47).²³⁰ The amendment in these instances comes without compensation. Nevertheless, some countries do allow permit holders to show why their permit should not be amended in case of non-use,²³¹ to object against the modification,²³² give permit holders the opportunity to make representations,²³³ to be heard,²³⁴ or to appeal to a Court.²³⁵ A few countries have provisions to allow a general appeal against a decision when aggrieved.²³⁶

5.3.2.2 *Reallocation of water*

A few countries (12 out of 49)²³⁷ allow for the amendment of a permit if this is in the public interest. The amendments in these cases are subject to the payment of compensation.²³⁸ In Bhutan, a permit can be modified in case of social urgency, without compensation, but a permit holder does have the right to appeal against this decision. Moreover, in a few states (6 out of 49),²³⁹ permit holders can appeal/object against the amendment. Furthermore, five Francophone African countries allow for the modification of permit conditions if this is in the interest of public health or safety, to ensure drinking water, to stop flooding, or to protect aquatic environment.²⁴⁰ In three states this is subject to a compensation claim.²⁴¹ Djibouti states clearly that no compensation can be claimed: “Any modification or revocation of an authorization or concession in cases other than [the reasons stated] above shall be subject to compensation by the state to the holder of the authorization or concession, by way of indemnification for the loss suffered, and shall be fixed either amicably or by the competent courts.”²⁴²

²²⁹ Anglophone Africa: Eritrea, Eswatini, Kenya, Lesotho. Francophone Africa: CAR, Côte D’Ivoire, Djibouti, Mauritania. Asia: Bhutan, Cambodia, Kyrgyzstan.

²³⁰ Anglophone Africa: Botswana, Eswatini, Ghana, Kenya, Lesotho, Nigeria, Tanzania, Zambia, Zimbabwe. Francophone Africa: CAR, Côte D’Ivoire. Asia: Cambodia, Kyrgyzstan.

²³¹ Botswana, Kenya, Tanzania.

²³² Eswatini.

²³³ Ghana.

²³⁴ Lesotho, Tanzania.

²³⁵ Kyrgyzstan, Zimbabwe, Cambodia, Eritrea.

²³⁶ Botswana, Tanzania, Eswatini, Kenya.

²³⁷ Anglophone Africa: Botswana, Eswatini, Malawi, Uganda, Tanzania. Francophone Africa: Algeria, Djibouti, Guinea, Morocco, Togo. Asia: Cambodia, Kyrgyzstan.

²³⁸ Except Djibouti, Loi n° 93-AN-95-3e L du 04 avril 1996 portant Code de l’eau (Djibouti), Art: 28 and 29.

²³⁹ Anglophone Africa: Botswana, Eswatini, Malawi, Tanzania, Uganda. Asia: Cambodia, Kyrgyzstan.

²⁴⁰ CAR, Côte D’Ivoire, Djibouti, Mauritania, Togo.

²⁴¹ CAR, Côte D’Ivoire, Togo.

²⁴² Loi n° 93-AN-95-3e L du 04 avril 1996 portant Code de l’eau (Djibouti), Art 29.

The modification of permits is not considered a common approach in situations where water availability is, or is becoming, insufficient. In a few states (9 out of 49),²⁴³ a permit can be modified in case of insufficient water. For example, in Botswana, Kyrgyzstan, and Tanzania, a permit can be modified in case of insufficient water because of drought or an emergency, for such a period as deemed necessary.²⁴⁴ Also, a permit can be modified where the Minister (Eritrea) or Director (Uganda) believes that water is, or may become, insufficient.²⁴⁵ In Zambia, a permit can be amended after a hydrological survey has been undertaken that shows there is a water shortage.²⁴⁶ In Ghana, a granted permit can be modified for a specified period if water becomes insufficient as a result of the grant.²⁴⁷ In none of the above cases is there a mention of compensation.

Furthermore, only a few states (2 out of 49) allow the authority to take back water by amending permit conditions to accommodate other water users,²⁴⁸ or amend a permit because of an increase in water demand (4 out of 49).²⁴⁹ Only in one state, this is subject to compensation.²⁵⁰ A few other states (4 out of 49) allow for the modification of permits in case of a change in environmental conditions. For example, in three countries a permit can be amended if the water source is not able to ensure the normal supply of water.²⁵¹ In Ethiopia, a permit can be amended in case of changing environmental conditions.²⁵² In Indonesia, a permit can be modified if the “circumstances used as the basis of consideration for its granting already changes so that alternation of conditions is deemed necessary.”²⁵³

5.3.2.3 Inferences

States are poorly equipped to adapt to and anticipate to the rapid socio-economic and environmental changes. Most states do not have the policies in place that allow for the amendment of conditions of water use permits. The analysis shows that only half of the states (26 out of 49), other than allowing to make an amendment in situations of

²⁴³ Anglophone Africa: Botswana, Eritrea, Ghana, Uganda, Tanzania, Zambia, Zimbabwe. Asia: Bhutan, Kyrgyzstan.

²⁴⁴ Water Act 1968 (Botswana), Art 20; Laws of the Republic of Kyrgyzstan On Water 1994, Art 27; Water Resources Management Act 2009 (Tanzania), Art 36.

²⁴⁵ Proclamation No.162/2010 Eritrean Water Proclamation (Eritrea). Art 10(3)(b); Water Act 1995 (Uganda), Art 22(1) and (2).

²⁴⁶ The Water Resources Management Act 2011 (Zambia), Art 81(1)(b).

²⁴⁷ Water Resources Commission Act 1996 (Ghana), Art 19.

²⁴⁸ Nigeria, Zimbabwe.

²⁴⁹ Ethiopia, Kenya, Malawi, Vietnam.

²⁵⁰ Ethiopia: Proclamation No. 197J2000, Ethiopian Water Resources Management Proclamation, Art 16(3).

²⁵¹ The Water Act 2003 (Eswatini), Art 40; Water Resources Act 2013 (Malawi), Art 52; Law No. 17/2012/QH13 on Water Resources 2012 (Vietnam), Art 8.

²⁵² Proclamation No. 197J2000, Ethiopian Water Resources Management Proclamation, Art 16(3).

²⁵³ Law No. 7/2004 on Water Resources 2004 (Indonesia), Art 26.

committing an office or non-use of water, allow for the amendment of permit conditions. Although a few states (14 out of 49) allow to take back water in the public interest, for reasons of public health and drinking water, in most cases this comes with compensation. Moreover, the water laws give states little space to govern water, including amending a permit (i) to accommodate other water users (2 out of 49), (ii) as a result of an increase in water demand (4 out of 49), (iii) as a result of insufficient water (8 out of 49) or (iv) changing environmental conditions (6 out of 49). This limited space for amending permits and the possibility of permit holders to claim compensation and appeal impairs a state's ability to govern the water that is allocated through these permits.

5.3.3 Limiting permits

The limitation of permits (also referred to as to reduce, restrict, fix, prohibit, diminish) is another policy intervention in the arsenal available to states in the governance of permits. The limitation of permits allows the states to reduce the volume of water abstracted by permit holders.

Less than half of the states (21 out of 49)²⁵⁴ allow for the limiting of permits (see Table 5.4). The foremost reason to limit a permit is in case of a situation that is beyond the reasonable control of an authority, for example, in case of accidents, droughts, floods, or natural disasters (17 out of 21). The limitation of a permit is of a more temporary nature, even though this is not always explicitly stated. For example, Algeria's Water Law (2005: Art. 91) states that:

"In the event of natural disasters and particularly in case of drought, the water resources administration may take measures for the limitation or temporary suspension of water uses or make requisitions for the mobilization of the waters necessary to combat disasters and to ensure, as a matter of priority, the supply of water to the population and the watering of livestock."

Other reasons to limit the permit is for reasons of public interest (3 out of 49) or public health (2 out of 49). For other reasons than the public interest, limiting water use comes without compensation.

5.3.4 Suspending permits

The fourth policy intervention available to states is the temporary suspension of permits (see Appendix G). The suspension of permits allows states to temporarily suspend the abstraction of water by permit holders for the period deemed necessary.

About half of the countries (24 out of 49) allow for the suspending of permits (see Table 5.5). The main grounds on which a permit can be suspended is in case of an

²⁵⁴ Anglophone (8 out of 16) and Francophone African (8 out of 19), and Asian countries (5 out of 12).

emergency or drought (15 out of 49) and for reasons of public interest/health and or social urgency (7 out of 49). Few states mention insufficient water (2 out of 49) and the environment (2 out of 49) as a reason to suspend a permit.

Table 5.4 Grounds for the limiting permits

Grounds Country	Emergency or drought	Public interest	Combat over- exploitation	Health	Failure compliance law/conditions	Usage non- authorised water	Nonuse	Permit holder's request
Botswana		✓					✓	✓
Eswatini	✓							
Ethiopia	✓							
Ghana		✓					✓	
Nigeria				✓				
Uganda	✓			✓				
South Africa	✓							
Tanzania							✓	
Algeria	✓	✓						
Burkina Faso	✓				✓	✓		
Burundi	✓							
Chad	✓							
Congo	✓		✓					
Congo DR	✓				✓			
Mauritania	✓							
Togo	✓							
Georgia	✓							
Kyrgyzstan	✓							
Mongolia	✓							
Philippines	✓							
Tajikistan	✓	✓						

Source: Author

Table 5.5 Grounds for the suspension of permit

Country	Emergency or drought	Public interest	Public health	Social urgency	Insufficient water	Deterioration water quality	Wasting water	Environment
Botswana	✓							
Eritrea	✓				✓	✓		
Eswatini	✓							
Ghana						✓		
Uganda					✓	✓		
Tanzania	✓							
Zambia	✓							
Zimbabwe	✓							
Algeria	✓						✓	
Benin								
Burkina Faso								
Burundi	✓							
Congo DR	✓							
Guinea	✓							
Mauritania	✓							
Niger		✓						
Togo			✓				✓	
Armenia	✓	✓				✓		✓
Bhutan	✓		✓	✓				
Cambodia			✓					✓
Indonesia	✓							
Kyrgyzstan	✓							
Philippines				✓				✓
Tajikistan				✓				

Source: Author

5.3.5 (Periodical) review of permits

In addition to the policy approaches discussed above, a few laws have provisions in place that allow states to execute a more proactive approach to the reallocation of water, that gives them the mandate to cancel, amend, limit, or suspend a permit to anticipate water changes. Three processes have been identified: (i) the (periodic) review of permits, (ii) the re-application of permits, and (iii) the declaration of an area that needs state intervention.

The review of permits allows a responsible authority to review the permit's conditions, which may lead to an amendment or substitution of existing conditions, provided that certain requirements are satisfied. A few states (4 out of 49) allow for the review of permits (see Table 5.6). Two states allow the minister to decide at any time that permits should be reviewed, for example, when the volume of water is insufficient to satisfy all authorized water uses.²⁵⁵ In other two states, water use permits are subject to a periodical review subject to specified conditions.²⁵⁶ For example, the grounds on which permits can be reviewed in South Africa include: that the volume of water is insufficient to satisfy all authorized water uses, to accommodate demand as a result of changes in socioeconomic circumstances, or to prevent deterioration of water quality. Malawi on the other hand, does not specify the criteria under which a permit can be reviewed.²⁵⁷ Regarding the period, South Africa states that permits can be reviewed only at the time periods mentioned in the permit conditions, at intervals not exceeding five years.²⁵⁸ In Malawi the law only mentions the law should specify the "frequency of review of the licence".²⁵⁹

Table 5.6 Grounds and conditions for the periodical review of permits

Country	Insufficient water	Accommodate demand	Water quality	Not specified	Equity Appeal	Appeal Water Tribunal	Appeal Court	Show cause	Compensation
Botswana	✓				✓	✓			
Malawi				✓		✓	✓		✓
South Africa	✓	✓	✓		✓	✓	✓		✓
Tanzania	✓				✓	✓	✓		

Source: Author

²⁵⁵ Botswana, Tanzania.

²⁵⁶ Malawi, South Africa.

²⁵⁷ Water Resources Act 2013 (Malawi), Art 41(1)(f).

²⁵⁸ National Water Act 1998 (South Africa), Art 28(1)(f).

²⁵⁹ Water Resources Act 2013 (Malawi), Art 41(1)(f).

While the review of permits allows governments to amend the permit's terms and conditions, this is subject to certain conditions. In South Africa, permit conditions can only be modified in an equitable manner through a general review process.²⁶⁰ Moreover, when this amendment "severely prejudices the economic viability" of permit holders, and when the water is beneficially used, the permit holders can claim compensation.²⁶¹ However, compensation is not payable if water is needed for the Reserve, to rectify an over-allocation of water, or rectify an unfair or disproportionate water use.²⁶² Furthermore, in the review process, permit holders must be given the opportunity to be heard.²⁶³ If a permit holder disagrees with an amendment of a condition the holder can appeal to the Water Tribunal,²⁶⁴ and has the possibility to appeal to a High Court against that decision.²⁶⁵ I see similar conditions in the other countries. In Botswana and Tanzania, the permit review is subject to an equity principle. Both laws state "that where beneficial use of the whole right has been maintained, no [right/permit] shall be cancelled or reduced except proportionally with all other rights in the same area."²⁶⁶ An aggrieved person can appeal against the minister²⁶⁷ or appellate authority.²⁶⁸ In Tanzania and Malawi, a permit holder can appeal against that decision to the Court.²⁶⁹

5.3.6 Permit re-application

The reapplication of permits is a process that requires all water users, including existing permit holders, to reapply for a water use permit. This process may result in the amendment of permit conditions, or the cancellation of permits of existing permits.

A few states (2 out of 49) allow a responsible authority to initiate a process for the re-application for permits (see Table 5.7).²⁷⁰ In both states, the conditions to invoke the permit reapplication process includes: (i) to achieve sustainable allocation of water in an area that is under water stress, (ii) equity in water allocations, (iii) to promote beneficial water use in the public interest, (iv) to facilitate efficient management of the water resources, or (v) to protect water quality.²⁷¹ The procedures of the process are different in both counties. In Zambia, the submitted permit applications are subject to public

²⁶⁰ National Water Act 1998 (South Africa), Art 49(3).

²⁶¹ National Water Act 1998 (South Africa), Art 49(4) and 22(6).

²⁶² National Water Act 1998 (South Africa), Art 22(7)(a).

²⁶³ National Water Act 1998 (South Africa), Art 49(5).

²⁶⁴ National Water Act 1998 (South Africa), Art 148(1)(h).

²⁶⁵ National Water Act 1998 (South Africa), Art 149(1)(a).

²⁶⁶ Water Act 1968 (Botswana), Art 19; Water Resources Management Act 2009 (Tanzania), Art 35.

²⁶⁷ Water Act 1968 (Botswana), Art 31(1); Water Resources Act 2013 (Malawi), Art 142.

²⁶⁸ Water Resources Management Act 2009 (Tanzania), Art 106.

²⁶⁹ Water Resources Management Act 2009 (Tanzania), Art 106; Water Resources Act 2013 (Malawi), Art 142.

²⁷⁰ Kenya and Zambia.

²⁷¹ Water Act 2016 (Kenya), Art 47(1); Water Resources Management Act 2011 (Zambia), Art 83(1).

consultation. After which the Board shall grant the permits for the use of water.²⁷² An aggrieved person can appeal to the Minister.²⁷³ In Kenya, on receipt of re-applications, first a proposed allocation schedule shall be prepared which is subject to public consultation. This is followed by a preliminary allocation schedule. A person who is dissatisfied with this schedule can appeal to the Water Tribunal, and can appeal against that decision to the Land and Environment Court.²⁷⁴ The “preliminary allocation schedule shall become a final allocation schedule if no appeal is lodged”, when “it has been amended after a successful appeal, or if every appeal has been dismissed.”²⁷⁵ In granting permits the responsible authorities of both states shall take into consideration the prescribed conditions.²⁷⁶ Furthermore, in both processes, compensation is not mentioned.

Table 5.7 Grounds and conditions for the permit application and reapplication

	Steps in (re-) application process	Steps in (re-) application process	Public consultation	Appeal to Water Tribunal	Appeal to Court	Appeal to the Minister	Considerations for the issuance of permits.	No appeal
Kenya	Proposed allocation schedule		✓					
	Preliminary allocation schedule			✓	✓		✓	
	Final allocation schedule							✓
Zambia	Grant permits		✓			✓	✓	

Source: Author

5.3.7 Declare areas: Spatial protections

More than half of the states (28 out of 49) allow them to declare specified areas that mandates them with additional powers to address the situation that has arisen regarding water (see Appendix H). These areas include protected areas, water shortage/emergency areas, ground water conservation/protection areas, and controlled areas.

²⁷² Water Resources Management Act 2011 (Zambia), Art 83(2).

²⁷³ Water Resources Management Act 2011 (Zambia), Art 157(1)(c).

²⁷⁴ Water Act 2016 (Kenya), Art 47(4) and 124.

²⁷⁵ Water Act 2016 (Kenya), Art 47(5).

²⁷⁶ Water Act 2016 (Kenya), Art 43(1); Water Resources Management Act 2011 (Zambia), Art 47.

The two main areas that can be declared by a state include a ‘protected area’ (19 out of 49 states) or a ‘water shortage/emergency area’ (14 out of 49 states). In the protected areas, special measures can be taken that are deemed to be necessary to conserve, protect or enhance a vulnerable water resource, riverine habitat, watershed, ecosystem, or other environmental resource that is at risk of significant changes to resource quality, depletion, contamination, extinction, or disturbance from any source. In this area, for example, some states (6 out of 49) can limit, restrict, or suspend the use of water, and in a few other states (10 out of 49), the government can impose requirements, regulate, or prohibit an activity. In the states that allow for a water shortage/emergency area to be declared in situations where due to an exceptional event, a few states (6 out of 49) allow, for example, to limit, restrict, suspend a water permit, (3 out of 49) impose requirements, regulate, or prohibit an activity, and/or (3 out of 49) modify a permit.

Furthermore, in Kenya and Malawi, the state “may impose such requirements, regulate, or prohibit such conduct or activities, in relation to a groundwater conservation area as the Authority may think necessary to for the protection of the area and its water resources”,²⁷⁷ and in Tanzania, “no person shall construct, sink, enlarge or deepen a well or borehole except in accordance with a groundwater permit granted under this Act.”²⁷⁸ In Tanzania, the beneficiary of the area, when this is established for the supply or water, or commercial, industrial or agricultural development, may be ordered “to pay any compensation payable”²⁷⁹

While states can declare specified areas under exceptional situations without the need to pay compensation, these measures focus on limiting, restricting, suspending permits, or imposing requirements that regulate or prohibit specified activities. In most cases, these areas are temporary and do not result in long term solutions.

5.4 Inferences for water reallocation

In this chapter I looked at how property rights in water have evolved including through granting water use permits in Anglophone and Francophone Africa and Asia (to address knowledge gap 1), and what the implications are for water allocations and reallocation (to address knowledge gap 2). I identified a number of trends. First, permit allocation can include 13 different kinds of ‘property’ elements which can be clustered into five groups of property-like rights and may impair water reallocation (see Table 5.8). These elements are fairly homogeneous across all countries. These quasi-property rights include the right to use water for a specified period, the right to alienate or to transfer

²⁷⁷ Water Act 2016 (Kenya), Art 23; Water Resources Act 2013 (Malawi), Art 85.

²⁷⁸ Water Resources Management Act 2009 (Tanzania), Art 38.

²⁷⁹ Water Resources Management Act 2009 (Tanzania), Art 38.

the permit, the right of legal protection, the right to compensation, and the right to have their interests protected by the state. It will be difficult for states to change these rights over time, as some countries allow permits for 75 years, which reduces the ability of the state to reallocate water if necessary; some countries allow for compensation and litigation if permit conditions are changed, which also reduces state's ability to reallocate water and may lead to policy 'freezing'. Of course, providing a certain level of security may be necessary to encourage long-term investment by large companies, but it might undermine state actions in a situation of hydrological uncertainty.

Second, in the allocation of water through permits, states focus more on providing rights and security to the permit holders, and less on the governance aspect of the issued permits. The main policy approaches to govern permits include the revocation, amendment, limiting, and suspension of permits. The grounds on which the approaches can be applied are rather reactive than proactive. These focus mainly on repercussions regarding the violation of the law and permit conditions, and less on for example the reallocation of water, including meeting increased demand, and accommodate new water users. The cancellation and reallocation of permits can mostly be done in the public interest, such reallocation may be subject to claim compensation and legal action. Compensation can be expensive, and litigation can be a time-consuming exercise, which may limit the states' ability to reallocate water. There are only six states out of 47 that have proactive systems in place that allow for water reallocation, which can be applied without the payment of compensation. Two countries allow for the reapplication of permits to e.g. achieve sustainable allocation of water and equity in water allocations, without the payment of compensation. Two states allow for the periodical review of permits, e.g. allowing states to free up water if the volume of water is insufficient to satisfy all authorized water uses, or to accommodate demand as a result of changes in socioeconomic circumstances, and two states allow for the review of permits if there is insufficient water to satisfy all authorized water use. This allows states to take control back over the water, although, executing the process in a fair and equal manner can be challenging. The processes are complex and time-consuming, and put a heavy administrative and financial burden on a state's department which is complicated and frustrating.

Most states do not have a system in place to govern the granted permits proactively, impairing the state's power to govern water, including the reallocation of water to provide for growing demand for water use, to facilitate social and economic development, to promote equitable access to water, to redress the results of past racial and gender discrimination, and to respond to changing environmental conditions. Not having policy in place, or having policy in place that is difficult, if not impossible to implement, results in the development of quasi-property rights which impairs the ability of a state

to reallocate water and accommodate changes in the economic, social and hydrological conditions.

Table 5.8 Quasi-property rights in water through permits, affecting water reallocation

Quasi-property rights	Element*	Affecting water reallocation
Temporal	Period for which the permit is valid	For the permit period, the government no longer holds the granted rights and loses control over these rights. The longer the permit period, the longer the rights are granted, the longer the water cannot be reallocated, and thus the more water reallocation is impaired. The period is thus a key element of quasi-property rights, and should be considered as a scale, with perpetuity on the far end.
	Renew permits when expired	By renewing a permit, the duration of the permit can be extended. The longer the permit period, the more water reallocation is impaired.
	Change permit conditions	Permit conditions can be amended intermediate, this can include the permit period, but also other conditions including the volume of water. Regarding the permit period, both arguments above apply.
Alienation	Transfer permit	With the transfer of permit, a permit holder can get rid of their rights. The water that is part of the permit is not returned to the public domain when changing hands and is only returned once the permit period ends. This may impair water reallocation.
	Appurtenant to land or industrial undertaking	A water permit that is appurtenant to land or an industrial undertaking is transfer along with the sale of the land of industrial undertaking. Same argument applies as with the transfer of permits.
Legal action	Object against a state's decision	The possibility to object against a decision affecting the permit conditions allows the permit holder to take action against (unlawful) acts. It allows the permit holder to protect its rights, which may impair water reallocation, as this may limit the state in its actions.
	Appeal against a state's decision	The possibility to appeal against a decision affecting the permit conditions allows the permit holder to act against (unlawful) acts. It allows the permit holder to protect its rights by using the judicial system. Moreover, litigation can take many years, delaying the implementation of the planned action. It can be expensive and may put an administrative burden on the responsible authority. This may impair water reallocation as the state can be limited in its actions. This can also lead to policy 'freezing', whereby the implementation or updating of policy is halted.
	Settle disputes when interests are violated	Dispute settlement allows the permit holder to secure a positive solution to a dispute and may affect the state's mandate. Same arguments apply as the objection against a state's decision.
	Possibility to sue the state.	The possibility to sue the state allows the permit holder to protect its rights by using the judicial system. Same arguments apply as the appeal against a state's decision.

Quasi-property rights	Element*	Affecting water reallocation
Compensation	Claim compensation if permit is with drawn	The possibility to claim compensation allows permit holders to claim compensation when their rights are affected, giving the permit holder a certain degree of financial security. The right is linked to the other rights, for example the right to appeal or the temporal element. It is crucial element of the development of strong quasi-property rights in water. Compensation can be expensive, which may result in states being hesitated to take back water, and thus may affect water reallocation.
	Permit applicants compensate permit holder that beneficially used the water	In case of reallocation, the permit holder can claim compensation from the applicant who is allocated the water that has been usefully used by the permit holder. This gives the financial security.
	Compensated for any (financial) loss suffered in case of damage	In case of damage, the permit holder can claim compensation from the actor causing the damage. This gives the financial security.
Protection of interests	State protection of rights	The law may have provision in place ensuring the interest of permits holders are protected. This adds to the security of the permit holder as the state protects their interest. This may limit water reallocation, as in the case of an unlawful act the permit holder can appeal and possibly claim compensation.

* The individual elements are described separately, but must be considered integrally, and the sum of the individual elements result in quasi water property rights.

Source: Author

I conclude that the creation and conditions of permits leads to the development of quasi-property rights: First, by allocating 13 different 'property' elements, clustered in 5 quasi-property rights to actors through the granting of water use permits, and second through the conditions that govern permit extension or cancellation. Although all the researched countries have avoided using any mention of private property in connection to water in their water laws, they often end up *de facto* privatizing water which may impair states to take back and reallocate water. Hence, any water use permit as a legal entitlement can be seen as an exception to state ownership. It is not easy for a state to set up a fair and equitable system that balances the need for a system that allows the state to reallocate water if needed, and the need for a system that is fair to the permit holders, which demand security in respect to the supply of water and to the investments made.