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Deutsches Institut für Entwicklungspolitik

German Development Institute

Discussion Paper 10/2018

River Basin Management and Fiscal Decentralisation: Mutually Supportive or Counterproductive?

A Case Study of Mongolia

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Mirja Schoderer

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Bonn 2018

Discussion Paper / Deutsches Institut für Entwicklungspolitik
ISSN 1860-0441

Die deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.d-nb.de abrufbar.
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at http://dnb.d-nb.de.

ISBN 978-3-96021-066-5 (printed edition)

DOI:10.23661/dp10.2018

Printed on eco-friendly, certified paper

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Published with financial support from the Federal Ministry of Education and Research (BMBF)

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Acknowledgements

This discussion paper was prepared in the context of the inter- and transdisciplinary research projects "Integrated Water Resources Management in Central Asia – Model Region Mongolia (MoMo)" (grant no. 033W016CN) and "Increasing Good Governance to Achieve Integrated Water Management (STEER)" (grant no. 02WGR1425C), both of which are funded by the German Federal Ministry of Education and Research (BMBF). Much of the empirical analysis builds upon a consultancy carried out by Dr Ariunaa Lkhagvadorj, Professor of Public Finance at the Mongolian Academy of Governance, Ulaanbaatar, as part of the MoMo project. Mirja Schoderer's contributions were covered by STEER and Ines Dombrowsky's inputs by the institutional budget of the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE). Dr Jean Carlo Rodriguez de Francisco contributed towards setting up Dr Lkhagvadorj's consultancy and commented on earlier versions of the consultancy. Key empirical results presented in this paper were discussed during a workshop at the "MoMo Transfer Conference" in Mongolia in September 2017. We greatly appreciate the time and input by all Mongolian interview partners and workshop participants, as well as the very helpful comments from Dr Imme Scholz and Dr Armin von Schiller – both from the German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) – on an earlier version of this paper.

Bonn, April 2018 Ines Dombrowsky, Ariunaa Lkhagvadorj and Mirja Schoderer

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Abbreviations

AEA	*Aimag* environmental agency
EPL	Environmental Protection Law
LwLN	Law with the Long Name (informal designation) Full title: The Law Prohibiting Mining in the Land Area drained by River and Natural Water Storage place, as well as Forest Areas
MET	Ministry of Environment and Tourism
MNT	Mongolian tugrik
MoMo	Integrated Water Resources Management in Central Asia – Model Region Mongolia project
NRUFL	Natural Resource Use Fee Law
RBA	river basin authority
RBC	river basin council
RBMP	river basin management plan
RBO	river basin organisation
WEAA	Weather and Environment Analysing Agency
WL	Water Law
WPL	Water Pollution Law

Executive summary

The concept of "river basin management" calls for managing water resources at the river basin level in order to promote the sustainable use of water resources. Often the concept of river basin management is associated with the introduction of "river basin organisations" (RBOs) as special purpose organisations. However, in many developing countries, RBOs remain underfunded. Fiscal decentralisation involves shifting certain responsibilities for expenditures or revenues to lower levels of government. It usually involves a reallocation of functions and revenues so that functions are adequately funded. Fiscal decentralisation is supported by the principles of subsidiarity, disentanglement, cooperation, accountability and fiscal equivalence, with the latter asking for a congruence of those who pay for, who decide upon and who benefit from public goods. On the one hand, fiscal decentralisation can support RBOs if sufficient financial resources are allocated to them to fulfil their tasks. However, if RBOs are excluded from resources at the sub-national level, it can also be counterproductive and lead to increased competition with general-purpose jurisdictions at the sub-national level.

This discussion paper, therefore, asks the question of whether fiscal decentralisation supports or counteracts the funding of river basin management in the case of Mongolia, which has undergone parallel processes of institutionalising RBOs and of fiscal decentralisation in the last decade. In order to answer the overriding question, the paper analyses i) how competencies for various water governance functions between RBOs and other bodies at the sub-national level are formally allocated; ii) the funding arrangements in place for water-related functions of RBOs and other sub-national bodies; and iii) how RBOs and other sub-national authorities coordinate or compete for water governance funding, and what this implies for sustainable water resource use. The paper compares the responsibilities of national and various sub-national entities and assesses the extent to which the principles of disentanglement, cooperation, subsidiarity and accountability are applied in Mongolian water governance. It also analyses the formal and *de facto* funding sources and budgeting systems of the sub-national entities responsible for water management, in order to assess to what extent the principle of fiscal equivalence is realised.

The discussion paper finds that there is still considerable room for improving the realisation of the principles of disentanglement, cooperation, subsidiarity and accountability in the allocation of competencies in Mongolian water governance. At the sub-national level, a high number of actors are involved in water governance, and the allocation of various water governance functions between river basin authorities (RBAs), river basin councils (RBCs), *Aimag* environmental agencies (AEAs), and governors and assemblies at the levels of provinces (*Aimags*), districts (*Soums*) and communities (*Bahgs*) remains complex and convoluted. Despite a broad division of labour, a high level of overlap exists in terms of data management; monitoring water resources, water uses and law implementation; law enforcement; and to a certain degree the implementation of measures among these actors.

The principle of fiscal equivalence is also not fully realised in Mongolian water resources management. In terms of financing water governance, RBAs are primarily financed through the national budget and AEAs through sub-national province budgets. However, uncertainties exist regarding the allocation of water-use fees due to inconsistent legal provisions. In practice, available funds to RBAs only cover fixed costs. Thus, RBAs are largely assigned unfunded mandates for planning, monitoring and implementing water

protection. This considerably limits the effectiveness of the river basin management approach. Overall, AEAs have somewhat higher budgets for environmental protection than RBAs. However, the case study shows, for example, that AEAs sometimes do not allocate any funds for water-related projects at all and do not necessarily earmark 35 per cent of water-use fees for environmental protection.

Furthermore, problems of underfinancing exacerbate problems of overlapping responsibilities. The inconsistent legal provisions on water-use fees have led to competition between AEAs and RBAs, which undermines trust between the different agencies and makes it more difficult to perform the tasks that they share as well as to coordinate on those tasks where their responsibilities overlap. Still, in the case analysed, recent first attempts have been undertaken to clarify responsibilities in Memorandums of Understanding. While the effectiveness of these Memorandums of Understanding should be subject to future research, they alone will hardly solve the problem of underfinancing. Therefore, the paper concludes that in Mongolia, fiscal decentralisation and the institutionalisation of river basin management are, so far, hardly mutually supportive, but rather competitive processes. It recommends a number of legal adjustments as well as the financial empowerment of RBAs and RBCs in order to support the sustainable use of water resources.

1 Introduction

The concept of "river basin management" calls for managing water resources at the level of river basins. Advocates of basin management argue that it allows for an adequate protection of ecosystems as well as economically optimised and socially equitable outcomes (e.g. McCaffrey, 2003; Newson, 1992; Rogers, 1997; Sadoff, Whittington, & Grey, 2002). In the classification of multi-level governance models by Marks and Hooghe, river basin management implies a type II model of multi-level governance, in which task-specific jurisdictions are embedded within a type I multi-level governance model, which is characterised by nested general-purpose jurisdictions (Marks & Hooghe, 2004).

Although the concept of river basin management is not necessarily new (e.g. Barrow, 1998; Kneese & Bower, 1968; Teclaff, 1996), it has gained new momentum since the 1992 Dublin International Conference on Water and the Environment as well as Agenda 21 (United Nations Conference on Environment and Development, 1992). In consequence, many countries have started to institutionalise river basin management and to introduce river basin organisations (RBOs). However, whereas river basin governance is increasingly being implemented worldwide, in particular the introduction of RBOs remains disputed (Mollinga, Dixit, & Athukorala, 2006; Warner, Wester, & Bolding, 2008). Researchers argue that although RBOs may solve "problems of fit" between hydrological and administrative boundaries, they may create new problems of "institutional interplay" between RBOs and existing jurisdictions (e.g. Herrfahrdt-Pähle, 2010; Moss, 2003, 2004). Especially in federal countries, existing administrations may also resist transferring power to RBOs (Barrow, 1998; Moss, 2003; Mostert, 1998). Furthermore, RBOs may raise issues of democratic representation and legitimacy (Dombrowsky, 2005; Huitema & Meijerink, 2014; Merrey, 2008; Warner et al., 2008). Finally, empirically, many RBOs face a serious lack of funding, in particular in developing countries (e.g. Beveridge & Monsees, 2012). In consequence, RBOs present a very mixed picture in terms of effectiveness (African Ministers' Council on Water, 2012; Barrow, 1998; Cap-Net & UNESCO-IHE, 2008; Kemper, Blomquist, & Dinar, 2010; Schlager & Blomquist, 2008; United Nations Environment Programme, 2012). The relevance and appropriateness of RBOs has been questioned, in particular for developing countries (Cap-Net & UNESCO-IHE, 2008; Lankford & Hepworth, 2010; Shah, Makin, & Sakthivadivel, 2001). For instance, Lankford and Hepworth (2010) argue that large distances, marked seasonality, a lack of data monitoring and challenging institutional environments may not be conducive towards a river basin management approach in large parts of sub-Saharan Africa.

So far, the interrelation between the introduction of RBOs and overriding processes of decentralisation, in general, and fiscal decentralisation, in particular, has received relatively little attention in the literature. This is regrettable, considering that their interplay can be quite important for the funding – and as such the effectiveness – of river basin management. Therefore, in the following, we elaborate upon the role RBOs may potentially play in the context of processes of (fiscal) decentralisation, drawing on literature on fiscal federalism and multi-level governance.

Decentralisation implies the devolution of powers to lower levels of government. A distinction is made between administrative, political, fiscal and economic decentralisation:

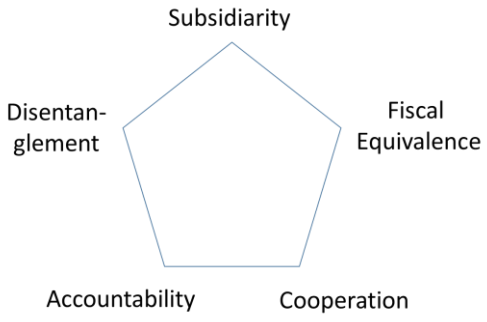
> Administrative decentralisation is the hierarchical and functional transfer of executive powers between different levels of government. By way of political decentralisation,

> citizens or their elected representatives are given increased influence in political decision-making at the local level. Fiscal decentralization implies that local authorities become responsible for local revenue and expenditure assignments, while economic decentralisation refers to the transfer of certain functions from the public to the private sector. (Steiner, 2005, p. 9)

Fiscal decentralisation is generally considered desirable, as it empowers local governments in service delivery and – at least in democracies – makes them more directly accountable towards their constituencies. However, it might also produce negative effects if local authorities lack the capacity to handle these responsibilities (Bird & Vaillancourt, 1998; Smoke, 2001).

Ideally, fiscal decentralisation is based on the principles of subsidiarity, disentanglement, cooperation, accountability and fiscal equivalence (Figure 1). The principle of subsidiarity states that functions are to be allocated towards the level closest to the citizens; a higher state level only takes over responsibility for a function if – and in so far as – the objectives of the function cannot be sufficiently achieved by the lower state level (Oates, 1999). According to the principle of disentanglement, a strict separation of powers between different state levels should be applied; for each function, the responsibilities of each state level are clearly defined, including administrative roles and competencies (Petersen, Scheller, & Wintermann, 2008).[1] This is complemented by the principle of cooperation, stressing that – in the case of shared or delegated functions – collaborative management approaches that facilitate the effective and efficient provision of services by higher and lower state levels should take precedence (Humplick & Moini-Araghi, 1996). According to the principle of accountability, rules and procedures are to be put in place which make sure that administrative and territorial units and their officials answer for their actions, and that there is redress when they do not meet their duties and commitments (Seabright, 1996). All these principles converge in the principle of fiscal equivalence, stating that the users of collective goods or services should be obliged to finance their provision, and ideally also have the authority to take decisions on them (Hansjürgens, 2001; Olson, 1969). Hence, basic elements of a decentralisation reform involve a (re-)allocation of functions and associated spending needs, a (re-)allocation of revenues and fiscal equalisation. Interestingly, the abovementioned general principles in public finance are largely mirrored in specific principles of water policy, even if it can be assumed that the latter were not drafted by public finance specialists (see Box 1).

Figure 1: Five principles of fiscal decentralisation



Source: Authors

1 While research into resilience assumes that a certain degree of duplication and redundancies enable a governance system to withstand shocks more easily, this perspective nonetheless emphasises the need for coordination among the respective institutions to ensure that overlap is beneficial (Walker & Salt, 2006).

Box 1: The OECD water governance principles

The water governance principles of the Organisation for Economic Co-operation and Development (OECD) rely on three pillars that lead to good water policy outcomes:

- effectiveness
- efficiency
- engagement

Within this framework, effectiveness refers to:

1. the clear-cut allocation and differentiation of water governance roles and responsibilities, and good coordination among the authorities;
2. managing water at the appropriate scale(s) within integrated basin governance systems to reflect local conditions, and fostering coordination between the different scales;
3. policy coherence through effective cross-sectoral coordination; and
4. adapting the level of capacity of responsible authorities to the complexity of water challenges to be met.

Appropriate financing has been added as a relevant principle within the "efficiency pillar" (Organisation for Economic Co-operation and Development, 2015). The management of finite water resources within river basins, the decentralisation of water management to the lowest appropriate level, as well as the recognition of water as an economic resource has also been advocated by the 1992 Dublin statement of an integrated water resources management (International Conference on Water and the Environment, 1992).

Hence, it seems desirable to apply the abovementioned principles of fiscal decentralisation to water governance. The question remains, however, what this means in practice within the context of multi-level governance, which characterises water governance efforts. In particular, does this imply a type I or a type II model of multi-level governance (Marks & Hooghe, 2004), and what does it mean for the interplay of type I and II arrangements?

Literature on multi-level governance distinguishes between two types of governance concepts (Marks & Hooghe, 2004): Type I implies a layered model of nested, general-purpose institutions that follow one uniform design and have no overlapping memberships. For type II multi-level governance, task-specific jurisdictions are created. These are usually embedded within a legal framework determined by type I jurisdictions. Institutional designs within type II multi-level governance are flexible, and simultaneous memberships in different institutions are possible (see also Frey & Eichenberger, 1996). Hence, within this framework, RBOs can be considered as an example of type II multi-level governance.

On the one hand, RBOs themselves can be considered as a particular way of realising fiscal decentralisation if powers and financial competencies are transferred from the higher (e.g. national) level to sub-national RBOs.[2] Indeed, when introducing the principle of fiscal equivalence, Olson pointed at the possibility of what was later called type II multi-level governance arrangements:

> We must then argue provisionally […] that there is a need for a separate governmental institution for every collective good with a unique boundary, so that there can be a match between those who receive the benefits of a collective good and those who pay for it. This match we define as "fiscal equivalence". (Olson, 1969, p. 484)

2 Note that in international river basins, river basin management may also require centralisation when powers are transferred from the national states to international RBOs.

As Oates (1999, p. 1131) puts forward in his essay on fiscal federalism, "regional governments which extend over watersheds" could be one option to internalise externalities. However, he also acknowledges that this might clash with political realities. He points out that in the United States, federal states, which are responsible for water management, founded river compacts to deal with the external effects related to the use of rivers. Irrespective of the specific form that RBOs take, one could argue that RBOs as a type II model of multi-level governance not only represent a means towards implementing fiscal decentralisation, but also even a means towards applying the principle of fiscal equivalence when the RBO ensures that those who benefit from, who pay for, and who decide on water provision and protection coincide.

This raises the question: Under which conditions can the principle of fiscal equivalence be considered to be realised in water resources management? If we consider the provision of high-quality water by ecosystems as the collective good, we could argue that those who use water for productive purposes and who discharge polluted water should pay for these benefits, for example by paying water-extraction or water-pollution fees. RBOs could then use these funds for the continued provision of the collective good. We could thus argue that – at least with respect to water as a collective good – fiscal equivalence entails a provision for earmarking, and that this principle is realised if (enough) water-use and water-pollution fees are available for RBOs to carry out water protection measures. Obviously, earmarking is not uncontested in public finance, as it may produce rigid budgets that are unable to react to spontaneous needs. However, from a sectoral perspective, it provides a way to achieve fiscal equivalence. Depending on the powers as well as its capacities, legitimacy and accountability of the RBO, fiscal equivalence is, of course, not necessarily given.

On the other hand, the introduction of RBOs as a type II multi-level governance arrangement may itself be influenced by overriding type I processes of (fiscal) decentralisation, in which (financial) powers are devolved from higher to lower general-purpose jurisdictions. This relationship also remains largely understudied. For instance, Dinar et al. assume that: "[a]ll other things being equal, we would expect that decentralization in basins located in federal countries is more likely to succeed than in basins located in unitary countries" (Dinar, Kemper, Blomquist, & Kurukulasuriya, 2007, p. 855). In an econometric analysis of 83 cases, they find that "basins in federal countries have scored higher on various decentralization process indicators than basins in countries with unitary regimes" (Dinar et al., 2007, p. 863). Although this finding seems to suggest that federal countries are more conducive towards decentralised water management, it does not strictly elaborate on the relationship of overriding processes of (fiscal) decentralisation and the introduction of RBOs. In particular, this raises the question of how RBOs, as a type II multi-level governance approach, interact with decentralisation processes within the type I framework, and what this implies in terms of financing river basin management.

Regarding fiscal decentralisation specifically, different scenarios are possible. First, the central government could provide sufficient funds for river basin management to RBOs. In this case, there is no reason to expect that fiscal decentralisation might lead to tensions over financial resources. Second, the central government could also be unwilling to directly allocate more funds to river basin management, but grant the power to levy water-extraction and wastewater-discharge fees to RBOs. Then, the case discussed would apply. Third, the central government could be unwilling to directly allocate more funds to river basin

management and, additionally, grant the power to levy water-extraction and wastewater-discharge fees to sub-national general-purpose jurisdictions instead of RBOs. In this scenario, fiscal decentralisation could even be counterproductive to river basin management by weakening the position of RBOs compared to other administrative units operating at the sub-national level. Given that many RBOs are underfunded, tensions about access to financial resources could present a serious problem for the sustainable management of water resources.

In the end, questions about the relation between river basin management and fiscal decentralisation can probably only be answered on a case-specific, empirical basis. Hence, this paper investigates whether fiscal decentralisation supports or counteracts river basin management in Mongolia, thereby contributing a case study to a severely understudied research field.

Mongolia was chosen as a case study since the country has undergone parallel processes of institutionalising RBOs and of fiscal decentralisation in the last decade (Houdret, Dombrowsky, & Horlemann, 2014). Furthermore, from a practical perspective, the paper seeks to explain funding arrangements for RBOs in Mongolia and to identify funding sources for the implementation of measures for a more sustainable water resources management.

In order to answer the overriding research question, the paper asks i) how competencies for various water governance functions between RBOs and other bodies at the sub-national level are formally allocated; ii) what funding arrangements are in place for water-related tasks of RBOs and other sub-national bodies; and iii) how RBOs and other sub-national authorities coordinate or compete for water governance funding, and what this implies for the sustainable use of water resources. The paper delineates the responsibilities of national and various sub-national entities in order to understand to what extent the principles of disentanglement, cooperation, subsidiarity and cooperation are applied in Mongolian water governance. It also analyses the formal funding sources and how the budgets of the sub-national entities responsible for water management are decided upon, in order to assess to what extent the principle of fiscal equivalence is realised.

Section 2 outlines the case study, data sources and methodology. Section 3 gives an overview of the legal and administrative background that determines water management at the basin level, as well as the fiscal decentralisation process in Mongolia. Section 4 introduces the formal responsibilities assigned to RBOs and other sub-national governmental bodies, exploring disentanglement and coordination. Section 5 examines the formal funding sources and arrangements of RBOs and other sub-national entities. Section 6 illustrates how these funding processes play out and impact river basin management in practice, using the example of the Kharaa River Basin. Section 7 concludes the analysis and provides a set of recommendations for policy makers on how to improve funding distribution.

2 Case study, data sources and methodology

This section introduces the case study area (Section 2.1) and discusses the databases and methodologies used to collect and analyse the data for this discussion paper (Section 2.2).

2.1 Case study

Over the past 25 years, Mongolia has passed through a simultaneous political and economic transformation process. In 1990, the country transformed from socialism to a market economy and a parliamentary democracy. Since 1990, decentralisation has been part of Mongolia's reform agenda. However, all decentralisation efforts have been concentrated on the administration, and little effort was made for fiscal decentralisation until 2011 (Lkhagvadorj, 2010). This changed with the 2011 Budget Law, which provided substantial fiscal autonomy to the sub-national governments by allocating block grants and consolidating the funding of social services into local budgets (Lkhagvadorj & Altankhuyag, 2014).

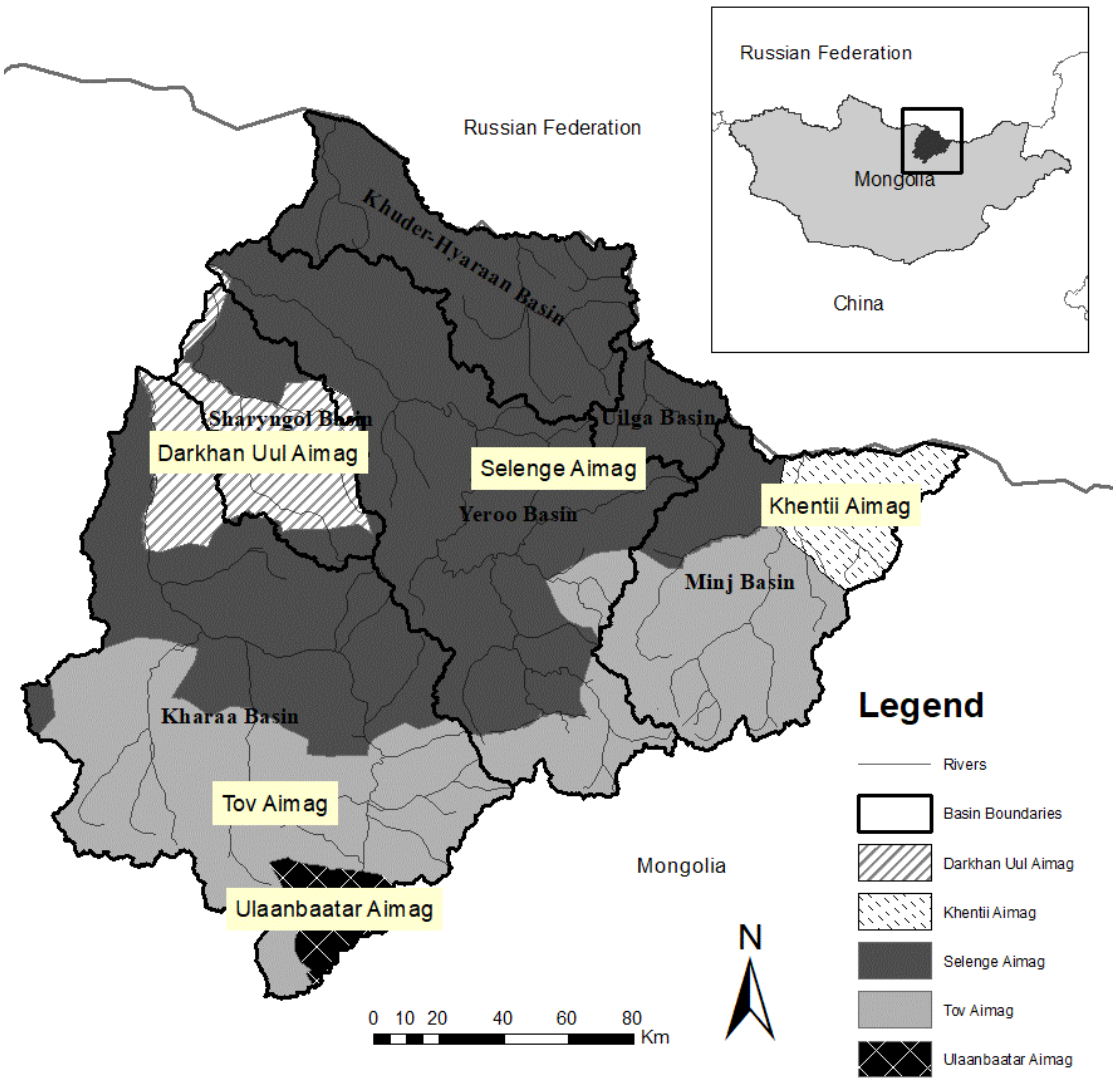
Economic reforms led to a boom of mining activities as well as significant increases in herding, which, together with climate change, have significantly increased pressures on water resources, quantitatively and qualitatively (Karthe, Heldt, Houdret, & Borchardt, 2014). This also led to reforms in the water sector (Dombrowsky, Houdret, & Horlemann, 2014; Horlemann & Dombrowsky, 2012; Houdret et al., 2014). On the one hand, the Mongolian government introduced river basin management through the creation of river basin authorities (RBAs) and river basin councils (RBCs) based on the 2012 Water Law. Although both fall under the broader category of RBOs, RBAs are public administrations at the river basin scale, and RBCs are stakeholder *fora* advising the RBAs (for more details, see Section 4). On the other hand, the Water Law, the Budget Law, as well as 2012 amendments to the Environmental Protection Law, further decentralised natural resource governance through the strengthening of *Aimag* (provincial) environmental agencies (AEAs), whose responsibilities partly overlap with those of the organisations charged with river basin management. Hence, in Mongolia, administrative and fiscal decentralisation to *Aimags* (provinces) and *Soums* (districts), on the one hand, and the decentralisation of water management at the river basin scale, on the other hand, occurred in two parallel processes. Furthermore, based on the Budget Law and other sectoral laws, there are various funding sources for sub-national organisations in charge of water management, that is, RBAs and AEAs. However, since the procedures for assigning and distributing funding are not entirely transparent, it is important to clarify how these procedures play out in practice, as we do in Sections 5 and 6.

In order to study the relationship of river basin management and fiscal decentralisation, a case study on the Kharaa River Basin in Mongolia was conducted. The Kharaa River and Yeroo River basins are located in the central North of Mongolia. The Kharaa basin comprises an area of roughly 15,000 km² with a population of 150,000 people. The Kharaa River is 362 km long and passes through Mongolia's second largest city, Darkhan, before flowing into the Orkhon and then the Selenge River, which ultimately terminates in Russia's Lake Baikal. Water availability is limited by an extreme continental climate and use pressures intensify qualitative and quantitative water scarcity within the basin. Although a predominantly rural region, the river basin has experienced rapid urbanisation in recent years. This trend, coupled with increasing and often unlicensed gold mining activities,

energy production from coal-fired power plants, irrigated agriculture, and upstream deforestation have degraded water quality and water quantity (Hofmann et al., 2015; Karthe et al., 2014). Climate change projections indicate an above average rise in temperatures and evaporation in Mongolia over the coming decades, putting further pressure on water resources.

The Kharaa RBA was first established in 2013. In 2015, it was merged with the neighbouring Yeroo RBA to form the Kharaa-Yeroo RBA. The Kharaa-Yeroo RBA is responsible for the Kharaa-Yeroo River Basin district, which consists of six sub-basins (see Figure 2), all of which contribute to the transboundary Selenge River Basin. The Kharaa Basin to the west cuts across four *Aimags*, namely Darkhan-Uul, Selenge, Töv and Ulaanbaatar City, and a total of 25 *Soums* (Hofmann & Battogtokh, 2017). At the *Aimag* level, AEAs have been reorganised as sub-national agencies under the *Aimag* governors' portfolios since 2013 and are financed through the local budget. Consequently, the Kharaa-Yeroo RBA has to coordinate with the AEAs and the governors of these *Aimags* and the respective *Soums*.

Figure 2: Kharaa-Yeroo River Basin district with administrative units



Source: Own presentation based on Kharaa-Yeroo River Basin Atlas (Hofmann & Battogtokh, 2017)

2.2 Data sources and methodology

In order to study the relation between river basin management and fiscal decentralisation in the Kharaa River Basin, this discussion paper analyses formal responsibilities as well as formal funding sources and budgeting systems of the RBA, AEAs and other sub-national bodies and analyses how this plays out in the Kharaa River Basin. The paper delineates the responsibilities of RBAs, AEAs and other sub-national entities in order to understand to what extent the principles of disentanglement, cooperation, subsidiarity and accountability are applied in Mongolian water governance. It compares the funding sources and budgeting systems of the RBA and AEA to explain *de jure* and *de facto* funding sources and financing arrangements at the basin level and to study to what extent the principle of fiscal equivalence is realised in the Mongolian case. The establishment of the RBC for this basin only took place at the time of writing. Hence, although the paper takes into account the formal functions of RBCs, it cannot yet assess the empirical functioning of the Kharaa-Yeroo RBC.[3]

For the formal responsibilities of funding RBAs, RBCs, AEAs and other sub-national bodies, the 2012 Water Law, the 2012 Environmental Protection Law, the 2011 Budget Law and other relevant laws were identified and consulted. The analysis of the funding arrangement is based on the 2011 Budget Law and an array of additional laws and regulations outlining funding issues related to water governance functions. To the knowledge of the authors, no official English translations of the Mongolian laws exist so far. At present, the authors have access to unofficial translations of the 2012 Water Law into English and German, as well as unofficial translations of sections of a number of other water-related laws. Hence, the Mongolian author took point on the identification and analysis of relevant laws and translated important passages into English. The other co-authors complemented the legal analysis through an additional review of the available translated documents.

In addition to the analysis of legal documents, qualitative and quantitative empirical data were used. Qualitative data collection mainly relied on semi-structured interviews. A total of 18 interviews were conducted by the Mongolian co-author in her native language from January to February 2017 with staff from the Ministry of Environment and Tourism,[4] the Kharaa-Yeroo RBA, the AEAs in Darkhan-Uul and Tov *Aimags*, and the Darkhan-Uul *Aimag* finance and treasury and tax departments (see list of interviews in Appendix 1). The interview partners were selected to represent relevant actors in water governance and were in the process of assigning funds to RBAs and AEAs for the Kharaa River Basin. The semi-structured interview guideline that was jointly developed by the co-authors is reprinted in Appendix 2. Insights gained by all co-authors in several conversations with staff of the Ministry of Environment and Tourism and Kharaa-Yeroo RBA complemented these interviews, as well as discussions at a workshop on 26 September 2017, where initial findings of the paper were presented to relevant stakeholders from the Ministry of Environment and Tourism and the RBA.

Quantitative data was drawn from the approved and executed budgets obtained from the GLASS account website of the Ministry of Environment and Tourism, the Ministry of

3 The functions of AEAs, RBAs and RBCs are more clearly delineated in Section 4.

4 The Ministry of Environment and Green Development was renamed the Ministry of Environment and Tourism after the election of 2016.

Finance, the Kharaa-Yeroo RBA, and the Darkhan-Uul, Tov and Selenge *Aimags* and their environmental agencies. Websites in Mongolian were studied by the Mongolian co-author and relevant information was translated into English. The budget data covers aggregated revenues and expenditures as well as data disaggregated by revenue sources and expenditure items for the 2016 fiscal year.

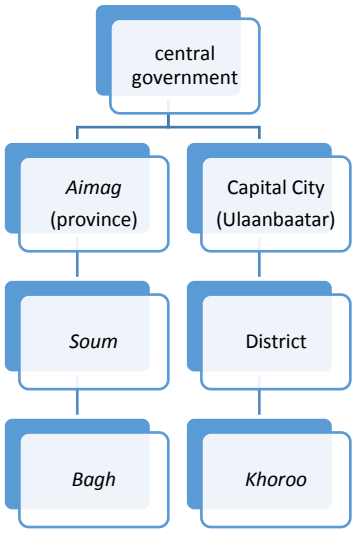
3 Legal and administrative background

Section 3 gives an overview of the administrative background for water management (Section 3.1), introduces relevant laws (Section 3.2) and provides background information on the fiscal decentralisation process in Mongolia (Section 3.3).

3.1 Public administration and water management bodies

Mongolia is generally considered a unitary state; however, it does have three levels of sub-national government. The highest level among these are *Aimags* (provinces) and the so-called Capital City, referring to Ulaanbaatar and the surrounding area. On the next level down are *Soums* (districts) and the so-called Districts as sub-units of the Capital City; on the lowest level are *Baghs* and *Khoroos*, respectively (see Figure 3). This arrangement can be understood to correspond to type I multi-level governance with nested general-purpose jurisdictions. According to the constitution, the administrative and territorial units are organised on the basis of both self-governance and state administration.

Figure 3: The type I jurisdictional structure of Mongolia



Source: Based on the Law on Territorial and Administrative Units of Mongolia

As a predominantly unitary state, the main decision-making power lies at the centre, and mainly de-concentrated powers are given to lower levels of government. The country's main legislative body is the National Parliament (Great *Khural*). It draws up and decides on laws, which are then implemented by various government bodies, including the *Aimag* administrations. Overall, 21 *Aimags* exist. *Aimag*, *Soums* and *Baghs* are led by governors.

*Aimag*s and *Soums* have assemblies (*Khurals*) of elected representatives. *Baghs* have public meetings as means of direct democracy. The fact that *Aimag* and *Soum* assemblies consist of elected representatives implies that Mongolia is moving away from a strict unitary towards a more federal model of statehood.

Responsibilities for water management are shared between the national and sub-national levels. The highest coordination body is the National Water Committee, which is composed of the secretaries of state of various water-using ministries and tasked with harmonising the water-related activities of the relevant ministries. At the ministerial level, the Ministry of Environment and Tourism is formally in charge of water resources. Since 2012, its Department for Policy Implementation has a specific sub-unit for river basin management. At the sub-national level, competencies rest with the RBAs, RBCs, AEAs and various other sub-national bodies. Implementation and enforcement responsibilities are included in the portfolios of governors at all levels, who are supported by state environmental inspectors and environmental rangers.

The 2012 Water Law liquidated the National Water Authority and shifted some of its functions to the RBAs and others to the Ministry of Environment and Tourism as well as to Mongol Os, a state-owned water company. Government resolution 254 of 2012 created RBAs under the Ministry of Environment and Tourism and tasked the Ministry of Finance with defining the budget based on expenditure norms and organisational structure. According to purely hydrological criteria, 16 river basins exist in Mongolia. When delineating the geographical scope of the RBAs, however, the government considered a combination of hydrological, political and economic factors, which led to the formal recognition of 29 distinct basins and corresponding RBAs (Houdret et al., 2014). Eventually, some RBAs were merged, resulting in the 21 RBAs that currently operate within the state (see Appendix 3). RBAs are *inter alia* in charge of formally proposing the establishment of an RBC to the Ministry of Environment and Tourism after consulting with local governments. RBCs are to be composed of water user groups, civil society members and representatives of the local administration. They are multi-party participatory *fora* and mainly responsible for making recommendations to the RBA and monitoring the activities of water users.

Since the administrative decentralisation in 2013, some environmental management functions have shifted to the *Aimag* and the capital city governors' portfolios. Hence, AEAs are operating under the direct supervision of *Aimag* governors and are financed through local budgets. They fulfil a number of water-related functions, as do *Aimag*, *Soum* and *Bagh* governors and related *Khurals* (see Section 4).

3.2 Legal framework for water governance and management

The umbrella law regulating water resources management in Mongolia is the Water Law. It regulates the protection, use, and restoration of water resources and their basin areas. The 2004 Water Law decentralised water resources management by calling for the establishment of RBOs at the sub-national level (Horlemann & Dombrowsky, 2012). The Water Law was revised in 2012 to reflect internationally recognised principles on water resources management, which *inter alia* introduced financial leverage with respect to water use and pollution. The law defined the organisational structure and functions of RBOs, as well as

water-related responsibilities for sub-national government bodies. Other water-related laws include:

- The 1995 Environmental Protection Law, which was amended in 2012. It provides regulations on the protection, optimal use and restoration of natural resources. The areas that it regulates are land and soil, underground resources, water, fauna and air.

- The Water Pollution Law, passed in 2012. It provides regulations on setting water-pollution fees, as well as charging and collecting them. The law defines water polluters and sets standards for their registration. It provides guidance on chargeable items, calculating pollution charges, pollution charge rates, collecting and spending pollution charge revenues, exemptions, payment procedures, reporting and sanctions for infringement. Although the law has been formally approved, it has still not been applied, since important regulations for its functioning (such as those covering the measurement of baselines, e.g.) have yet to be agreed on.

- The Urban Water Supply and Operation of Sewerage Law, which was approved by the National Parliament in 2011. The purpose of the law is to regulate the ownership and operation of the facilities for urban water supply to households, wastewater drainage and sewerage networks.

- The Law Prohibiting Mining in the Land Area drained by River and Natural Water Storage place, as well as Forest Areas,[5] from 2009. This law defines regulations and prohibitions for mining and exploring mineral resources in river basin and forest areas, and for the restoration of nature in these areas.

- The Natural Resource Use Fee Law, which regulates the setting of user fees, the collection of fee revenues, and reporting. It also defines the spending size for environmental protection and restoration activities from user-fee revenues.

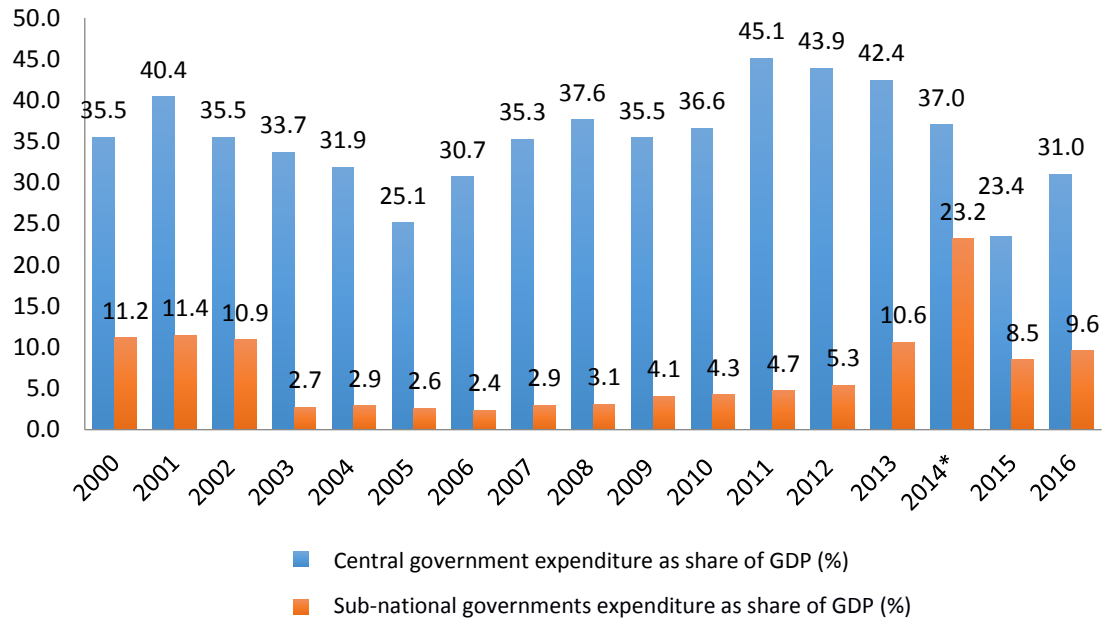
Other laws that are relevant to the financing of river basin management are the aforementioned Budget Law and the Government Special Fund Law. The purpose of the Budget Law is to establish the principles, systems, composition and classification of the budget, to implement special fiscal requirements and to define the authorities, roles and responsibilities of bodies that participate in the budget process. It also regulates relations that arise in connection with budget preparation, budget approval, spending, accounting, reporting and auditing. The Government Special Fund Law defines types of government special funds and regulates the management of revenues and expenditures, as well as reporting and monitoring. Under the portfolio of the Ministry of Environment and Tourism, a Fund for Nature Protection exists, which was renamed the Fund for Environment and Weather in 2017. The Government Special Fund Law defines its revenue sources and spending purposes.

5 Informally called the “Law with the Long Name”.

3.3 Overview on fiscal decentralisation in Mongolia

The transformation reform agenda of 1990 towards a democracy and market economy included a process of fiscal decentralisation. However, the decentralisation process was partly reversed due to numerous issues related to fiscal stability and discipline, that is, the capacity of the government to maintain smooth financial operations and long-term fiscal health. In order to improve fiscal stability and discipline, fiscal decentralisation was partly reversed in 2003 with the adoption of the Public Sector Finance and Management Law and a Single Treasury Account system, as well as by assigning responsibility for social services such as education, health, culture and sports to line ministries. In consequence, public expenditures were recentralised, and the share of sub-national expenditures to GDP fell to 2.7 per cent in 2003 (see Figure 4). A period of poor quality of service provision followed, and local authorities filed several complaints.

Figure 4: Expenditures as share of GDP (%)



Source: Based on data from Ministry of Finance and National Statistical Office of Mongolia (http://www.en.nso.mn/)

In December 2011, Mongolia introduced an important reform of its intergovernmental fiscal relations when the National Parliament enacted a new Budget Law. This law led to considerable decentralisation by revising and integrating the Public Sector Finance and Management Law and the 2002 Budget Law. The new Budget Law addresses previous shortcomings by clearly defining the functions delegated to the *Aimag* and capital city level and by differentiating the functions allocated to local governments (such as those of the capital city, *Aimags* and *Soums*, see Appendix 4) (Lkhagvadorj, 2012). According to the current legislation, the central government is exclusively responsible for defence, foreign policy, social security and justice. The purely local responsibilities financed through a local budget are local administration, pasture management, local public infrastructure, waste management and public areas. All other functions, including water, are shared among different levels of government. In general, funds are allocated to institutions in bulk, not to specific governance functions (i.e. pasture management, local public infrastructure).

As defined in the Budget Law, the Local Development Fund, the Financial Support Transfers and own revenue all finance local functions, whereas Earmarked Transfers finance delegated functions. In particular, the Local Development Fund provides a major opportunity for regional development. It is a block grant, which is allocated to local governments based on a formula consisting of a local development index, population size, population density, remoteness and local tax efforts. It consists of a revenue-sharing transfer from the state budget, which comprises revenues from tax increases and expenditure savings; domestic and foreign grants and donations to support local development; and 50 per cent of all revenues from licence fees to be used for mining and the exploration of mineral resources. The Budget Law also introduced requirements for citizens' participation in decision-making processes in the planning of the Local Development Fund.

Financial Support Transfers are non-earmarked transfers and allocated to fill the gap for basic budget deficits. They finance the recurrent and capital expenditures of local administrations as well as recurrent expenditures for social welfare and environmental protection activities of local governments.

Earmarked Transfers, by contrast, are allocated from the central government to the sub-national arenas to finance specific functions and activities. The total share of transfers in terms of local revenue was about 60 per cent (see Table 1) in 2013 and 2014. Hence, local governments only covered about 40 per cent of their funds from own revenues (e.g. taxes).

Table 1: Local revenue by source in 2013 and 2014

No.		2013		2014	
		Amount (billion MNT*)	% total	Amount (billion MNT)	% total
1	Financial Support Transfer	155.0	8.2	159.2	7.8
2	Local Development Fund	187.47	10.0	284.4	14.0
3	Earmarked Transfer	784.03	41.7	869.43	42.5
4	Subtotal	1,126.5		1,313.03	
4	Own source revenue	755.46		732.03	
5	Total local revenue	1,881.96		2,045.06	
6	Share of total transfers in total local revenues		60.0		64.3

* MNT = Mongolian tugrik

Source: Lkhagvadorj (2012)

Even though the government of Mongolia has implemented a series of reform measures to modify the relations between its national and sub-national administrative bodies towards decentralisation, service delivery and resource allocation are not so advanced. Existing problems include the fact that (i) the assignment of functions is mostly biased towards the central government, (ii) no clear separation of power between executive and legislative bodies exists, and (iii) responsibilities between different levels of government are not clearly delineated (Pfaeffli, Lkhagvadorj, Merat, & Dorj, 2015). In addition, some complexity and duplication of functions persist at the sub-national level that need further reform steps.

4 Formal responsibilities for water management at the river basin and sub-national levels

This section analyses the formal responsibilities of RBAs, RBCs, AEAs and other sub-national government bodies with respect to water management and governance. It starts with a brief overview of the governmental entities covered as well as the water governance functions for which responsibilities are allocated. Then, Section 4.1 analyses the allocation of responsibilities for the most important governance functions in detail. Section 4.2 summarises the main functions of each entity and indicates shared as well as overlapping responsibilities. Section 4.3 discusses these findings.

The bulk of the responsibilities for water management is delineated in water-related and environmental legislation. However, the Budget Law also gives some indication as to how functions are split between the different entities. Broadly, it states that both *Aimags* and *Soums* are responsible for water supply, sewerage, public hygiene and environmental protection, providing no clear division of responsibilities. On top of that, *Aimags* are in charge of drainage systems and environmental rehabilitation, whereas *Soums* are responsible for water services.

The Water Law and other laws spell out a more detailed allocation of water-related responsibilities at the sub-national level. They cover the following entities:

- RBA
- RBC
- AEA
- state environmental inspectors
- *Aimag*, *Soum* and *Bagh* governors
- *Aimag* and *Soum Khurals* and *Bagh* public meetings
- environmental rangers

In the Water Law and related legislation, the authors identified the following water governance functions, according to which they structured the analysis of the allocation of responsibilities in Section 4.1:

- policy- and decision-making
- river basin planning and planning of measures
- data collection and management
- licensing water abstraction and wastewater discharge
- recording issued licences and infractions
- charging water-use, wastewater-discharge and water-pollution fees
- monitoring water use and pollution
- monitoring implementation of laws and programmes
- suspending water licences
- enforcement and imposition of penalties and compensation charges
- implementing plans and measures

Appendix 5 provides a comprehensive overview of all water-related responsibilities of the sub-national administrative bodies mentioned above, structured according to the identified governance functions (including legal sources). Table 2 summarises the information by indicating whether a certain body has a role regarding the respective governance function. As can be seen from Table 2, almost all governance functions involve more than one administrative body, and several functions involve a whole range of actors, hinting at potential overlaps. Non-water-related functions of sub-national administrative entities are excluded from the analysis.

Table 2: Responsibilities of RBAs, RBCs, AEAs and other sub-national bodies

Column: entity Row: function	RBA	RBC	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environ-mental ranger	*Bagh* gover-nor
Policy- and decision-making						X			
River basin planning, planning of measures	X	X							
Data collection and management	X		X		X				
Licensing water use and wastewater discharge	X		X			X	X	X	
Recording licences and infractions	X		X	X			X	X	
Charging water-use, wastewater-discharge and water-pollution fees	X					X		X	
Monitoring water use and pollution	X	X	X	X	X		X	X	X
Monitor implementation of laws and programmes	X	X	X	X		X		X	
Suspending water licences	X	X	X	X	X		X		
Enforcement and imposition of penalties and compensation charges				X			X	X	X
Implementing plans and measures	X	X			X		X	X	X

Source: Authors' own representation, based mainly on the Water Law, Environmental Protection Law and Water Pollution Law

4.1 Responsibilities by governance functions

Policy- and decision-making. The main decision-making organs regarding the implementation of water policy at the sub-national level are the *Aimag* and *Soum* assemblies (*Khurals*). The *Aimag Khural* develops a policy on water supply and sewerage within its territory, while *Aimag* and *Soum Khurals* debate and approve water management plan(s) submitted by governors and RBAs and approve the budgets for water management measures. They decide on protected areas for water resources and set up protected zones. They also approve measures and budgets for environmental measures.

River basin planning and planning of measures. RBAs develop draft river basin management plans (RBMPs) for their respective basin areas according to methodological instructions by the Ministry of Environment and Tourism.[6] As such, they have formal roles in priority setting and strategic planning in the policy cycle. RBCs issue recommendations for the RBMP and are in charge of collecting opinions from the public on the proposed measures.[7] After it has been debated in the *Aimag* and *Soum Khurals*, the Minister of Environment ultimately approves the plan.

RBAs and RBCs may propose certain water management measures. Whereas RBAs define water supply sources and wastewater discharge points and propose water protection areas and irrigation schemes, RBCs propose measures for water storage and use. RBCs may also propose water protection areas.

Data collection and management. RBAs, AEAs and *Aimag* governors explicitly share the task of preparing an annual water inventory, that is, assembling information on the quantity and quality of rivers, lakes and other water bodies, and entering it into a database. AEAs and *Aimag* governors are responsible for organising the annual water inventory in their territory and for submitting their information to the respective RBA or RBAs (if their territory is located in several river basins) and the Ministry of Environment and Tourism. RBAs submit the basin-level data to the ministry. RBAs are also in charge of providing water-related information to the public. Hence, the shared responsibility of preparing the water inventory partly differs in scale: Whereas AEAs and *Aimag* governors are responsible for the water database at the *Aimag* level, the RBAs are responsible for managing a water database within their respective basin area. However, the Water Law is not clear on who collects and analyses which water-related data in the first place or how this task is shared among entities. This is an important factor, though, since the collection and analysis of water-related data require adequately trained personnel, equipment and laboratories and are labour- and cost-intensive.[8]

Licensing water use and wastewater discharge. A clear division of labour exists with respect to decisions on – and licensing of – water uses. At the national level, the Ministry of

6 In practice, the ministry hired consultants for the preparation of the Kharaa RBMP, which is still under preparation; see Section 6.

7 In the Kharaa-Yeroo river basins, an RBC was only established in late 2017; see Section 6.

8 According to the interviews, the main responsibility for data collection is with the Weather and Environmental Analyzing Agency, which provides information to AEAs and RBAs. RBAs and AEAs do not have their own laboratories, but they may take samples and give them accredited laboratories.

Environment and Tourism[9] is supposed to "bring out conclusion" for – that is, decide upon – water licences above 100 m³/day, whereas the RBA decides upon uses from 50 to 100 m³/day and the AEAs upon uses below 50 m³/day. The actual granting of licences is carried out by the respective lower-level organisation: The RBA issues licences above 100 m³/day, the AEA for water uses from 50 to 100 m³/day and the *Soum* governor for water uses below 50 m³/day. In addition, the RBA grants licences for wastewater discharge of more than 50 m³/day based on the ministry's recommendations and makes recommendations for wastewater discharge of up to 50 m³/day. *Soum* governors grant those licences. All issued licences and recommendations are recorded into the respective databases.

Beyond water licences, *Soum* governors conclude contracts on the exploitation of mineral water resources. AEAs issue permissions for drilling boreholes and wells as well as building canals, which they, again, record into the database. According to the Environmental Protection Law, environmental rangers who operate at the *Soum* level can issue licences for the use of natural resources.

Charging water-use, wastewater-discharge and water-pollution fees. According to the Water Law (Art. 8.1), the National Parliament determines water-use and water-pollution fees. The Water Pollution Law (Art. 7.2) states that the national government defines the rate of water-pollution fees for each river basin based on an ecological-economic evaluation. The *Aimag* and the capital city assemblies set the rates for spring-use fees within the limits determined by the Parliament. RBAs furthermore "define the ground" for water-use and water-pollution fees in accordance with the legislation, and environmental rangers impose these fees and monitor payments.[10]

Monitoring water use and pollution. Monitoring water use is within the portfolio of nearly all administrative units, but hardly any provisions on how to coordinate these tasks are given. RBAs monitor potential water resources and water use in the basin area. AEAs are responsible for monitoring water supply, water use, protection and restoration of water sources, as well as sewerage and drainage. The RBCs are responsible for monitoring water users and reporting violations of contracts by water-using entities. They, as well as governors of all levels, are supposed to supervise local businesses and organisations to ensure that they fulfil their requirements regarding environmental protection and restoration. If water users violate regulations regarding water use and wastewater discharge, RBCs can recommend compensation charges for environmental damages to the RBAs. According to the Environmental Protection Law, state environmental inspectors are granted free access to all operations in order to take samples and supervise whether operations comply with environmental regulations. Furthermore, environmental rangers also monitor changes to the natural environment and record them into a database. What exactly monitoring entails, however, is not specified within either the Water Law or the Water Pollution Law. The Environmental Protection Law defines monitoring as "written evaluations based on continual observation, measurement and research" (Art. 10.1), but it fails to mention which properties are supposed to be measured, and which powers of entry the term "observation" entails.

9 In reality, the state-own company, called Mongol Os (Mongolian Water), fulfils this function.

10 The *Aimag* tax agency collects water fees based on the licences granted by RBAs and AEAs.

Monitoring the implementation of laws and programmes. This function is also widely distributed among the various agencies. AEAs and environmental rangers monitor the implementation of water laws, whereas *Aimags* and *Soum Khurals* oversee the implementation of water laws and the water programme. Both RBAs and RBCs monitor the implementation of the RBMP, and RBCs are allowed to propose amendments to the plan if they find the process and results unsatisfactory. They are also charged with informing the public about the progress. State environmental inspectors supervise compliance with environmental legislation.

Enforcement and imposition of penalties and compensation charges. Bagh governors are responsible for the implementation of environmental legislation. Environmental inspectors and environmental rangers can require citizens, businesses and organisations to suspend their activities in case of non-compliance and impose penalties for breaches of environmental legislation. This also extends to compensation charges for unlicensed wastewater discharge or discharge that exceeds agreed upon limitations. Environmental inspectors and *Soum* governors also impose compensation charges for unlicensed pollution. This shows that considerable overlap exists with respect to recommending the suspension of licences, and a high level of coordination seems to be required for terminating them.

Suspending water licences. Regarding the termination of licences, *Aimag* and *Soum* governors have the right to bring temporary injunctions against businesses or organisations with negative environmental impacts. RBCs can also propose a suspension of licences in such cases. RBAs issue recommendations to suspend licences in case of non-compliance with environmental regulations or contractual limits to water abstraction or discharge. They are also allowed to take violators to court and press charges. The RBA's mandate extends to taking the decision to terminate a water-use contract, whereas the actual termination is carried out by the organisation that issued the licence in the first place.

Implementing plans and measures. RBAs monitor the implementation of the RBMPs and are explicitly charged with providing coordination between sectors and local governments in the implementation of the plan. RBCs also monitor the implementation of the plan and are supposed to cooperate with different stakeholder groups to support the implementation of measures. However, it remains unclear how RBAs and RBCs share these tasks.

Aimag, *Soum* and *Bagh* governors, environmental rangers and – to a limited extent – RBAs and RBCs are in charge of implementing water protection and restoration measures. *Aimag* governors also implement measures for rational use, restoration and disaster prevention. Although environmental rangers and RBAs are explicitly required to coordinate regarding water protection and restoration measures, the Water Law makes no mention of *Aimag* governors, who have the same task. RBAs and *Aimag* and *Soum* governors are to cooperate in supporting private initiatives in rainwater harvesting and the building of dams. *Aimag* and *Soum* governors also put up signs for protected areas, while RBCs and *Bagh* governors are to mobilise citizens for water protection activities.

Aimag governors are also responsible for developing the budget required to execute these activities, which is then submitted to *Aimag* assemblies for approval. The laws do not explicitly assign AEAs an implementation mandate, which rests with the *Aimag* and *Soum* governors instead. However, given that the AEA works under the *Aimag* governor, the governor's implementation responsibilities are *de facto* performed by the AEA. Discussions

with officials at the Ministry of Environment and Tourism and Mongolian water experts have shown that these stakeholders consider the RBA to be the main responsible party for ensuring the implementation of the RBMP. According to their description, even though the specific activities might be carried out by other entities (such as local governors or water-using entities), it is ultimately the RBA's task to ensure that the measures described in the RBMP are turned into practice.

4.2 Responsibilities by actors and overlaps

In summary, a whole range of actors are engaged in water governance and management at the sub-national level. The following lists the most important tasks of each actor and indicates where overlap exists.

The most important tasks of RBAs as public water administrations at the river basin scale include:

- drafting an RBMP and planning of certain measures,
- organising a water inventory and managing a database at the basin scale,
- carrying out certain responsibilities in licensing water abstraction and wastewater discharge and calculating fees,
- monitoring water resources and uses,
- making the decision to terminate water-use licences, and
- coordinating and ensuring RBMP implementation and implementing certain water protection measures with environmental rangers and governors.

RBCs are stakeholder *fora* at the river basin scale. According to the Water Law and Government Resolution A/57 of March 2018 (Regulation Regarding the Establishment of River-Basin Multi-Stakeholder Platform Council and Working Rules), RBCs are composed of representatives of local administrations, environmental, water and inspection authorities as well as of water users und scientists. They are tasked with:

- ensuring stakeholder participation in river basin management,
- collecting comments from the public and making recommendations for the RBMP,
- cooperating with other stakeholders in its implementation and evaluating the process as well as the results,
- informing the public about the RBMP and the progress of its implementation,
- assessing the work of the RBA,
- monitoring water users,
- recommending the suspension and termination of water-use licences issued by the RBA to the Ministry of Environment where operations are in conflict with public interests, and
- recommending compensation payments for environmental damages to the RBA when regulations concerning water use and wastewater discharge are not observed.

AEAs as the public environment administration under the *Aimag* governor are responsible for:

- organising a water inventory and database at the *Aimag* level,
- carrying out certain responsibilities in licensing water abstraction, and
- monitoring various water uses and implementation of water laws.

Furthermore, *de facto*, they implement measures on behalf of *Aimag* governors.

State environmental inspectors and environmental rangers are in charge of:

- certain responsibilities in licensing water abstraction and wastewater discharge and imposing fees,
- monitoring water uses, pollution and implementation of laws and programmes,
- requiring entities to suspend their activities in case of negative environmental impacts,
- enforcement and imposing penalties, and
- implementing certain measures.

Aimag and *Soum Khurals* play an important role in:

- developing a policy on water supply and sewerage,
- debating and approving the RBMP and water programmes and monitoring implementation,
- approving the budget, and
- deciding on water protection zones and measures.

Aimag, *Soum* and *Bagh* governors are mainly responsible for:

- monitoring the abidance with laws,
- preparing budgets for water measures,
- ensuring the implementation of measures, and
- bringing temporary injunctions against entities that violate their use contracts.

Thus, overall, a certain division of labour regarding water management is in place between the different sub-national governmental units. It is relatively well defined – but still complex – in terms of deciding on and issuing water licences. In addition, several units explicitly share some responsibilities. However, it remains largely unclear what "sharing" responsibilities entails in practice.

The laws has assigned shared responsibility to:

- RBAs and AEAs in organising a water inventory, albeit at different scales,
- RBAs and environmental rangers in implementing water protection measures, and
- RBAs and governors in supporting private initiatives for rainwater harvesting and building dams.

Particular uncertainty and overlap remains regarding the allocation of responsibilities between:

- RBAs, RBCs, AEAs, governors, inspectors and rangers in monitoring water uses,
- RBAs, RBCs, governors, inspectors and rangers in suspending licences,
- RBAs and RBCs in monitoring and cooperating with stakeholders for the implementation of RBMPs, and
- governors, AEAs, RBAs, RBCs and environmental rangers in implementing water protection measures.

With respect to implementation, it is important to note that governors are formally responsible for implementing water-related legislation, programmes and measures – a task that they *de facto* perform through the AEAs. Interestingly, the latter fact is not explicitly mentioned in the laws. Similarly, RBAs are *de facto* expected to ensure the implementation of the measures delineated in the RBMP, even though the Water Law only mentions very few implementation competencies.

4.3 Discussion

The analysis shows that, in Mongolia, water governance functions are allocated to both type I jurisdiction-based sub-national (AEAs and other *Aimag* and *Soum*) bodies and area-and task-specific type II functional governance entities (RBAs and RBCs). Parallel type I and II multi-level governance arrangements for water management exist in many federal states. For instance, in Germany the main responsibility for water management lies with the federal states; however, so-called river basin communities (*Flussgebietsgemeinschaften*) coordinate their inputs with RBMPs and Programmes of Measures (Petry & Dombrowsky, 2007). As mentioned in Section 1, in the United States, River Basin Compacts exist among federal states. It thus stands to reason that interplay between type I and type II governance arrangements occurs frequently and is not inherently conflictive. However, it seems that in Mongolia, the allocation and differentiation of various water governance functions related to policy-making, policy implementation, operational management and regulation among various water-governing bodies at the *Aimag* and *Soum* levels, on the one hand, and at the river basin level, on the other, remain particularly complex and entangled. Even the pure analysis of the allocation of responsibilities turned out to be a complex undertaking, given that the information is spread over several laws and that the respective legal texts are not always particularly precise or consistent. For non-native researchers, a further challenge consists of the fact that no official English translations of these laws are available. Thus, interpreting the legal basis was by no means a straightforward endeavour.

Overall, a high level of overlap exists in terms of data management, monitoring and law enforcement, and the implementation of measures among various actors. This high level of overlap is not in line with the principle of disentanglement. As mentioned above, although research into resilience assumes that a certain degree of duplication and redundancies enables a governance system to withstand shocks more easily, this perspective nonetheless emphasises the need for coordination among the respective institutions to ensure that overlap is beneficial (Walker & Salt, 2006). These coordination requirements remain largely unfulfilled in the Mongolian case. Although some tasks are specified as shared, the law

provides no guidelines on how precisely sharing should occur. In both regards, significant room for improvement remains towards observing the principle of cooperation.

In terms of the vertical allocation of competencies, the principle of subsidiarity is partly, but also insufficiently, realised. For instance, although there is a clear-cut vertical allocation for deciding on and formally issuing water permits in place, it is questionable whether the highly complex vertical distinction is practical, as it exists between different consumption volumes, but also between who decides on permits and who issues them. The division of labour among *Aimag* and *Soum* governors and assemblies also seems insufficiently spelt out. Thus, considerable room for manoeuvre exists for better realising the principles of disentanglement, cooperation and subsidiarity. It can be argued that the principle of accountability is realised in the sense that *Aimag* and *Soum* governors are accountable to *Aimag* and *Soum Khurals*. Furthermore, formally, RBAs are also held accountable by RBCs (even though only a few RBCs are currently operational in Mongolia). However, there could be issues of cross-accountability between provincial and river basin institutions.

Whether the identified overlaps are caused by institutional oversights, the effects of power relations or some confluence of both cannot be answered within the scope of this paper. It is, however, the focus of further research within a project called STEER, which focusses on issues of coordination and cooperation in water governance.

Overall, our analysis shows that quite a number of improvements are desirable regarding the division of labour in river basin management. However, effective water management is not only a question of the division of labour, but also of the extent to which the respective entities have the financial resources to perform the tasks that have been allocated to them. To shed some light on whether the respective entities in charge have the financial means to perform the tasks assigned to them, Section 5 addresses the formal provisions on funding water management, while Section 6 presents a case study on the Kharaa River Basin.

5 Formal provisions on funding water management

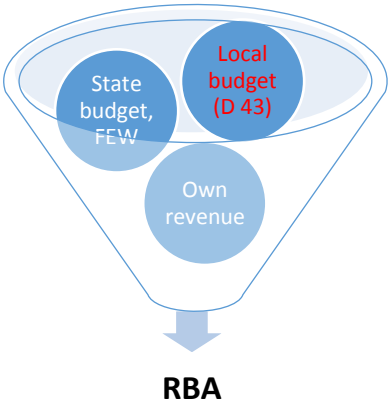
This section analyses the formal funding arrangements for RBAs and AEAs. Section 5.1 outlines the financial resources available for RBAs, Section 5.2 for RBCs and Section 5.3 for AEAs. Section 5.4 then provides a more detailed account of the legal provisions regarding water-resource-use fees as a funding source that is claimed by AEAs and RBAs. Section 5.5 discusses the findings.

5.1 Funding for RBAs

As defined in the Budget Law and the Environmental Protection Law, the RBAs' funding sources are the state budget and their own revenues. State budget revenue sources include royalties and licence fees for mining and exploration, water-pollution fees and taxes. Own revenues comprise, for instance, payments for issued conclusions on water use. In addition, according to the Government Special Fund Law, the Fund for Environment and Weather (FEW) can be an additional funding source for an RBA for the purchase of tools and equipment as well as monitoring activities. Furthermore, Decree 43 states that the earmarked portion of water-resource-use fee revenues shall *inter alia* finance the

implementation of RBMPs, support RBA operations and, among other things, water protection and restoration activities. However, according to the Budget Law, these fees are *Aimag* revenues (see Section 5.3 for further details). In view of these legal provisions, the formal funding sources of RBAs include the state budget, own revenues and (potentially) those parts of the local budget that originate from earmarked water-resource-use fee revenues (see Figure 5).

Figure 5: Formal funding sources of RBAs



Source: Authors

For RBAs, acquiring funds is essentially a five-step process. First, an RBA estimates its expenditure needs based on its organisational structure and legal mandates and submits the estimates to the Ministry of Environment and Tourism. Then, the ministry prepares a budget proposal within the budget constraints approved by the Parliament and submits it to the Ministry of Finance. In a third step, the Ministry of Finance checks and reviews the budget proposal of each ministry and prepares a consolidated central government budget proposal, which includes central government and local budgets. The Ministry of Finance then submits the consolidated budget to the Parliament within the budget schedule defined by the Budget Law. Fourth, the Parliament debates and approves the consolidated budget proposal for the next fiscal year by 15 November of the current fiscal year. Finally, the Ministry of Environment and Tourism allocates funds to RBAs upon the approval of the consolidated budget by the Parliament.

5.2 Funding for RBCs

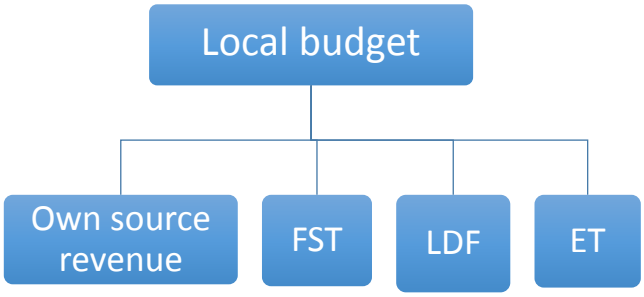
According the Water Law, RBCs are stakeholder *fora* without employed staff members. The Regulation Regarding the Establishment of River-Basin Multi-Stakeholder Platform Council and Working Rules of 2013 (Article 8) provides two potential sources of funding for RBCs. First, RBCs may enter into contracts with local or national bodies to perform specific tasks. Second, RBCs may be funded through international donors and programmes. Hence, RBCs have neither permanent staff nor regular budgets. This regulation was amended in 2018 in Government Resolution A/57 to broaden possible funding sources. Apart from contracts with other governmental bodies such as AEAs and RBAs, funding sources now also include revenue from natural-resource-use fees. As explained in Section 5.1, however, these funds are supposed to go to AEAs, according to the Budget Law. In

consequence, although the revised guidelines list additional funding sources, they do not substantially increase the financial security of RBCs. Regardless of their precarious funding, as discussed in Section 4, RBCs have considerable responsibilities, for example regarding monitoring and enforcement. Given the lack of funding and permanent staff, it remains unclear how they are supposed to perform these duties.

5.3 Funding for environmental protection at the *Aimag* and *Soum* levels and AEAs

The Budget Law defines environmental protection to be a local responsibility that shall be financed through local budgets. In general, local budget revenues consist of own source revenues, Financial Support Transfers, transfers from the Local Development Fund and Earmarked Transfers (see Figure 5). The Budget Law defines local government functions (see Appendix 4) and revenue sources (see Appendix 6) for each administrative level. Water-resource-use fees for industrial uses flow to the *Aimag* and capital city level. Water-use fees for drinking and household water as well as spring use are *Soum* and district revenues.

Figure 6: Formal funding sources of local budgets



Source: Authors

Recurrent sources of financing for environmental protection include own source revenues and Financial Support Transfers. Part of the own source revenues are water-resource-use fees. According to the Natural Resource Use Fee Law, *Aimag* governments shall earmark at minimum 35 per cent of revenue proceeds from water-resource-use fees for industrial use to finance water protection and restoration activities. The Earmarked Transfers finance only the delegated functions for education, health, sports and recreation. Hence, they are not available for environmental protection activities and AEA budgets. The Local Development Funds finance local development programmes, projects and activities. In general, the sub-national governments' investment expenditures – and specifically the *Soum* and district investment expenditures for building the water supply, sewerage and drainage systems as well as water protection and restoration activities – can be financed by the Local Development Fund of the respective jurisdiction.

The AEA is an agency under the *Aimag* governor, and it is thus funded by the provincial budget. Based on the above, recurrent expenditures of the AEAs are financed from the local government's own source revenues, Financial Support Transfers and the Local Development Fund.

In terms of budgeting, the fiscal system of Mongolia is based on a layer cake model, with a strict vertical hierarchical relationship among different government levels (Lkhagvadorj, 2010). Consequently, the *Aimag* governor develops an *Aimag* budget proposal and submits it to the Ministry of Finance. The *Aimag* revenue and expenditure estimates are reviewed and adjusted by the ministry. Based on the review, the Ministry of Finance calculates the Financial Support Transfer to each *Aimag*. The Ministry of Finance also allocates the revenue-sharing transfer or Local Development Fund to each *Aimag* by using a specific formula, and then the *Aimags* allocate these funds to the *Soum* level in a similar procedure. *Aimag* budget proposals are prepared in accordance with recommendations made by the Ministry of Finance and submitted to the *Aimag* assembly. The assembly then debates and approves the budget for the next fiscal year by 5 December of the current fiscal year.

Within the *Aimag*, the AEA estimates its expenditure needs based on its responsibilities and organisational structure, which include its recurrent expenses and those for environmental protection and restoration activities. In practice, the estimated budget expenditures of an AEA are usually reduced by the Ministry of Finance.

5.4 Provisions on water-resource-use fees

The above shows that, in principle, RBAs receive state finance and AEAs receive local finance. However, both RBAs and AEAs and – after the regulation was amended in 2018 – RBCs as well expect to be able to draw on water-use fees for their budgets. According to our interviews, this has led to competition and a certain level of mistrust between RBAs and AEAs. Therefore, the legal provisions on water-resource-use fees (or water-use fees) are discussed below in more detail.

It turns out that water-use fees are referred to in several laws, including the Environmental Protection Law, the Budget Law, the Water Law, the Natural Resource Use Fees Law and the Government Special Funds Law, and that these various laws do not seem to be fully consistent (see also Table 3).

Table 3: Synopsis of current revenue flows from water services		
Law	Sources of funding for activities	Revenue flows
Budget Law	Environmental protection is financed through local budgets that consist of own source revenues, Financial Support Transfers, Local Development Fund and Earmarked Transfers	Water-resource-use fees for industrial use are *Aimag* revenue sources
Environmental Protection Law	Protection and restoration of natural resources are financed through state and local budgets	Natural-resource-use fee proceeds are local revenue. Compensations for environmental damages flow to the Fund for Environment and Weather
Water Law	*Aimag* governors finance water protection and restoration activities.	
Natural Resource Use Fee Law	At minimum, 35 per cent of all water-resource-use fee revenues are spent on water protection and restoration activities	
Government Special Fund Law	Purchase of tools and equipment for monitoring the implementation of environmental protection laws, etc., is financed by the Fund for Environment and Weather	Proceeds from water-pollution fees, tourism licence fees in protected areas, fines for environmental damages and earmarked portion of natural-resource-use fee revenues defined by Natural Resource Use Fee Law flow into the Fund for Environment and Weather
Decree 43	Earmarked portion of water-resource-use fee revenues is spent on: water inventory, innovating and maintaining the sewerage system and drinking-water supply, purchase of equipment and tools for water monitoring and analysing, the implementation of RBMPs, supporting the RBA's operations, implementation of water laws and water accumulation for river basin area, etc.	
Resolution A/57	Article 8.4.1 of amended regulation lists revenue from water-resource-use fees as possible funding source of RBC operations	
Source: Authors' own representation		

As defined by the Natural Resource Use Fee Law, water-resource-use fees shall be charged for drinking water, household uses, manufacturing and mining uses, and spring use for heating, medical treatments, production and services. The law states that, at minimum, 35 per cent of the revenue from water-resource-use fees are to be allocated to water protection and restoration activities.

The Budget Law, which is the base law for fiscal relations, determines that water-resource-use fees for industrial use are considered *Aimag* revenues and that household and spring-water-use fees are *Soum* revenues.

The Environmental Protection Law purports that revenues of the natural-resource-use fees shall be collected and subsumed into the local budget. Furthermore, revenues from compensations for environmental damages shall be collected into the Fund for Environment and Weather. The latter include damages to forests, animals, herbs, water, soil, underground and land (Art. 49).

As stated in the Government Special Fund Law, the Fund for Environment and Weather is a special government fund at the national level. Its revenue sources include the state budget,

donations and grants from national and international agents, and government loans from international organisations and foreign countries. Other revenue sources according to this law include licence-fee revenues from tourism in special protected areas and the 35 per cent of natural-resource-use fee revenues that the Natural Resource Use Fee Law demands be allocated for water protection activities. Revenues from water-pollution fees as well as fines for environmental damages also contribute to the Fund for Environment and Weather, as do revenues from sales of confiscated items for infringements of the Environmental Protection Law.

The Fund for Environment and Weather provides financing for research and development on environmental concerns, subsidises innovations, supports environmental protection and restoration, and covers the costs of national conferences for environmental protection. The fund also finances the purchase of tools and equipment for environmental protection and monitoring, as well as rewards for personal achievements on environmental protection. It covers disaster prevention activities, monitoring of the implementation of environmental protection laws, ecological education, rewards for detecting law violations and expenditures for laboratory analysis for environmental crimes. Money from the fund is allocated by the Ministry of Environment and Tourism.

Government Decree 43 of 2014 approved the Regulation on Collecting, Spending and Reporting the Portion of Natural Resource Use Fee Revenues. The regulation states that 35 per cent of the water-resource-use fee revenues shall be spent on the water inventory, on water resource research and exploration, and on innovations for wastewater treatment. They are also supposed to cover the setting of water metres, renovating and maintaining the sewage system and drinking-water supply, and the purchase of equipment and tools for analysing and monitoring water. Other activities funded by these revenues include improving wastewater drainage zones, enforcing water programmes, laws and bylaws, putting up signs at protected areas and sanitary zones, and implementing RBMPs. Revenues are further supposed to support RBA operations, improvements to public participation, and the implementation of environmental protection and restoration, as well as rainwater harvesting for the river basin area.

Government Resolution A/57 of 2018 approved the amendments to the regulation covering the establishment and operations of RBCs. One of the several amendments that broadens the possible funding sources of RBCs refers to revenues from water-resource-use fees.

Hence, in summary:

- Budget Law and Environmental Protection Law: Water-resource-use fees are local revenue sources (earmarking is not mentioned).
- Natural Resource Use Fee Law: A minimum of 35 per cent of water-resource-use fee revenues shall be spent on water protection and restoration activities.
- Government Special Fund Law: The earmarked portion of natural-resource-use fee proceeds is a revenue source for the Fund for Environment and Weather.
- Decree 43: The earmarked portion of water-resource-use fee revenues shall *inter alia* be spent on the implementation of the RBMPs and supporting RBA operations.
- Resolution A/57: The earmarked portion of water-resource-use fees provides a possible funding source for RBCs.

Therefore, the Government Special Fund Law creates a conflict with the Budget Law and the Environmental Protection Law, in the sense that the Government Special Fund Law mentions the earmarked portion of water-use fees as a potential source for the Fund for Environment and Weather, although these are supposed to flow into local budgets. Decree 43 and Resolution A/57 generate a conflict with the Budget Law and Environmental Protection Law, since, according to these documents, water-use fees can be used for RBA and RBC operations, whereas, according to the Budget Law, they are *Aimag* revenue. However, the Budget Law is the base law in fiscal relations. Therefore, to our understanding, it supersedes Decree 43 and Resolution A/57; the Budget Law also prohibits the voluntary allocation of natural-resource-use fees to entities outside the *Aimag*, such as RBAs.

Beyond the scope of this section, it might be of interest regarding future funding arrangements that water-pollution fees were introduced in Mongolia on the basis of the Water Pollution Fee Law of 2012. Water-pollution fees shall flow into the Fund for Environment and Weather and, hence, are part of the national budget. So far, water-pollution fees have not yet been implemented, as the National Parliament is currently debating bylaws to the Water Pollution Fee Law, and methodologies for calculating these fees (personal communication with Head of Policy, Ministry of Environment and Tourism, September 2017).

5.5 Discussion

In terms of financing water governance tasks, broadly spoken, RBAs are financed through state (national) budgets and AEAs by local budgets. RBCs do not receive regular state funding.

Uncertainties exist relating to water-use fees: Industrial-water-use fees flow into *Aimag* budgets, and household- and spring-water-use fees into *Soum* budgets; 35 per cent of water- (and other natural-resource) use fees are to be earmarked for environmental protection. However, the legal basis for the use of water-use fees is not fully clear. According to the Budget Law and the Environmental Protection Law, these are *Aimag* (and *Soum*) revenues. However, the Government Special Fund Law creates a conflict with the Budget Law and the Environmental Protection Law, in the sense that the Government Special Fund Law mentions the earmarked portion of water-use fees as a source for the national-level Fund for Environment and Weather. Decree 43 and Resolution A/57 potentially contradict the Budget Law and Environmental Protection Law, since they consider water-use fees as possible funding sources for RBOs, whereas according to the Budget Law, they are *Aimag* revenues. Once operationalised, water-pollution fees will flow into the national-level Fund for Environment and Weather.

These regulations – the flow of pollution fees to the national level as well as low earmarking, and the flow of water-use fees to *Aimags* – imply that water-use and water-pollution fees are not directly available for RBAs or RBCs. This, however, also points to the fact that the principle of fiscal equivalence cannot be considered fully realised in water resources management, as it asks for a congruence of those who benefit from, who pay for and, ideally, who decide upon collective goods. In fact, one way to realise fiscal equivalence could be to make (enough) water-use and water-pollution fees available for RBAs and RBCs and related protection measures, and to ensure that RBCs – as the relevant stakeholder *fora* – decide on their uses for water protection measures.

Although Section 5 has shed some light on the formal funding arrangements for RBAs and AEAs as well as uncertainties, it has not yet assessed whether these funds are sufficient to fulfil the tasks allocated to them. This is studied in Section 6 with the example of Kharaa River Basin. With respect to RBCs, however, we can already conclude that it is questionable as to how they are supposed to fulfil their tasks if they do not receive regular government funding.

6 Implications for funding river basin management: the case of the Kharaa Basin

This section analyses the funding of river basin management in practice, using the case of the Kharaa Basin. Section 6.1 explains the establishment and composition of the RBA, the RBC and the AEAs in the Kharaa-Yeroo River Basin district and elaborates upon the tasks they fulfil, according to the interviews conducted. Sections 6.2 and 6.3 investigate the *de facto* funding arrangements in 2016 for the Kharaa-Yeroo RBA and the Darkhan-Uul AEA, respectively. Section 6.4 discusses how the lack of funds and overlap in responsibilities have affected water management in the basins and presents initial attempts by the actors involved to deal with these issues.

6.1 Composition and tasks performed by the RBA and AEAs

In 2013, the Kharaa and Yeroo RBAs were established separately in response to government Decree 254 of 2012. However, in 2015, the two RBAs were integrated into the Kharaa-Yeroo RBA by Resolution 102 of the Ministry of Environment and Tourism. The Kharaa-Yeroo RBA has 11 staff members distributed over three departments: water management planning, water-use regulation, and water information and monitoring evaluation.

According to the interviews – and in line with its mandate – the RBA brings out conclusions for water use of 50 to 100 m^3/day, grants licences for water uses that exceed 100 m^3/day and enters into contracts with licensed water users.

Although RBAs are formally in charge of developing a draft RBMP, in practice, the Ministry of Environment and Tourism took the lead in recruiting a consulting team and providing funds for the development of the RBMP for the Kharaa Basin. The Yeroo RBMP was developed by the NGO Mongolian Water Forum and approved by the Ministry of Environment and Tourism in 2016. For the Kharaa plan, the ministry recruited a consulting team in 2015 from the local branch of the Agriculture University of Ulaanbaatar, which is located in the Darkhan-Uul *Aimag*, to develop the plan with input from the Kharaa-Yeroo RBA. However, according to RBA staff, they had hardly been involved in the preparation process. The consulting team reportedly organised a workshop in 2015 to discuss the draft plan with participants from the Darkhan-Uul *Aimag* governor's office, the Department of Development Policy of the *Aimag*, the Professional Inspection Agency, the Emergency Agency, the AEA, the Weather and Environment Analysing Agency and the *Soum* governor's office, but, to our knowledge, no participants from the RBA. The Kharaa draft plan was discussed and confirmed by the Darkhan-Uul *Aimag* assembly in March 2015. It was also presented to the chairs of the Tov and Selenge *Khurals*, but they had not yet

confirmed the plan. Still, it was submitted to – and subsequently reviewed by – the Ministry of Environment and Tourism. The Ministry provided a list of comments and a revised version was prepared. Although a team of German and Mongolian researchers who supported the development of the RBMP under the Integrated Water Resources Management in Central Asia – Model Region Mongolia (MoMo) project attempted to bring the consultants and RBA staff together, and to feed-in scientific results, little progress was made in improving the plan. In September 2017, the Ministry of Environment and Tourism decided that the draft plan did not meet its requirements and charged a new consultant with revising the draft plan with financial support from the MoMo project. Overall, it has become clear that the RBA is hardly in a position to prepare a draft RBMP on its own, in terms of staff capacities and financial resources, at this point in time.

The Kharaa-Yeroo RBA also postponed the establishment of the RBC for a long time because no government funding is available for RBCs. According to a consultancy conducted for the 2030 Water Resources Group in Mongolia (FreshThoughtsConsulting, 2017) as well as our own conversations with Mongolian partners, RBCs so far do not receive state funding and, where they exist, they rely exclusively on foreign donors or private-sector donations. In October 2017, a constitutional meeting of the Kharaa-Yeroo RBC was financed by the MoMo project, and in December 2017, the Ministry of Environment and Tourism officially confirmed the Kharaa-Yeroo RBC. However, it is still unclear how RBC meetings will be financed after the MoMo project terminates in September 2018.[11]

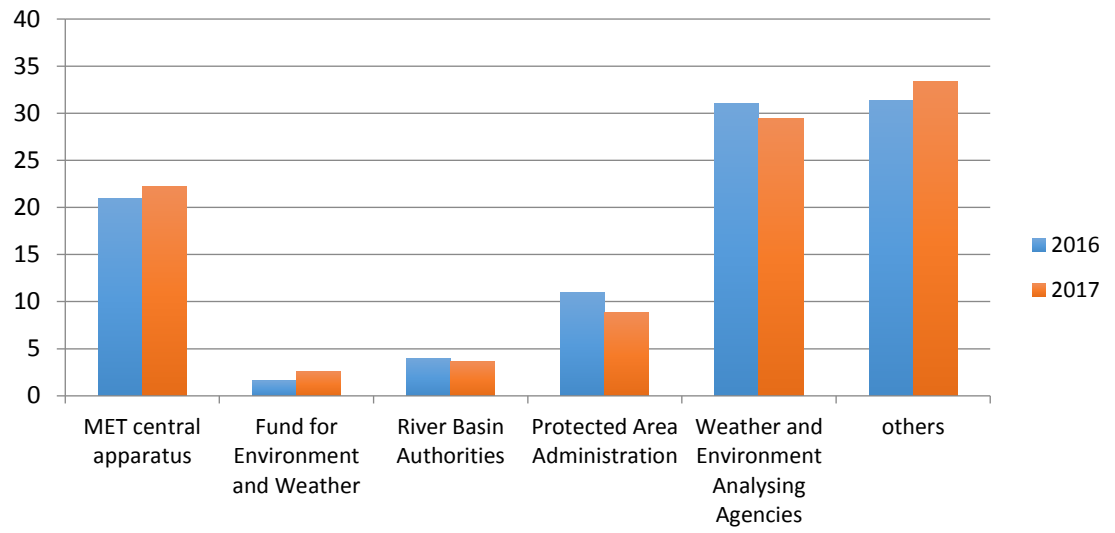
AEAs have been reorganised as sub-national agencies under the *Aimag* governors' portfolios since 2013 and are financed through the local budget. The Darkhan-Uul AEA has 15 staff members. According to the interviews, the AEA develops and implements a water sub-programme in accordance with the National Water Programme. In addition, other *Aimag* agencies perform various tasks related to water. For instance, the *Aimag* health authority monitors drinking water in urban areas. The *Aimag* Weather and Environment Analysing Agency monitors water levels and the Professional Inspection Agency as well as the RBA control water use and pollution.

6.2 Funding arrangements for the Kharaa-Yeroo RBA in 2016 and 2017

As mentioned in Section 5, RBAs are mainly state-funded. Figure 7 shows the budget composition for the Ministry of Environment and Tourism for fiscal years 2016 and 2017. A breakdown of absolute numbers and staff per organisation is provided in Appendix 7. The total budget of the ministry comprised MNT 57.4 billion in 2016 (about EUR 20 million) and increased to MNT 71.6 billion in 2017 (almost EUR 25 million). Within this sum, the aggregated budget for RBAs accounted for MNT 2.3 billion, which amounted to only 4 per cent of the total budget of the ministry in 2016 (roughly EUR 800,000). A breakdown of the approved budget in 2017 for all 21 Mongolian RBAs for the year 2017 is provided in Appendix 3.

11 The heavy involvement of the MoMo project in the development of the plan and the establishment of the RBC begs the question whether this is indeed a task that a transdisciplinary research project should fulfil, and whether such involvement is truly conducive to a sustainable process. This illustrates a need to re-examine the relationship between transdisciplinary science and development cooperation, which exceeds the scope of this paper, but marks an important area of future research.

Figure 7: The composition of the Ministry of Environment and Tourism budget, 2016 and 2017 (%)



Source: Based on data from Appendix 7

The revenues and expenditures for the Kharaa-Yeroo RBA in 2016 are presented in Table 4. Almost all revenues for the Kharaa-Yeroo RBA – MNT 138 million (EUR 50,000) – came from the state budget. In addition, the Kharaa-Yeroo RBA generated MNT 1.47 million in own revenues (EUR 500), which, however, were subsumed into the state budget and therefore not available to the RBA.[12] Furthermore, the Kharaa-Yeroo RBA saved MNT 11.5 million from salaries (EUR 4,000) and social benefits that were also transferred to the Ministry of Finance. It turns out that the spending rules for revenues generated from own activities and for savings of the approved budget are not clear, and the Ministry of Finance makes decisions regarding these funds on an ad hoc basis. Thus, although in theory, own revenues represent one funding source for RBAs, they actually have little freedom in planning their activities, as the Ministry of Finance takes all decisions related to the amount of budget revenues and expenditures.

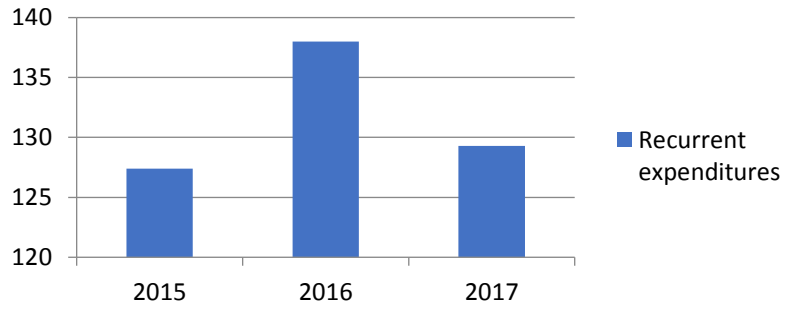
12 The Kharaa-Yeroo RBA generated MNT 35.7 million in own revenues from payments for issued recommendations on water use in 2015 (EUR 12,400).

Table 4: The Kharaa-Yeroo RBA budget for 2016 (in MNT)		
Description	**Planned**	**Executed**
Revenue sources		
State budget	138,009,100.0	138,009,100.0
Own revenue	1,470,000.0	Mobilised by Ministry of Finance
Total revenues	**139,479,100.0**	
Total expenditure and net borrowing	**138,009,100.0**	
Recurrent expenditures	**138,009,100.0**	**126,549,791.0**
Expenditures in goods and services	*127,556,400.0*	*116,621,091.0*
Basic salary and bonuses	92,454,100.0	87,239,724.0
Social insurance fees paid by employer	10,169,900.0	9,459,288.0
Office renting	12,200,100.0	7,151,964.0
Expenditure on provisions, goods and services	7,599,000.0	7,598,825.0
Expenditure by normative	720,000.0	720,000.0
Furniture and routine maintenance	187,000.0	187,000.0
Expenditure for guests and local trips	3,032,400.0	3,032,400.0
Payments for received services	320,000.0	217,940.0
Expenditures for other goods and services	873,900.0	1,013,950.0
Recurrent transfers	*10,452,700.0*	*9,928,700.0*
Note: MNT 11,459,300.0 were transferred to the Ministry of Environment and Tourism account.		
Source: Accessed in January 2017 from Ministry of Finance (https://www.shilendans.gov.mn/org)		

Table 4 shows that the highest level of executed recurrent expenditures in goods and services are for salaries and social benefits, accounting for about 76 per cent. The second-largest block of costs relates to office space, accounting for about 6 per cent. Only about 2.6 per cent of the executed expenditures in goods and services were available for field trips. This means the allocation of funds to RBAs is mostly limited to covering fixed costs and not task-based. Thus, RBAs are essentially assigned unfunded mandates for monitoring water resources and uses, for preparing the RBMP and coordinating its implementation, or for the implementation of water protection measures. In future research, the reasons for this low level of funding should be further explored.

Figure 8 illustrates the actual expenditure trends for the Kharaa-Yeroo RBA. The expenditures of the Kharaa-Yeroo RBA were MNT 127.4 million (EUR 44,000) in the 2015 fiscal year, increased to MNT 138 million (EUR 47,700) in the 2016 fiscal year but then decreased to 129.3 million (EUR 44,7000) in the 2017 fiscal year. This shows that expenditures of the RBA fluctuate with each fiscal year, meaning that long-term planning is difficult.

Figure 8: The Kharaa-Yeroo RBA expenditures (in million MNT)

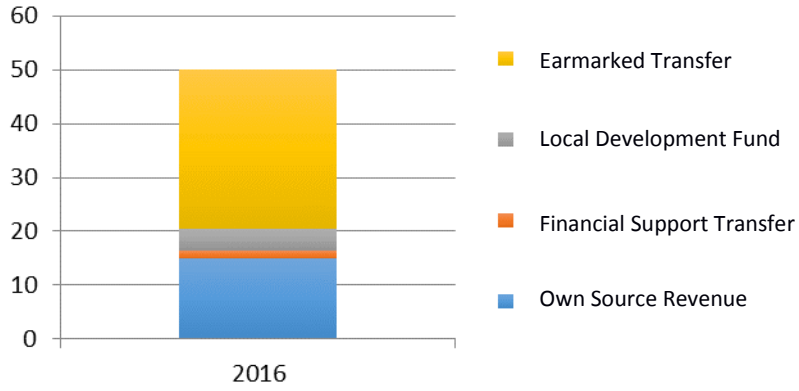


Source: Data from the Ministry of Finance (https://www.shilendans.gov.mn/org)

6.3 Funding arrangements for the Darkhan-Uul *Aimag* and its AEA in 2016/2017

The composition of all revenue sources for the Darkhan-Uul *Aimag* for fiscal year 2016 is presented in Figure 9. The Darkhan-Uul *Aimag*'s total revenues reached MNT 50 billion (EUR 17 million). Earmarked Transfers constituted the highest share. The local government's own revenues came to MNT 16.2 billion in tax and non-tax revenues (EUR 5.6 million), or 29.8 per cent of total revenues. The Local Development Fund amounted to MNT 4.2 billion (EUR 1.45 million) and Financial Support Transfers reached MNT 1.6 billion (EUR 550,000).

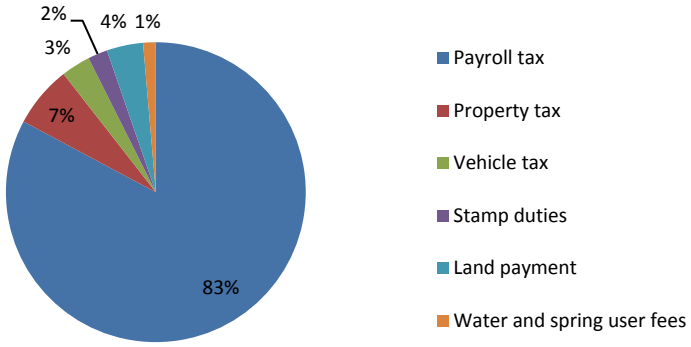
Figure 9: Composition of estimated revenues for the Darkhan-Uul *Aimag* (in billion MNT)



Source: Authors' own calculations based on data from the Ministry of Finance (https://mof.gov.mn/)

Taking a closer look at the *Aimag*'s own source revenues, Figure 10 shows that the payroll tax generates the highest portion of *Aimag* revenues, accounting for 83 per cent of total own source revenues. Water-resource-use fee revenues accounted for MNT 225 million (EUR 78,000) in nominal terms, and about 1 per cent of total own source revenues. Still, the water-use fee revenues generated about 92 per cent of total natural-resource-use fee revenue proceeds for the Darkhan-Uul *Aimag* for the 2016 fiscal year. Although 35 per cent of water-use fees are supposed to be earmarked, according to the interviews, *de facto* the revenue proceeds from water-resource-use fees were not earmarked.

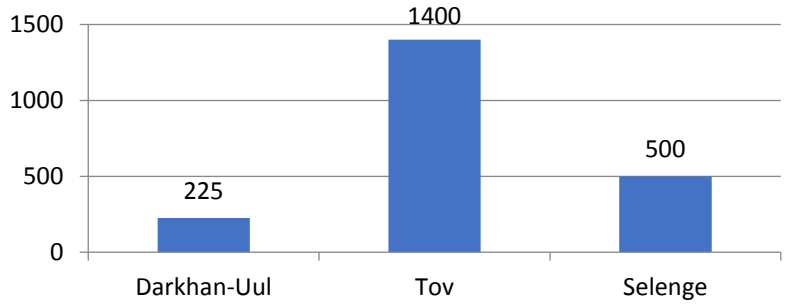
Figure 10: The Darkhan-Uul *Aimag* tax revenue for 2016 (%)



Source: Authors calculation based on data from the Ministry of Finance (https://www.shilendans.gov.mn/org)

Figure 11 compares the revenue proceeds from water-resource-use fees for the Darkhan-Uul, Tov and Selenge *Aimags* in 2016. It shows that, by far, the highest revenues from water-use fees were generated in the Tov *Aimag*. The capacity of an *Aimag* to generate water-resource-use fee revenues largely depends on the development of the mining industry in the respective jurisdiction.

Figure 11: The proceeds of the water-resources-use fee by *Aimag* for the 2016 fiscal year (in million MNT)



Source: Authors' own calculations based on data from the Ministry of Finance (https://www.shilendans.gov.mn/org)

The Darkhan-Uul AEA budget is shown in Table 5. The Darkhan-Uul AEA's total planned funding was MNT 655.5 million (roughly EUR 227,000); however, the actual execution only amounted to revenues of MNT 369.6 million (EUR 128,000). The reasons for the gap would have to be further explored.

Table 5: The Darkhan-Uul AEA budget for 2016 (in MNT)		
	Planned	**Executed**
Revenue sources		
Total revenue	**655,461,700.0**	**369,618,106.0**
Recurrent finance from local budget	360,939,900.0	369,528,749.0
Medical insurance fund		29,357.0
Revenue of own activities		60,000.0
Previous year-end balance	294,521,800.0	
Total expenditure	**655,461,700.0**	**369,618,106.0**
Recurrent expenditures	655,461,700.0	369,618,106.0
Expenditure on goods and services	643,142,500.0	356,499,141.6
Basic salary and bonuses	97,984,500.0	97,908,027.0
Social insurance fees paid by employer	10,978,300.0	10,917,206.2
Office renting	13,804,000.0	13,697,325.0
Expenditure on provisions, goods and services	7,327,300.0	7,271,173.4
Furniture and routine maintenance	1,874,900.0	1,838,000.0
Expenditure for guests and local trips	814,000.0	788,000.0
Payments for received services*	509,909,500.0	223,629,410.0
Expenditures for other goods and services	450,000.0	450,000.0
Recurrent transfers	12,319,200.0	13,118,964.5
Ending balance of receivables from other organisations and persons		18,690,000.0

* The payments for received services corresponds to the spending for environment protection and restoration activities.
Source: Accessed in January 2017 from the Ministry of Finance (https://www.shilendans.gov.mn/org)

For the Darkhan-Uul AEA, the highest expenditures in 2016 were for environmental protection and restoration activities. These expenses reached a total of MNT 223.6 million (61 per cent, EUR 77,400). The second most important expenditure related to salaries and social benefits, accounting for MNT 121.9 million (33 per cent, EUR 42,200).

The list of environmental protection and restoration activities and projects financed through the local budget for each fiscal year is approved as an appendix to the *Aimag* budget. Even though the expenditures for environmental protection and restoration activities were comparatively high, most funds were spent on a model sub-district project, improving green areas of the sub-districts by planting trees and furnishing streets. However, no water-related activities were financed in the 2016 fiscal year. The Darkhan-Uul AEA reportedly managed to furnish two to three springs and its catchment areas with the help of so-called environmental co-operatives (civil society groups) in 2016.

Outside the AEA budget indicated in Table 5, the Darkhan-Uul *Aimag* allocated a total of MNT 24.6 million (EUR 8,500) to environmental protection activities, of which MNT 6.5 million (EUR 2,250) were dedicated to drinking-water projects. These were financed by Local Development Funds.

6.4 Competition for funding and initial modes of cooperation

The previous sections show that the funds allocated to RBAs only cover fixed costs, and that RBAs are essentially assigned unfunded mandates for planning and monitoring water protection and restoration in basin areas. *Aimags*, including AEAs, on the other hand, have somewhat higher budgets, but these tend to be dedicated to funding other, more strictly development-oriented measures within the *Aimag*.

Still, according to the Water Law, RBAs and AEAs are explicitly supposed to organise at least one task jointly, which is the annual water inventory. However, there are no rules to allocate and finance this shared responsibility. This has led both to competition but partly also to initial modes of cooperation between the Kharaa-Yeroo RBA, AEAs and other *Aimag* agencies in the basin.

In terms of competition, inconsistent legal provisions regarding water-use fees, in particular, have raised expectations at RBAs that they could access parts of these funds. However, given that the Budget Law allocates these fees to the *Aimag* level, the RBAs' financial aspirations compete with those of the AEAs, which tends to make collaboration more difficult. Now that Government Resolution A/57 has listed revenues from natural-resource-use fees as a possible funding source for RBCs as well, yet another possible competitor for these funds has been added. However, it is too early to tell whether and how this will affect cooperation among RBCs, RBAs and AEAs.

Regarding cooperation between RBAs and AEAs, evidence from the case study shows that financial competition does not necessarily impede cooperation. As reflected in the Selenge *Aimag* budget and reported by the Kharaa-Yeroo RBA, the Kharaa-Yeroo RBA and the Selenge AEA jointly organised a water inventory that is financed through the local budget in the order of MNT 18 million (EUR 6,000) for the area covered by the Selenge *Aimag* in 2016. The Darkhan-Uul and Tov *Aimags* did not organise water inventories in 2016 because of issues with funding and mutual understanding. As mentioned above, the Darkhan-Uul *Aimag* assembly focussed on development projects instead of water protection and restoration activities.

However, for 2017, the RBA managed to negotiate various Memorandums of Understanding. In fact, the Kharaa-Yeroo RBA signed a Memorandum of Understanding with the Darkhan-Uul AEA. Based on the Memorandum of Understanding, the two agencies developed a joint plan for water management activities for 2017. As mentioned in various interviews, the Kharaa-Yeroo RBA also signed Memorandums of Understanding with the *Aimag* Professional Inspection Agency and the Weather and Environment Analysing Agency. However, these Memorandums of Understanding do not define the allocation of finance for shared or overlapping responsibilities at the basin level. They do illustrate, however, that coordination is possible among the different agencies, and that negotiation processes can mitigate the effects of legal uncertainty and overlap to some extent.

Furthermore, according to the interviews conducted, the Minister of Environment signed performance contracts with *Aimag* governors on environmental protection and restoration in 2017. However, the enforcement of these contracts is difficult because they were signed after the approval of the local budget. The Kharaa-Yeroo RBA was not informed about the content of the contracts.

The examples mentioned above show that certain coordination mechanisms have been put in place between *Aimag* bodies and the RBA. However, they can certainly not fully solve the issue of unclear task assignments and are hardly capable of addressing insufficient funding for RBAs. Furthermore, such processes themselves present a drain on already low human and financial resources.

7 Conclusions and recommendations

This paper sought to answer the overriding question of whether fiscal decentralisation supports or counteracts the funding of river basin management in Mongolia. Since 2011/2012, Mongolia has experienced parallel processes of an increased fiscal and administrative decentralisation and the introduction of RBAs and RBCs to serve as more decentralised agencies for the sustainable management of water resources. Therefore, the paper investigated the formal assignment of responsibilities and the formal funding arrangements for water management at the river basin scale, on the one hand, and at the level of provinces (*Aimags*) and districts (*Soums*), on the other. It furthermore analysed the actual allocation of funds and how RBOs and other sub-national authorities coordinate or compete for water governance funding in the Kharaa River Basin. Finally, it scrutinised whether the *de facto* funding arrangements empower RBOs and sub-national governance bodies to fulfil their assignments.

The revised 2011 Budget Law allocates substantial funds to sub-national governments. It has been argued that this constitutes a first step towards increasing their fiscal autonomy and capacity, and towards improving resource allocation and accountability in Mongolia (Lkhagvadorj, 2012). However, as this paper shows, for the water sector, a complicated picture has emerged in view of parallel processes of fiscal decentralisation and the introduction of RBOs. This includes considerable overlaps in functions, a lack of funding for RBCs, insufficient funding for RBAs and competition over funds between RBOs and sub-national jurisdictions.

The discussion paper shows that the allocation and differentiation of various water governance functions related to policy-making, policy implementation, operational management and regulation among various water-governing bodies at the *Aimag* and *Soum* levels, on the one hand, and at the river basin scale, on the other, remains complex and convoluted. Even analysing the purely formal allocation of responsibilities turned out to be a complex undertaking. Despite a broad division of labour, a high level of overlap exists in terms of data management, monitoring and law enforcement, and the implementation of measures among various actors. These overlaps contradict the principle of disentanglement. Even for explicitly shared tasks, the cooperation principle is hardly implemented. The principle of subsidiarity is only partly – but also insufficiently – realised. In principle, accountability mechanisms are in place at the provincial and river basin levels. However, at the river basin scale, these so far have hardly applied in practice, as operational RBCs are still largely absent due to the lack of government funding for these bodies. We recognise that overlapping functions are not necessarily detrimental, considering that they have been noted to increase a system's resilience to shocks (Walker & Salt, 2006). However, when overlapping functions are not paired with detailed provisions for coordination, we do

consider them to be problematic, as tasks might be fulfilled in duplication, or not fulfilled at all, if each entity expects the respective other(s) to do so.

In terms of financing water governance tasks, broadly speaking, RBAs are financed through national budgets and AEAs through local budgets. For RBCs, no regular government funding is foreseen, and so far, the option of task-based contracts between local or national governments and RBCs has not been realised. Resolution A/57 broadens possible funding sources but still provides no options for stable financing. In practice, the allocation of funds to RBAs only covers fixed costs. Thus, RBAs are essentially assigned unfunded mandates for planning, monitoring and implementing water protection and restoration in basin areas, which considerably limits their effectiveness. At the *Aimag* level, *Aimag* assemblies generally tend to prioritise development projects over environmental protection. Still, the AEAs have certain budget allocations for the implementation of environmental protection measures on behalf of *Aimag* governors. However, at least in the case studied, the AEA did not allocate any of these resources to water protection measures. Further research would be needed in order to find out whether this finding can be generalised.

Furthermore, inconsistent legal provisions on water-use fees have led to competition between AEAs and RBAs over these funds, which undermines trust and makes the performance of shared tasks (such as managing a water database) as well as overlapping tasks even more difficult. Very recently, RBCs have also entered the mix as possible competitors. Furthermore, while *de jure* 35 per cent of water- (and natural-resource) use fees are to be earmarked for environmental protection, *de facto* earmarking does not necessarily take place, meaning that funds dedicated to water management measures are not available. Even if earmarking might entail drawbacks from fiscal policy points of view (inflexibility of funds, disputed effectiveness), from a sectoral position, a lack of legal provisions on earmarking contributes to the lack of funds. The low level of *de jure* earmarking and the absence of *de facto* earmarking also imply that the principle of fiscal equivalence is not realised in water resources management, which asks for a congruence among those who benefit from, who finance and who decide upon collective goods. In fact, fiscal equivalence could be realised if water-use and water-pollution fees were made available to RBOs, and if RBOs decided upon their use for water protection measures.

In the case analysed, first attempts were recently undertaken to clarify shared and overlapping responsibilities in Memorandums of Understanding. Although their effectiveness should be subject to future research, they alone will hardly solve the problem of underfinancing, especially since, according to the Budget Law, they cannot reallocate funds from *Aimags* to RBOs.

Overall, we conclude that, in Mongolia thus far, fiscal decentralisation and the institutionalisation of river basin management are hardly mutually supportive – but rather competitive – processes. In Mongolia, both complex parallel nested jurisdiction-based (type I) and area-specific functional (type II) multi-level water governance arrangements are in place. However, such parallel structures exist in many federally organised countries and should not be considered as a problem *per se*. Rather, the challenge in Mongolia seems to be the high degree of overlap in assigned responsibilities, combined with low levels of available funding and the fact that RBAs largely have unfunded mandates. In consequence, RBAs and RBCs are hardly in a position to demonstrate the benefits of a river basin management

approach, which seeks to reconcile upstream and downstream as well as different sectoral interests at the scale of the river basin in order to ensure sustainable water use.

This raises the question of how the given situation should best be dealt with. Given the apparent danger that water issues could be neglected with a pure jurisdictional/*Aimag*-based approach, abolishing RBOs is not a viable option in our view. Instead, we argue that the co-existence of respective bodies at the *Aimag* and the river basin scales is important, as it ensures that both the logics of territorial jurisdiction and river basins are considered. Still, the division of labour should be carefully revisited in order to streamline procedures as much as possible. In addition, a crucial prerequisite will be to financially strengthen RBAs and RBCs so that they are enabled to fulfil their functions and empowered to ensure sustainable water use for the benefit of the economy, the society and the environment.

Based on our analysis, we recommend that consideration be given to the following legal and financial adjustments in order to strengthen RBAs and RBCs:

- The Ministry of Environment and Tourism should consider revisions to the legal assignment of responsibilities to reduce overlap and uncertainty. It is also necessary to provide a clearer distinction of responsibilities, both horizontally across different sub-national governance entities (principles of disentanglement) and vertically across government levels, taking the principle of subsidiarity into account. This pertains to all bodies at the sub-national level, RBAs, RBCs, AEAs, governors, *Khurals*, inspectors and environmental rangers.

- For shared tasks, clear regulations for sharing the respective responsibilities should be introduced (cooperation principle).

- Legal inconsistencies and/or uncertainties regarding water-use fees should be clarified, in particular with respect to the Government Special Fund Law, Decree 43 and Resolution A/57.

- From a sectoral point of view, consideration could be given (1) to enlarging the share of water-use fees earmarked for water protection, and (2) to making (a higher share of) water-use fees directly available to RBAs and RBCs. We argue that this would be in line with the principle of fiscal equivalence.

- Water-pollution fees should be implemented, and consideration could be given to making them directly available to RBAs and RBCs, arguably in line with the principle of fiscal equivalence.

- Legal adjustments should be considered so that RBCs can receive a minimum of government financial support for their establishment and functioning, so that they can fulfil their mandate.

- Irrespective of whether legal adjustments are carried out, the state funding for RBAs should be increased so that they are able to fully fulfil their functions.

- In case of a reallocation of responsibilities, the funding should be rearranged accordingly.

- The Ministry of Finance should include inflation and exchange rates in its calculations of expenditure needs in order to reflect – and cover – the real costs of river basin management.

- In addition to legal revisions, or as long as legal revisions are not feasible, the respective agencies should clarify the division of labour to the extent possible in Memorandums of Understanding. These should be as specific as possible and, ideally, match tasks to available funds.

References

African Ministers' Council on Water. (2012). *2012 status report on the application of integrated approaches to water resources management in Africa*. Retrieved from http://www.amcow-online.org/images/docs/2012%20africa%20status%20report%20on%20iwrm.pdf

Barrow, C. J. (1998). River basin development planning and management: A critical review. *World Development, 26*(1), 171-186.

Beveridge, R., & Monsees, J. (2012). Bridging parallel discourses of Integrated Water Resources Management (IWRM): Institutional and political challenges in developing and developed countries. *Water International, 37*(7), 727-743. http://dx.doi.org/10.1080/02508060.2012.742713

Bird, R., & Vaillancourt, F. (Eds.). (1998). *Fiscal decentralization in developing countries*. Cambridge: Cambridge University Press.

Cap-Net & UNESCO-IHE. (2008). *Performance and capacity of river basin organizations. Cross-case comparison of four RBOs*. Retrieved from http://waterwiki.net/images/0/05/Final_RBO_Performance_and_Capacity.doc

Dinar, A., Kemper, K. E., Blomquist, W., & Kurukulasuriya, P. (2007). Whitewater: Decentralization of river basin water resource management. *Journal of Policy Modeling, 29*(6), 851-867. http://dx.doi.org/10.1016/j.jpolmod.2007.06.013

Dombrowsky, I. (2005). Integriertes Wasserressourcen-Management als Koordinationsproblem. In S. Neubert, W. Scheumann, A. v. Edig, & W. Huppert (Eds.), *Integriertes Wasserressourcen-Management (IWRM). Ein Konzept in die Praxis überführen* (pp. 61-82). Baden-Baden: Nomos.

Dombrowsky, I., Houdret, A., & Horlemann, L. (2014). Evolving river basin management in Mongolia. In D. Huitema, & S. Meijerink (Eds.), *The politics of river basin organisations – coalitions, institutional design choices and consequences* (pp. 265-297). Cheltenham: Edward Elgar.

FreshThoughtsConsulting. (2017). *Mongolia: Improvement of guideline on river basin council establishment. Draft guideline*. (On file with authors.)

Frey, B. S., & Eichenberger, R. (1996). FOCJ: Competitive governments for Europe. *International Review of Law and Economics, 16*, 315-327.

Hansjürgens, B. (2001). *Äquivalenzprinzip und Staatsfinanzierung*. Berlin: Duncker und Humblot.

Herrfahrdt-Pähle, E. (2010). South African water governance between administrative and hydrological boundaries. *Climate and Development, 2*(2), 111-127. http://dx.doi.org/10.3763/cdev.2010.0038

Hofmann, J., & Battogtokh, D. (2017). *Charaa-Eree golyn sav gazryn atlas (Kharaa-Yeröö River Basin Atlas).* 2nd Edition. Retrieved from https://nimbus.igb-berlin.de/index.php/s/3wgXyFSXOzqw6G9

Hofmann, J., Karthe, D., Ibisch, R., Schäffer, M., Avlyush, S., Heldt, S., & Kaus, A. (2015). Initial characterization and water quality assessment of stream landscapes in Northern Mongolia. *Water, 7*, 3166-3205. http://dx.doi.org/10.3390/w7073166

Horlemann, L., & Dombrowsky, I. (2012). Institutionalising IWRM in developing and transition countries – the case of Mongolia. *Environmental Earth Sciences, 65*(5), 1547–1559. http://dx.doi.org/10.1007/s12665-011-1213-7

Houdret, A., Dombrowsky, I., & Horlemann, L. (2014). The institutionalization of river basin management as politics of scale – insights from Mongolia. *Journal of Hydrology, 519*, Part C, 2392-2404. http://dx.doi.org/10.1016/j.jhydrol.2013.11.037

Huitema, D., & Meijerink, S. (2014). The politics of river basin organizations. Coalitions, institutional design choices and consequences. In D. Huitema & S. Meijerink (Eds.), *The politics of river basin organizations*. Cheltenham: Edward Elgar.

Humplick, F., & Moini-Araghi, A. (1996). *Decentralized structures for providing roads across country comparison.* Retrieved from http://documents.worldbank.org/curated/en/607281468764135383/pdf/multi-page.pdf

International Conference on Water and the Environment. (1992, January 26-31). *International conference on water and the environment: Development issues for the 21st century.* Dublin, Ireland. Report of the conference. Retrieved from https://www.ircwash.org/resources/international-conference-water-and-environment-development-issues-21st-century-26-31-0

Karthe, D., Heldt, S., Houdret, A., & Borchardt, D. (2014). IWRM in a country under rapid transition: Lessons learnt from the Kharaa River Basin, Mongolia. *Environmental Earth Sciences, 73*(2), 681-695. http://dx.doi.org/10.1007/s12665-014-3435-y

Kemper, K. E., Blomquist, W., & Dinar, A. (2010). *Integrated river basin management through decentralization*. Berlin and Heidelberg: Springer.

Kneese, A. V., & Bower, B. T. (1968). *Managing water quality: Economics, technology, institutions*. Washington, DC: The Johns Hopkins University Press and Resources for the Future.

Lankford, B. A., & Hepworth, N. (2010). The cathedral and the bazaar: Monocentric and polycentric river basin management. *Water Alternatives, 3*(2010), 82-101.

Lkhagvadorj, A. (2010). *Fiscal federalism and decentralization in Mongolia*. Potsdam: Universitätsverlag Potsdam.

Lkhagvadorj, A. (2012). *Analysis on Mongolia's integrated budget law*. Ulaanbaatar: Swiss Agency for Development and Cooperation. Retrieved from https://www.researchgate.net/publication/279708219_An_Analysis_of_the_New_Budget_Law_of_Mongolia_of_2011

Lkhagvadorj, A., & Altankhuyag, M. (2014). *Review paper on fiscal equalization system in Mongolia, governance and decentralization programme*. Ulaanbaatar: Swiss Agency for Development and Cooperation. Retrieved from https://www.researchgate.net/publication/279706585_Review_Paper_on_Fiscal_Equalization_Systemin_Mongolia

Marks, G., & Hooghe, L. (2004). Contrasting visions of multi-level governance. In I. Bache & M. Flinders (Eds.), *Multi-level governance* (pp. 15-30). Oxford: Oxford University Press.

McCaffrey, S. (2003). *The law of international watercourses: Non-navigational uses*. Oxford: Oxford University Press.

Merrey, D. J. (2008). Is normative integrated water resources management implementable? Charting a practical course with lessons from southern Africa. *Physics and Chemistry of the Earth, 33*(8-13), 899-905.

Mollinga, P., Dixit, A., & Athukorala, K. (Eds.). (2006). *Integrated Water Resources Management: Global theory, emerging practice and local needs*. Thousand Oaks, CA: SAGE Publications.

Moss, T. (2003). Solving problems of "fit" at the expense of problems of "interplay"? The spatial reorganisation of water management following the EU Water Framework Directive. In H. Breit, A. Engels, T. Moss, & M. Troja (Eds.), *How institutions change: Perspectives on social learning in global and local environmental contexts* (pp. 85-121). Opladen: Leske + Budrich.

Moss, T. (2004). The governance of land use in river basins: Prospects for overcoming problems of institutional interplay with the EU Water Framework Directive. *Land Use Policy, 21*, 85-94.

Mostert, E. (1998). River basin management in the European Union: How it is done and how it should be done. *European Water Management, 1*(3), 26-35.

Newson, M. (1992). *Land, water and development: River basin systems and their sustainable management*. London: Routledge.

Oates, W. E. (1999). An essay on fiscal federalism. *Journal of Economic Literature, 37*, 1120-1149.

Olson, M. (1969). The principle of "fiscal equivalence": The division of responsibilities among different levels of government. *American Economic Review, 59*, 479-487.

Organisation for Economic Co-operation and Development. (2015). *OECD principles on water governance*. Retrieved from http://www.oecd.org/cfe/regional-policy/OECD-Principles-on-Water-Governance-brochure.pdf

Petersen, T., Scheller, H., & Wintermann, O. (2008). Public attitude towards German federalism: A point of departure for a reform of German (fiscal) federalism? Difference between public opinion and the political debate. *German Politics, 17*(4), 559-586.

Petry, D., & Dombrowsky, I. (2007). River basin management in Germany – past experiences and challenges ahead. In J. D. Erickson, F. Messner, & I. Ring (Eds.), *Ecological economics of sustainable watershed management* (pp. 11-42). Amsterdam: Elsevier Publishers.

Pfaeffli, S., Lkhagvadorj, A., Merat, J., & Dorj, S. (2015). *Decentralization policy support project document under governance and decentralization programme*. Ulaanbaatar: Swiss Agency for Development and Cooperation.

Rogers, P. (1997). International river basins: Pervasive unidirectional externalities. In P. Dasgupta, K.-G. Mäler, & A. Vercelli (Eds.), *The economics of transnational commons* (pp. 35-76). Oxford: Carendon Press.

Sadoff, C. W., Whittington, D., & Grey, D. (2002). *Africa's international rivers. An economic perspective.* Directions in Development series. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/15175/multi0page.pdf?sequence=1&isAllowed=y

Schlager, E., & Blomquist, W. (2008). *Embracing watershed politics*. Boulder, CO: University Press of Colorado.

Seabright, P. (1996). Accountability and decentralization in government: An incomplete contract model. *European Economic Review, 40*, 61-86.

Shah, T., Makin, I., & Sakthivadivel, R. (2001). *Limits to leapfrogging: Issues in transponding successful river basin management institutions in the developing world.* Paper presented at the Intersectoral Management of River Basins, Loskop Dam, South Africa.

Smoke, P. (2001). *Fiscal decentralization in developing countries. A review of current concepts and practice*. Programme Paper 2. Geneva: United Nations Research Institute for Social Development.

Steiner, S. (2005). *Decentralization and poverty reduction: A conceptual framework for the economic impact*. Retrieved from http://www.duei.de/workingpaper

Teclaff, L. A. (1996). Evolution of the river basin concept in national and international water law. *Natural Resources Journal, 36*, 359-392.

United Nations Conference on Environment and Development. (1992, June 3-14). *Agenda 21*. Rio de Janeiro, Brazil. Retrieved from https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf

United Nations Environment Programme. (2012). *The UN-water status report on the application of integrated approaches to water resources management*. Retrieved from http://www.unwater.org/publications/un-water-status-report-application-integrated-approaches-water-resources-management-rio20/

Walker, B., & Salt, D. (2006). *Resilience thinking: Sustaining ecosystems and people in a changing world*. Washington, DC: Island Press.

Warner, J., Wester, P., & Bolding, A. (2008). Going with the flow: River basins as the natural units for water management? *Water Policy, 10*, Supplement 2, 121-138.

Appendices

Appendix 1: List of interviewed people				
No.	Name	Organisation	Position	Date of interview in 2017
1	N. Battulga	MET	Head of Division of River Basin Management	February
2	T. Davaanyam	MET	Specialist of Division of River Basin Management	February
3	L. Ouynchimeg	MET	General Accountant	February
4	J. Dashyqaichil	Tov AEA	Head	January
5	S. Erdenetsogt	Tov AEA	Water Specialist	January
6	P. Enkh-Amgalan	Darkhan-Uul AEA	Head	January
7	T. Uyanga	Darkhan-Uul AEA	Water Specialist	January
8	U. Ariunbaatar	Kharaa-Yeroo RBA	Director	January
9	L. Galbadrakh	Kharaa-Yeroo RBA	Senior specialist for training and planning	January
10	Sh. Dorj	Kharaa-Yeroo RBA	Specialist for water use of mining industry	January
11	Ts. Mendbayar	Kharaa-Yeroo RBA	Specialist for water facilities	January
12	N. Bolor-Erdene	Kharaa-Yeroo RBA	Specialist for water ecology and payment	January
13	E. Duuriimaa	Kharaa-Yeroo RBA	Specialist for drinking-water supply	January
14	O. Munkh-Orgil	Kharaa-Yeroo RBA	Specialist for monitoring and underground water resource	January
15	G. Oyungerel	Kharaa-Yeroo RBA	Senior specialist	January
16	Jargalsaihan	Finance and Treasure Dept. of Darkhan-Uul *Aimag*	Director	January
17	S. Batkhishig	Finance and Treasure Dept. of Darkhan-Uul *Aimag*	Senior specialist for revenue	January
18	B. Selenge	Tax Dept. of Darkhan-Uul *Aimag*	Head administration division	January

Appendix 2: The questions for semi-structured interview*	
Name of Respondent	
Position	
Organisation	
Contact email/phone	
Questions	
Responsibilities of the RBA and AEA and other sub-national governing bodies	
1. What are key objectives of your institution and how are they defined? 2. What functions/responsibilities does your organisation perform with respect to water management? 3. What are shared responsibility in respect to water management among different government institutions? 4. How is the relationship of your organisation with other institutions inside and outside basin area, and central ministries? 5. What are key obstacles on the performance of assigned responsibilities at your institutional level; what are reasons for – and solutions to – these issues? 6. How often did you contact whom or which water/environment institution for work-related water management in the last year? 7. Does your institution have sufficient capacity to perform assigned tasks?	
Funding of the RBA and AEA and other sub-national governing bodies	
1. What are the financing sources of your institution? 2. Does the funding match your institution's assigned responsibilities? 3. How is the funding of your institution organised? 4. How does your institution finance investment needs? 5. How was financing before 2011 Budget Law at your institution? 6. Has the financing improved or worsened since the 2011 Budget Law? 7. What are obstacles to raising funding to perform water-management tasks of your institution; what are reasons for – and solutions to – these issues? 8. How can your institution mobilise additional funding to improve your financing status, and what are possible consequences?	
* Note: This is a translation of the original Mongolian questionnaire.	

Appendix 3: Approved budget for RBAs for 2017 (in MNT)		
	Total for RBAs	**2,578,480,500.0**
1	Orkhon-Chuluut RBA	**115,092,400.0**
2	Khanui RBA	**62,850,000.0**
3	Buuntsagaan and Orog Lake RBA	**131,752,800.0**
4	Khuisin Gobi-Tsetseg Lake RBA	**62,051,000.0**
5	North Gobi and Khalkh RBA	**146,359,300.0**
6	Kharaa-Yeroo RBA	**128,513,700.0**
7	Buir lake and Menen step RBA	**141,674,200.0**
8	Onon-Ulz RBA	**145,541,400.0**
9	Galba-Uush-Dolood Gobi RBA	**149,042,100.0**
10	Ongo-Taats RBA	**106,266,800.0**
11	Altai and Inner Gobi RBA	**152,453,700.0**
12	Ider RBA	**71,198,500.0**
13	Khyargas lake and Zavkhan RBA	**132,403,400.0**
14	Selenge RBA	**108,755,800.0**
15	Uvs lake and Tes RBA	**95,446,700.0**
16	Tuul RBA	**300,707,400.0**
17	Delgermurun-Shishkhed RBA	**118,627,700.0**
18	Khuvsgul-Eg RBA	**103,354,100.0**
19	Uench-Bodonch-Bulgan RBA	**111,654,100.0**
20	Khar Lake and Khovd RBA	**104,055,600.0**
21	Kherlen RBA	**90,679,800.0**

Appendix 4: Synopsis of current allocation of functions in Mongolia by Budget Law

Functions of the capital city	Functions of the *Aimags*	Functions of the districts	Functions of the *Soums*
Capital city management Urban planning, construction and establishing new infrastructure Capital maintenance of construction and buildings owned by the capital city, establishing new property and making investments Social assistance and welfare services Implement programmes and measures to support employment and alleviate poverty Development of small and medium-sized enterprises Pasture management ***Establish water supply, sewerage and drainage systems*** Housing and public utility services ***Flood protection*** Public transport services Fight infectious livestock and animal diseases, eradicate and control pests, veterinary services Disaster prevention ***Environmental protection and restoration*** Establish large-scale roads, bridges and their lighting, traffic lights and other respective construction Utility services for public areas, landscaping, ***public hygiene***, street lighting, cleaning and waste removal Within the territory of the capital city, operation and maintenance services of high-voltage and electricity lines and substations and other activities to ensure normal functioning	*Aimag* management Urban planning, construction and establishing new infrastructure Capital maintenance of locally owned construction and buildings, establishing new property and making investments Social assistance and welfare services Implement programmes and measures to support employment and alleviate poverty Development of small and medium-sized enterprises Pasture management within the territory of the *Aimag* Establishing livestock fodder reserve ***Water supply, sewerage and drainage systems,*** housing, public utility services and flood protection Public transport services Fight infectious livestock and animal diseases, eradicate and control pests, veterinary services Disaster prevention and elimination ***Environmental protection and rehabilitation*** Establish roads, bridges and their lighting, traffic lights and other constructions within the territory of the *Aimag* and *Soums* Utility services for public area, landscaping, ***public hygiene***, street lighting, cleaning and waste removal Within the territory of the *Aimag*, operation and maintenance services of high-voltage and electricity lines and substations and other activities to ensure normal functioning	District management Social assistance and welfare services provided subsequent to the decision of district governors Utility services for public areas, ***public hygiene***, street lighting, cleaning and waste removal within the territory of districts Development assistance for farmers Fight infectious livestock and animal diseases, eradicate and control pests, veterinary services Disaster prevention and mitigation ***Protection of nature and the environment within the district territory*** Recurrent maintenance of lighting of public areas within the district territory District landscaping, development and maintenance of sidewalks, recreational areas and children's playgrounds	*Soum* management Social assistance and welfare services provided subsequent to the decision of *Soum* governor Utility services for public areas, ***public hygiene***, street lighting, cleaning and waste removal within the territory of *Soums* Fight infectious livestock and animal diseases, eradicate and control pests, veterinary services Disaster prevention and mitigation Pasture management within the territory of the *Soum* ***Protection of nature and the environment within the* Soum *territory*** Recurrent maintenance of lighting of public areas within the *Soum* territory *Soum* landscaping, development and maintenance of sidewalks, recreational areas and children's playgrounds ***Water supply, sewerage and water services*** Maintenance of locally owned buildings, creation of new properties, investments

Note: Italics indicate water- and environmental-related tasks.

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
Policy and decision-making, river basin planning, planning of measures	• Develop draft RBMP (WL 17.1.1) • Set location to wastewater discharge and water supply sources in the basin area (WL 17.1.8) • Develop reasoning for protected areas for surface water sources and underground water deposits (WL 17.1.12) • Make recommendations on building irrigation systems and water facilities based on governor's proposal (WL 32.8)	• Reflect citizens' proposals in water protection and rational use (WL 20.4.1) • Collect opinions from the public jointly with RBA and provide recommenda-tions for RBMP (WL 20.1, Res. A/57, 4.1.) • Propose projects on water storage and use (WL 20.4.2) • Propose protected areas (Res. A/57 4.1.8)				• *Aimag Khural*: Adopt laws, strategies, plans; implement, monitor, evaluate them with water authorities (WL 11.1.1) • Both: Debate and approve water management plan submitted by governors and RBA (WL 11.1.2) • *Aimag Khural*: Approve budget for water management measures (WL 12.1.1.) • Both: Decide on protected areas for water resources and zones for special			

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
						protected area, set protected zones (WL 11.1.3, 11.1.4, EPL 16.1.4) • Both: Approve measures and budgets for environmental protection measures and oversee implementation (EPL 16.1.1, 17.1.1)			
Data collection and manage-ment	• Organise annual water inventory by cooperating with local governments and report to the MET (WL 17.1.4) • Manage water sub-database for basin area (WL 17.1.5) • Provide water information to the public (WL 17.1.5)		• Consolidate water and spring inventory data and submit to RBA and MET (WL 18.1.5) • Manage *Aimag* water database and submit to the RBA and MET (WL 18.1.2)		• Carry out water resource inventory (WL 7.3) • Submit information and data to environmental database and MET (EPL 16.2.3) • Jointly with MET, determine degree of drought,				

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
					desertification and desiccation on an annual basis (WL 23.2)				
Licensing water use and waste-water discharge	• Bring out conclusion for water use from 50 to 100 m³/day (WL 28.4) • Issue licences for water use of more than 100 m³/day upon MET conclusion (WL 28.6) • Issue licences for wastewater discharge of more than 50 m^3/day and record into database (WL 24.2) • Issue recommendations for mining permits (WL 17.2)		• Bring out conclusion for water use of up to 50 m³/day • Issue licences and for water use from 50 to 100 m^3/day based on RBA conclusion (WL 18.1.4, 28.4) • Issue permissions for boreholes and wells, channels and canals based on water quality and quantity; register wells			• *Aimag*: Establish maximum use limits for natural resources within territory; *Soum*: establish use limits for natural resources (EPL 16.1.2, 17.1.2)	• Issue licences for water use below 50 m³/day (WL 13.1.5, 28.6) • Issue licences for wastewaster discharge of up to 50 m³/day (WL 24.2) • Conclude contracts for the exploitation of mineral water and monitor their observation (WL 13.1.2)	• Issue water use licences and inform RBA and AEA (WL 19.1.4) • Issue licences for the use of natural resources (EPL 28.2.2)	

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
			into database (WL 27.1)						
Recording	• Record issued conclusions and licences on water use into water database (WL 17.1.6) • Record issued licences for wastewater discharge into water database, file with relevant tax authority (WL 24.2, WPL 4.2)		• Record issued conclusions and licences on water use into water database (WL 18.1.4)	• Keep records of environ-mental breaches (EPL 27.2.2)			• Record issued licences and for water use into water database (WL 13.1.5, 28.4) • Record licences issued for mineral water exploitation into database (WL 13.1.2) • Record issued licences for wastewater discharge into database (WL 24.2)	• Keep records of environ-mental breaches (EPL 27.2.2)	
Imposing water use and pollution fees	• "Define the ground" for water-use and water-pollution fee in accordance with relevant					• *Aimag Khural*: Set the rate of spring-use fees within the limits determined by		• Impose charges for water use and pollution	

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
	legislation (WL 17.1.7)					the Parliament (NRUFL)		fee (WL 19.1.2)	
Monitoring water use and pollution	• Monitor potential water resources and water use in basin area (WL 17.1.10)	• Monitor water users and report violations of contracts and regulations (WL 20.4.4)	• Monitor water resource protection, appropriate use of water, restoration of water environment (WL 18.1.3) • Monitor water supply, sewerage and drainage (WL 18.1.3)	• Obtain relevant informa-tion from water users (EPL 27.1.2) • Have free access to operations to take samples (EPL 27.1.4)	• Supervise local businesses and organisations regarding environmental protection, use and restoration of natural resources (EPL 16.2.4) • Request environmental research and proposals from professional organisations (EPL 11.2) • Monitor environmental rehabilitation activities (LwLN 5.2)		• Make contract and monitor spring uses (WL13.1.2) • Monitor environmental rehabilitation activities (LwLN 5.2) • Supervise local businesses and organisations regarding environmental protection, use and restoration of natural resources (EPL 17.2.4) • Monitor use of natural resources (EPL 17.2.3)	• Monitor changes to natural resources and record them in database (EPL 28.2.4)	• Monitor the exploitation, protection and possession of water points within jurisdiction (WL 15.1.3) • Supervise protection and use of commonly shared natural resources (EPL 18.1.2)

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
Monitor implementation of laws and programmes	• Monitor implementation of RBMP (WL 17.1.2)	• Monitor implementation of RBMP and report violations (WL 20.4.3) • Monitor observance of protected areas (WL 20.4.6) • Evaluate outcome contract of the RBA (Res. A/57 4.1.3)	• Monitor implementation of water laws, report to *Aimag* governor and the MET (WL 18.1.1)	• Supervise compliance with environmental legislation (EPL 27.1.1)		• Both: Oversee implementation of water laws and water programme (WL 11.1.1)		• Monitor implementation of water laws and enforce them (WL 19.1.1)	
Suspending water licences	• "Bring out conclusion" to suspend licences for water consumption and discharge in case of infringements and take violators to court for compensation of damages (WL 17.1.9) • Take decision to terminate contracts, termination is	• Propose suspension of water use licences or construction work in case of negative environmental impacts (WL 20.4.8, Res. A/57 4.1.6)	• Terminate contracts with entities in possession of water facilities if they fail to meet their obligations (WL 32.5)	• Require citizens, business entities or organisations to eliminate adverse environmental impacts or to suspend their activities in case of	• Bring temporary injunctions against businesses and organisations with adverse environmental impacts, inform relevant officials (EPL 16.2.4)		• Make decision to suspend water use in case of shortages or pollution, organise restoration, make petition for compensation (WL 13.1.3) • Stop unlicensed industrial		

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
	concluded by the entity that issued the permit (WL 29.3, WL 29.3.6)			non-compliance with environ-mental legislation (EPL 27.1.3)			water use and unlicensed drilling of wells (WL 13.1.1) • Bring temporary injunctions against businesses and organisations with adverse environmental impacts, inform relevant officials (EPL 17.2.4) • Terminate contracts with entities in possession of water facilities if they fail to meet their obligations (WL 32.5)		

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
Enforce-ment & imposition of penalities and compen-sation charges		• Recommend compensa-tion charges for environ-mental damages to RBA in case of water use and wastewater discharge that exceeds the licensed limits (Res. A/57 4.1.7)		• Impose penalties for breaches of environ-mental legislation (EPL 27.1.7) • Impose compensation charges for unlicensed water pollution or pollution exceeding licence (WL 25.2, WPL 10.1, 10.1.1)			• Enforce the implementation of the regime on sanitary zone, emergency and normal water source protected area, and natural water storage places (WL 13.1.6) • Ensure reimbursement for damages to nature and unlicensed pollution (WL 13.1.3)	• Impose administrative penalties for breaches of environ-mental legislation (EPL 28.1.2)	• Enforce emergency and normal water protection and sanitary zones (WL 15.1.4)
Imple-menting plans and measures	• Provide inter-sectoral and inter-jurisdictional coordination for	• Organise activities to protect or rehabilitate			• Define required budget for water		• Set up waste water discharge points based	• Implement water protection and	• Ensure implementation of water-related laws (WL 15.1.1)

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
	RBMP implementation (WL 17.1.2) • Implement water protection and environmental restoration measures jointly with environmental rangers (WL 19.1.3) • Cooperate with governors to organise and support private initiatives for rainwater harvesting and building dams (WL 23.1)	water resources by mobilising local people and professional institutions (WL 20.4.7) • Cooperate with government, non-government and international organisations in relation to the implementation of projects and programmes (Res. A/57 4.1.10)			management measures (WL 12.1.1) • Organise and coordinate water protection, optimal use, regeneration of water resources and construction of water infrastructure (WL 12.1.3) • Develop and coordinate implementation projects on water supply and sewerage (WL 12.1.3) • Organise and coordinate water resource protection and regeneration and build water facilities (WL 12.1.3)		on recommenda-tions by water professionals (WL 13.1.4) • Put up signs at protected zones and ensure their observation (WL 13.1.6) • Implement environmental protection legislation and government decisions (EPL 17.2.1) • Cooperate with RBAs to organise and support private initiatives for rainwater harvesting and building dams (WL 23.1)	environmental restoration measures jointly with RBA (WL 19.1.3) • Limit and rectify damage upon occurrence of natural disasters and inform governor (EPL 28.1.5) • Protect natural resources and prevent negative environmental impacts	• Mobilise citizens for water resource protection and restoration activities (WL 15.1.2) • Implement environmental protection legislation and government decisions (EPL 18.2.1)

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
					• Organise the implementation of sanitary zones, emergency and normal water source protected areas, and natural water storage places (WL 12.1.4) • Ensure implementation of water protection, rational use, restoration, and disaster prevention measures (WL 12.1.1) • Organise water resource protection and restoration activities (WL 12.1.4) • Put up signs at protected zones and			(EPL 28.2.1) • Organise restoration measures (EPL 28.2.6)	

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
					ensure their observation (WL 12.1.5) • Implement environmental protection legislation and government decisions (EPL 16.2.1) • Develop measures for environmental protection, appropriate use of natural resources and restoration (EPL 16.2.2) • Coordinate environmental protection activities of state organisations (EPL 16.2.5) • Cooperate with RBAs to organise and support private initiatives for				

Appendix 5: Current allocation of responsibilities for RBA, RBC, AEA and local governments									
Column: Entity Row: Function	River Basin Administration	River Basin Council	AEA	Environ-mental inspector	*Aimag* governor	*Aimag* and *Soum Khural*	*Soum* governor	Environmental ranger (*Soums*)	*Bagh* governor
					rainwater harvesting and building dams (WL 23.1)				
Miscel-laneous	• Provide advice to governors and local assemblies (WL 17.1.3) • Prepare proposal to establish RBC by consulting respective jurisdictions and submit to MET (WL 17.1.11)	• Provide information to the public regarding water use and water protection measures, organise public support for the latter (Res. A/57 4.1.9)			• Appoint and dismiss *Soum* state inspectors on the recommendation of state chief inspectors (EPL 26.4.3)		• Appoint and dismiss *Soum* environmental rangers based on recommendation of the *Soum* state inspectors (EPL 26.4.4)		

Appendix 6: Revenue assignments of different government levels in Mongolia by Budget Law			
Common taxes	**State taxes**	***Aimag* and capital city taxes**	***Soum* and district taxes**
• Domestic VAT (95:5) • Mineral royalty other than 47.3 of Mineral law (95:5) • Oil royalty (70:30) • Licence fees for oil mining and exploration (70:20:10)	• CIT • VAT • Excise taxes • Custom duties • Gasoline tax • Mineral royalty • Licence fees for mining and exploration of mineral resources • Air-pollution fee • Stamp duty (11.2 of the stamp duty law) • ***Water-pollution fee***	• Capital city tax • Land payment • Immovable property tax • Vehicle tax • ***User fee for industrial water*** • Wage tax (8.1.1 of PIT law) • Inheritance and gift tax* • Stamp duties other than 11.2 of the stamp duty law	• PIT other than 8.1.1 of the PIT law • Gun tax • Stamp duties other than 11.2 of the stamp duty law • User fee for hunting • User fee for natural resources other than minerals • User fee for herbs • User fee for timber • User fee for common minerals • ***User fee for drinking and household water and springs*** • Self-employment tax • Dog tax* • Service charge for wastes
Note: Italics indicate water- and environmental-related revenues.			

Appendix 7: Approved budget of MET (in million MNT)				
No.	Name of Organisation	staff	2016	2017
1	MET central apparatus	113	11,936.60	15,903.10
2	Forest Research and Development Centre	12	213.30	207.10
3	Pure Water Resource and Nature Protection Centre	25	300.40	296.30
4	Protected Area Administrations	607	6,338.20	6,330.20
5	River Basin Authorities	202	2,261.70	2,578.50
6	Weather and Environment Analysing Agency	54	2,314.50	2,549.60
7	Weather Environment Research and Information Institution	119	1,464.30	1,467.90
8	Central Laboratory for Environment	36	445.80	456.40
9	Centre for Flight Weather	47	633.90	635.30
10	WEAA of *Aimags*	1,624	15,462.80	15,938.10
11	Others (FNP, International Projects, maintenance and Forest)		15,994.60	24,284.40
Total		**2,839**	**57,366.20**	**70,645.90**

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