

WATER LAW REFORM CAPACITY BUILDING: Themes, Gaps and Opportunities

Report to the
Water Research Commission

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WRC Report No. 3115/1/23

ISBN 978-0-6392-0579-3

February 2024



Obtainable from

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This is the final report of WRC project no. C2022/23-00888.

Also available is *Litigating water - A training manual to support public interest litigation on water in South Africa* (SP 170/23)

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EXECUTIVE SUMMARY

BACKGROUND

This Report on Water Law Reform Capacity Building Themes, Gaps, and Opportunities is a significant component of the Water Research Commission Project *Consolidating and Catalysing South African Water Law Expertise* (the Project). The report represents the fifth deliverable in this project and offers insights from a qualitative research study on the state of water law training in South Africa.

Water law training is deemed crucial for realising South Africa's transformative constitutional vision, which centres on democratic constitutionalism and the rule of law. Transformative constitutionalism, as conceptualised by legal scholar Karl Klare and other South African constitutional experts, extends the traditional principles of the rule of law to encompass the aspiration of inducing substantial social change through nonviolent political processes grounded in the law.

In the context of the water sector, transformative constitutionalism aims to be achieved through legislation like the National Water Act 36 of 1998 and the Water Services Act 108 of 1997. However, these laws have led to a complex regulatory framework over the past two and a half decades, with the National Water Act alone amassing more than 120 regulations. The complexity of water law is further compounded by its interplay with other intricate regulatory frameworks governing the environment and municipal government. Additionally, bridging the gap between technical legal expertise and the diverse disciplines underlying water law, including social and hard sciences, presents another layer of complexity.

Given these rapid and highly technical developments, there is an urgent need for investments in capacity-building to interpret, understand, and enforce water law effectively. With anticipated changes in water laws on the horizon, this moment offers an opportunity to focus on creating a knowledge and capacity foundation necessary to continue evolving and implementing water law in South Africa.

AIMS

The following were the aims of the project:

1. Map the current community of practice (academic, public and private sector, civil society) active in the field of water law, including assessment of the current levels of capacity to produce law graduates specialising in water law.
2. Identify key themes, trends and gaps in the current body of knowledge on South African water law.
3. Contribute to development of an agenda for future investments in research and capacity building on water law.
4. Organise an intervarsity interdisciplinary national moot court competition on a current hot topic in South African water law.

The specific aim of the fourth and final phase of the Project was to provide an evidence-based assessment of water law training gaps, needs and opportunities.

METHODOLOGY

The fourth phase of the Project relied on a mixed-methods approach comprising an online survey of water law training offerings, an online questionnaire (compiled as a Google Form), and one-on-one interviews. The Human Research Ethics Committee (Non-Medical) at the University of the Witwatersrand granted ethics clearance for the online questionnaire and interviews on 10 February 2023 under Protocol No. H22/09/05.

The online questionnaire was forwarded to 700+ individuals included in a previous phase of the project in a Water Law Experts Directory. The questionnaire was sent as a link in an introductory and explanatory email. Over the period of mid-April to mid-June 2023, the email and link were sent out twice to all identified water law experts. A total of **45** responses were received at the end of this period.

The next phase of the research involved one-on-one interviews conducted in two rounds. Initially, 19 participants expressed their willingness to participate and were sent Participant Information Sheets and Consent Forms. Sixteen of them agreed to be interviewed, and these interviews were conducted via MS Teams between June and July 2023 using a semi-structured interview schedule approved by the Reference Group. Automatic transcription was enabled for these interviews, with an average duration of 45 minutes each. Two interviews failed to record, and the Researcher reconstructed interviewee responses from her notes.

To achieve the target of 30 interviews, an additional twenty invitations were sent to contacts of entities identified in the Water Law Training Database, and from names randomly selected from the Water Law Experts Directory. However, none of these further invitations was accepted.

In August and September 2023, transcriptions were prepared, and data analysis and coding began. A suggestion from Mr. John Dini of the Water Research Commission led to a second round of interviews conducted in the first two weeks of October 2023, resulting in an additional eight interviews, bringing the total to **24 interviews** for the research.

The research process involved cleaning the interview transcripts to remove any identifying information in compliance with ethics clearance conditions. The Principal Investigator closely reviewed the initial 16 transcripts and created a limited set of codes to categorize sub-themes related to three main areas: water law work, water law training (pathways and provision), and water law training challenges, gaps, needs, and opportunities. The detailed logic and descriptions of these codes are provided in the introductory sections of the respective chapters.

The codes and associated quotations from the first 16 transcripts were organized in an MS Excel Master sheet. These quotes were sorted by code onto separate sheets, consolidating quotes for each sub-theme across transcripts. This process revealed additional sub-themes. For instance, within quotes related to 'water law challenges,' sub-themes such as epistemological boundaries, policy uncertainty, and provisioning challenges emerged. The same set of codes was applied to analyse data from the online questionnaire. The Researcher coded the second set of interviews, which were then reviewed by the Principal Investigator.

The findings from the analysis of data gathered through the online questionnaire and interviews were synthesized to create this Report. **To further protect interviewees' identities in the small water law sector, the gender of interviewees has been randomly altered in the Report.**

WATER LAW WORK

The Project assumes that water law training should support the ways in which actors from different communities of practice use water law in their work. Chapter 2 sets out findings from the questionnaire and interviews relating to water law work, categorised according to approach, focus and sources of law.

The findings regarding the approach to water law work underscore the diverse range of practices employed by various water law communities of practice, encompassing licensing, compliance monitoring, enforcement, advising on compliance-related aspects, regulatory work, research, teaching, publishing, policy advising, and more. This diversity poses a challenge when designing water law training, as a single course or program cannot cater to all these nuances. Because water law also involves *work*, it is likely that trainees would want training materials to be clearly relevant. A regulator, for example, is unlikely to want training on how to improve water law research and writing skills and may not even be interested in how to improve legislative drafting.

This means that a training **designed for particular communities of practice** is probably preferable as a framework for guiding investment in future water law training.

The study revealed the importance of ancillary skills like negotiation and collaboration, which should be incorporated into training programs for specific water law communities.

Experts in the field possess both scientific and legal expertise, covering scientific fields like geohydrology, engineering, ecology, chemistry, and legal domains such as human rights and environmental law. Incorporating these multidisciplinary aspects into water law training presents design challenges but is essential to providing comprehensive expertise.

Although questionnaire and interview responses evinced a number of values associated with water law, (including resource protection, transformation, equitable water access, compliance, client-centeredness, and fiscal responsibility) the focus of current water law work is compliance-centric and most responses indicated expertise in the compliance-related aspects of the National Water Act (NWA).

The key sources of water law were identified as the NWA, administrative law, the National Environmental Management Act (NEMA, with an emphasis on NEMA principles), the Water Services Act (WSA), municipal legislation and by-laws, international water law frameworks, the Constitution, human rights, and other relevant acts like the Biodiversity and Waste Acts. Interview participants were unanimous in affirming the fundamental and vital importance of administrative law, with one participant going so far as suggesting that water law is simply a division of administrative law. Very few participants mentioned the significance of verbal, lived customary law but they were adamant that customary law perspectives were both lacking in the current South African water law framework and needed to be incorporated into water law curricula.

WATER LAW TRAINING: PATHWAYS AND PROVISION

Chapter 3 sets out findings on water law training status quo as well as the pathways to water law expertise and current provision.

The current water law training landscape in South Africa is characterized by limited offerings. There are only two public academic institutions and two private providers that offer specific courses in water law. Additionally, one private service provider offers a SAQA-registered occupational certificate in water regulation. Some academic institutions integrate water law training into master's level programs in environmental law.

The existing water law courses cater to different communities of practice. For instance, the Wits Water Law course primarily targets the legal fraternity community, while the Agricultural and Water Law course at the University of Limpopo focuses on the intersection of agriculture and water-related topics. Private water law courses have a broader appeal and can benefit government, legal professionals, water administration personnel, and individuals requiring a Water Use License (WUL).

These current water law courses cover various aspects of water law, encompassing fields like biodiversity law, waste law, mining law, and planning law, which are often taught alongside water law. Administrative law is taught unevenly across these courses, with public academic institutions assuming students have foundational knowledge in administrative law, while private courses provide more explicit instruction in administrative justice principles.

None of the water law courses in legal academia incorporate water-related scientific content. However, the UCT course on Environmental Law for Non-Lawyers offers a multidisciplinary approach to engage with law alongside science. Interestingly, there is no equivalent course that provides water science training for non-scientists.

Despite the available water law training offerings, most respondents and participants reported receiving no formal water law training, learning most aspects "on the job." In contrast, more respondents had received formal administrative law training as part of their initial legal education.

The study revealed common pathways to water law expertise, which could originate from various tertiary education backgrounds, including law or science-based formal education. These pathways involved a mix of work-based experience, further formal education, informal training, and providing water law training. Participants could either specialize vertically or gain knowledge horizontally in different disciplinary fields. Some participants successfully transitioned between water science and water law by pursuing additional degrees (e.g. an LLB or LLM) after completing degrees in engineering or ecology.

Workplace experience emerged as a significant mode of learning, raising questions about how to create reflective spaces for workplace learning within communities of practice. Informal learning opportunities, such as conference presentations and workshops, were also highlighted as valuable. This is potentially an unearthen possibility for water law training.

Participants had mixed experiences with water law training, with academic institutions and private providers receiving positive feedback. Some criticized university lecturers for lacking practical experience and scientific knowledge, but this criticism should be weighed against the argument that water law courses are not necessarily designed with the needs of all water law communities in mind. Many interviewees also offered water law training within their communities of practice, through donor-funded programs, commercial training, or collaborations with academic institutions. These existing forms of training provision should be incorporated in a water law training investment strategy alongside plans to develop more formal training opportunities.

WATER LAW TRAINING CHALLENGES, NEEDS, GAPS AND OPPORTUNITIES

Chapter 4 addresses water law training challenges, needs, gaps and opportunities. Water law training in South Africa faces several challenges and opportunities. Epistemological linkages, policy and legislative uncertainty, implementation challenges, and issues related to values all contribute to the complexity of water law education in the country.

Participants highlighted the multifaceted nature of water law, emphasizing its connections to historical and political contexts, as well as its integration with various hard sciences such as ecology, chemistry, and engineering. Balancing this broad spectrum of knowledge within a specialized course is challenging, and participants emphasized the importance of teaching water law from a critical perspective that considers its social and environmental linkages.

Another challenge is the gap between water law and its implementation, which can hinder effective teaching. Instilling an understanding of the fundamental principles and values underpinning water law while meeting the demand for compliance-centric instruction is also a challenge.

While there is a shortage of formal water law training opportunities, respondents and participants tended to frame training gaps in terms of specific knowledge deficits or needs within different communities of practice. Government-related comments often revolved around perceived regulatory shortcomings, including inconsistent advice, failures to adhere to administrative justice principles, and inadequate maintenance of public information systems. Departmental insiders also highlighted their challenges, including limited staff, frequently shifting regulatory priorities, and a lack of appreciation for the importance of water law.

Notably, practical, application-focused training in substantive water law, municipal by-laws, Treasury and tender regulations, and relevant hard sciences is crucial for local government officials tasked with managing municipal water infrastructure.

Several participants advocated for water law training for the general public or specific communities to raise awareness of their rights. This could include donor-funded courses, public outreach through billboards and media, and programs run by various organizations.

Opinions varied regarding the need for water law training within the legal services community, with a specific emphasis on training for prosecutors in criminal procedure and evidence rules. For water law administrators, the issue was seen as more related to political will and ethics than knowledge.

Opportunities in water law training include practical elements such as case studies, simulations, hands-on exercises, real-world examples, problem-solving exercises, and interactive learning methods. Multi- and trans-disciplinary approaches were also highlighted, recognizing the benefits of learning across different fields. Collaboration and cooperation were seen as valuable, although opinions differed on the scale and parties involved in such collaborations.

CONCLUSIONS & RECOMMENDATIONS

The final chapter serves to synthesize the report's findings across six categories: the who, what, how, when, where, and why of water law training, with the aim of guiding future strategies for water law research and capacity building.

Who Should Be Trained? The research suggests that the government community of practice, especially local government, should be a priority for training investments. Training for local government officials needs to encompass not only water law but also municipal by-laws, procurement legislation, and engineering and chemistry concepts. Additionally, training of Department of Water and Sanitation (DWS) officials is required, with an emphasis on more analytical and case-centric approaches for senior colleagues. However, there's a concern that water law is not always seen as important within the department, which raises broader issues given the importance of water law for transformative constitutionalism. Public and community-level education in water law is also needed, but the scope and focus of this training need further clarification.

What Should Be Included in a Water Law Training Course? Water law training should encompass various aspects, including the NWA, WSA, related regulations, NEMA principles, administrative justice principles, constitutional and human rights law, and international water law. While these elements are already included in water-specific courses, there's room for expanding the focus on administrative law. Customary laws and practices related to water are often omitted and should be considered in the curriculum. Interdisciplinary links between water law and other social sciences and hard sciences should also be developed, possibly through collaborative efforts and critical areas of intervention, such as protecting strategic water sources.

How Should Water Law Be Taught? Practical and interactive teaching methods are favoured, including case studies, simulations, hands-on exercises, real-world examples, and problem-solving exercises. Multi-disciplinary approaches are encouraged, but the specifics of which hard sciences are most relevant for water lawyers need further exploration. The inclusion of 'soft skills' like negotiation, collaboration, co-operation, and mediation in the curriculum is suggested.

When Should Water Lawyers Be Trained? Water law expertise develops over time through a combination of foundational training, workplace experience, further education, and informal learning. Training opportunities are valuable throughout one's career. There is a need for more sophisticated training programs for senior departmental officials and Environmental Management Inspectors (EMIs) to address their specific requirements.

Where Should Water Lawyers Be Trained? Water law expertise can be cultivated through various means, including academic institutions, self-study, supervised research, formal and informal learning opportunities,

and on-the-job experience. Communities of practice play a vital role in learning, and the development of reflexive learning spaces within government is recommended.

Why Should Water Lawyers Be Trained? Water law training currently has a compliance-centric focus, but there's a need to incorporate values and ethics, such as sustainability, equity, transformation, rationality, procedural fairness, and environmental principles, into the curriculum. The question of how to instil these values and ethics in mindsets and behaviours could be a topic of future research.

Specific recommendations emerging from this research are as follows:

- A communities of practice framing should guide a future investment plan for water law training.
- Knowledge reproduction and 'training' within the customary law community of practice requires further investigation.
- Further research is required on the training needs within the water administration community of practice, particularly as regards the values that South African water law espouses.
- Peer-to-peer learning in the government community of practice should be encouraged and strengthened.
- The administrative law component of occupational water law offerings should be strengthened or further developed.
- Further research is required to map the scope and dynamic of intergovernmental relations in water law and the skills that sustain successful inter-departmental collaboration.
- DWS, COGTA and the South African Local Government Association should collaborate on appointing a service provider to develop an inter-disciplinary, inclusive water services law offering for local government officials.
- Investigate and support the establishment of a multi-disciplinary training institute for water.
- Explore the possibility of a collaborative online water law offering.
- Consider a more regular water-focused moot court competition.

ACKNOWLEDGEMENTS

The project team wishes to thank the following people for their contributions to the project.

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ACRONYMS & ABBREVIATIONS

CBSS	Carin Bosman Sustainable Solutions
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EMI	Environmental Management Inspector
NEMA	National Environmental Management Act 107 of 1998
NWA	National Water Act 36 of 1998
NWU	North-West University
SAICE	South African Institute of Civil Engineers
UCT	University of Cape Town
UP	University of Pretoria
WISA	Water Institute of South Africa
Wits	University of the Witwatersrand
WSA	Water Services Act 108 of 1997
WUL	Water Use Licence

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CHAPTER 1: BACKGROUND

1.1 INTRODUCTION

This Report on Water Law Reform Capacity Building Themes, Gaps and Opportunities is the fifth deliverable under the WRC Project *Consolidating and Catalysing South African Water Law Expertise* (No. 2022/2023-00888) ('the Project'). The Report **presents the findings of a qualitative research study into the gaps, needs and opportunities associated with water law training in the Republic of South Africa.**

Water law training is critically important for achieving the transformative vision of South Africa's constitutional order. The system of democratic constitutionalism instituted since 1994 is based on constitutional supremacy and one of the founding values of the Constitution is the rule of law. The concept of transformative constitutionalism, as introduced by Karl Klare (1998) and developed by other South African constitutional law scholars, expands traditional underpinnings of the rule of law (equality before the law, rationality, reasonableness, and non-arbitrariness) to the project of 'inducing large-scale social change through nonviolent political processes grounded in law' (Klare, 1998).

In the water sector, **the vision of transformative constitutionalism is supposed to have been achieved through the National Water Act 36 of 1998 (NWA) and the Water Services Act 108 of 1997 (WSA).** However, over the past two and a half decades, these pieces of legislation have given rise to an **exceedingly complex regulatory framework.** The NWA, for example, despite being amended only twice, now boasts more than 120 regulations, some of which have undergone multiple revisions. The intricate water law framework must also be understood in conjunction with other complex regulatory frameworks, such as those developed for the environment and municipal government in the democratic era.

Adding **another layer of complexity is the need to bridge technical legal expertise with the multitude of disciplines underpinning water law,** inclusive of disciplines in other social sciences and the natural sciences. While water sciences rely on legitimate truth-seeking procedures, they are not immune to elite capture, which can distort the truths these disciplines aim to represent. It's asserted that law should be founded on scientific evidence-based decision-making, but science also relies on law to ensure accountability in the interest of its long-term integrity.

To cope with the rapid and highly technical developments in South African water, there is **a pressing need for investment in the capacity to understand, interpret, and enforce water law.** With an anticipated overhaul of water laws, there was an opportune moment to focus on developing an evidence base for the knowledge and capacity essential to continue evolving and implementing water law effectively in the country.

1.2 PROJECT AIMS, DELIVERABLES AND PROGRESS TO DATE

In response to this need, Wits University proposed an 18-month project with the following aims:

1. Map the current community of practice (academic, public and private sector, civil society) active in the field of water law, including assessment of the current levels of capacity to produce law graduates specialising in water law.
2. Identify key themes, trends and gaps in the current body of knowledge on South African water law.
3. Contribute to development of an agenda for future investments in research and capacity building on water law.

4. Organise an intervarsity interdisciplinary national moot court competition on a current hot topic in South African water law.

The Project unfolded over four phases, some of which ran concurrently.

The **first phase** entailed conceptualising water law and the extent of water law expertise and concluded with the delivery of the project inception report in May 2022. This report contains important detail on the conceptual framing of the Project (see section 1.3.1 below).

The **second phase** of the project required surveying the water law training *status quo* and developing a database of water law experts in South Africa, while the third phase (which ran concurrently with the second) involved organising an intervarsity interdisciplinary moot court competition on a water law topic and developing a training manual for use in water litigation. The training database was compiled in September 2022 and updated in October 2023 and the Water Law Expert database comprising the names, contact details and areas of expertise of some 700 water law experts was submitted to the Water Research Commission for review in November 2022.

The **third phase**, being the organisation of the moot court competition, commenced in July 2022 and culminated when the finals of the competition were hosted at the Constitutional Court in April 2023. The moot court competition attracted over 400 individual entrants from 16 institutions of higher learning, and several science entrants from academic institutions. The moot court phase also involved developing a training manual to assist future litigants in the water space particularly from the perspective of the law-science interface. A draft training manual was compiled and submitted for review in February 2023, while a report on the intervarsity moot court competition was submitted in July 2023.

1.3 SCOPE, METHODOLOGY AND LIMITATIONS

The **fourth and final phase** of the Project commenced in May 2022 and was due to conclude in November 2023. In this phase of the Project, the Project Team aimed to gather evidence on water law training gaps, needs and opportunities through a mixed-methods approach: Firstly, through an online questionnaire sent to all (700+) individuals included in the Water Law Expert Database; and secondly, through qualitative research involving thirty (30) one-on-one interviews with experts who indicated their willingness to participate. Arising from the need to conduct more interviews after a first round, an application for a short extension till January 2024 was submitted.

This section describes a key conceptual underpinning of the inquiry into water law training needs, gaps and opportunities through the online questionnaire and interviews, namely the notion of **water law communities of practice**. It then describes the methods used to gather data through the online questionnaire and interviews and how the data from these instruments was coded and analysed.

1.3.1 Water law, water law expertise and communities of practice

To conduct an inquiry into water law expertise in South Africa and the gaps, needs and opportunities relating to water law capacity development, the Project Inception and Strategic Planning Report proposed a working hypothesis of 'water law' and 'water law expert'. Relying on the path finding work of Lave and Wenger (Lave & Wenger, 1991; Wenger, 1998), it also proposed water law communities of practice as a key conceptual frame.

After feedback from the Project Reference Group, the revised working definition of water law for purposes of the Project was the following (Field, Koitsioe & Kamolane, 2022):

Water law, principally and most obviously, refers to the two statutes enacted to realise the section 24 constitutional right to environment and the section 27(1)(b) right of access to sufficient water, namely the National Water Act 36 of 1998, and the Water Services Act 108 of 1997, along with the extensive technical regulations, general authorisations, rules, directives and norms and standards since promulgated under their respective authority. The water law regulatory framework forms part of a broader system of environmental regulatory law based on the National Environmental Management Act 107 of 1998 as the framework legislation. The environmental management principles articulated in section 2(4) of this Act apply to water resources. The Promotion of Administrative Justice Act 3 of 2000 undergirds all regulatory law and decision-makers must comply with the standards for administrative decision-making set out in this Act, which are in turn aimed at ensuring respect for the right to administrative justice in section 33 of the Constitution.

In addition to these national laws, there are hundreds of municipal by-laws dealing with water, passed under the authority of the local government mandates set out in Schedules 4 and 5 of the Constitution and adopted in terms of municipal legislation. As a primary source of legal authority, these by-laws also form part of water law.

In line with the recognised sources of South African law, water law also includes the decisions of the magistrates' and superior courts and the Water Tribunal, as well as international treaties focused specifically on water or containing water-related provisions. For purposes of this Project, international treaties relating to the marine environment are deemed to fall outside the scope of water law.

Customary law is constitutionally recognised, and rules relating to the use of water form part of systems of living customary environmental law. We, therefore, submit that customary water law expertise should be included within the ambit of water law for the purposes of the Project.

Recognising that water law experts could have diverse forms of engagement with this body of law, the Project identified 16 forms of material engagement with water law to identify potential water law experts (see **Appendix A** for the full list).

A community of practice, as developed in the theory of Lave and Wenger, refers to a group of people (who need not be physically co-located) who share a knowledge domain (such as the provisions of the NWA); a community founded on regular interaction but also the willingness to exchange ideas (such as interactions amongst academics in the process of examining, supervising students and sharing ideas at conferences); and common forms of practice (for academics, to continue the example, publishing, teaching, supervising). One of the key insights arising from Lave and Wenger's work is that knowledge is also located in the social interaction of such communities of practice, which are especially important for transferring tacit knowledge.

Based on the forms of potential material engagement with water law, the Project Team identified seven potential water law communities of practice: Academic, Government, Water Law Administration, Legal Fraternity, Living Customary Environmental Law, Consulting and Social Justice. **Figure 1.1** sets out the communities of practice and associated roles.



Figure 1.1: Water law communities of practice

The notion of such communities of practice featured in the framing of questions for the online questionnaire and interviews and guided the findings in this report.

1.3.2 Online questionnaire

The Human Research Ethics Committee (Non-Medical) at the University of the Witwatersrand granted ethics clearance for the online questionnaire and interviews on 10 February 2023 under Protocol No. H22/09/05. The ethics clearance process included obtaining permissions from a variety of organisations to conduct the interviews.

The online questionnaire was reviewed by the Reference Group (see **Appendix B** for the final version) and set up in a Google Form to allow for automatic tabulation of the results. The link to the Google Form was included in an email introducing the aims of the project and introducing Professor Tracy-Lynn Field as the Principal Investigator and Basetsana Koitsioe as Researcher. The email explained that we had identified the recipient as a water law expert and invited them to take part in the online questionnaire on gaps, needs and opportunities in the water law sector. The email explained that the online questionnaire asked for some personal information as defined in the Protection of Personal Information Act 4 of 2013. Specifically, that it included questions on the nature of their water law expertise, how they use water law in their work, and whether they had any formal training in water or administrative law. It also explained that the online questionnaire was both confidential and anonymous but that there was an option to provide contact details at the end of the questionnaire if they are willing to participate in a follow-on formal interview.

Between 17 April 2023 and 20 June 2023, the email containing the link to the online questionnaire was sent to 700 individuals included in the Water Law Experts Directory. The email was sent in tranches to make responding to any follow up manageable. A detailed account of when each tranche of emails was sent out and responses received is set out in **Appendix C**. In total, as far as was possible, emails were sent to all individuals included in the Water Law Experts Directory twice. By mid-June 2023 the Project Team had received **45 responses to the online questionnaire**.

1.3.3 Participant interviews

A total of 19 participants provided their contact details and indicated they were willing to be interviewed. On 22 June 2023 the Researcher forwarded Participant Information Sheets and Consent Forms (see **Appendix D**) to these 19 participants, and of these 16 agreed to an interview slot. The semi-structured interviews were conducted and recorded on MS Teams (for the Reference Group approved interview schedule see **Appendix E**). Automatic transcription was enabled, and the transcription was subsequently transferred to MSWord and checked against the audio recording. An hour was allocated to each interview, but the average interview time was 45 minutes. Sixteen interviews were conducted over the weeks of 26 June 2023-11 July 2023. Two of the interviews failed to record and interviewee's responses were reconstructed from the Researcher's written notes.

To reach the goal of 30 interviews on 24 July 2023, additional interview invitation emails were sent to the training community of practice. In addition, 10 participants were randomly selected from the Water Law Experts Directory and an interview invitation email was sent to them as well. Unfortunately, none of these participants agreed to be interviewed. On 31 July follow up emails were sent to participants who had not responded.

During August and September 2023, the transcriptions were prepared, and analysis and coding of the data commenced. At this point the Project Team reached out to Mr John Dini of the Water Research Commission who suggested a new set of leads. A second round of interviews following the same format and modality were concluded in the first two weeks of October 2023. A total of eight additional interview were conducted, bringing the total number of interviews to **24**.

1.3.4 Coding and analysis

To abide by the conditions of the ethics clearance which required that any identifying features of the data (name, institutional affiliation, or position) be deleted, the transcripts were first cleaned of such identifying information. The Principal Investigator undertook a close reading of all initial 16 transcripts and identified a limited set of codes to identify sub-themes relating to the three broad categories of water law work, water law training (pathways and provision), and water law training challenges, gaps, needs and opportunities. The logic and detail of all the codes are set out in the introductory section of each of the ensuing chapters.

The codes and associated quotations from an analysis of the first 16 transcripts were captured in a Master sheet on MS Excel. Thereafter, using the basic sorting function, the quotes relating to each code were pasted onto separate sheets, which consolidated quotes for each sub-theme across transcripts. From these consolidated quotes further sub-themes emerged. For example, in the quotes relating to 'water law challenges' it was possible to discern quotations relating to epistemological boundaries, policy uncertainty and provisioning challenges. The Principal Investigator used the same set of codes to analyse the data gathered by the online questionnaire. A description of the pertinent codes is provided at the start of each chapter.

Prior to the second round of interviews, the Principal Investigator conducted a two-hour training session with the Researcher on the coding process. The second set of interviews were subsequently coded by the Researcher and checked by the Principal Investigator.

Based on this process of analysis, findings on the data gathered by the online questionnaire and interviews were synthesised in this Report.

In recognition that the water law sector is quite small, to further protect the identities of the interviewees the gender of interviewees was **randomly altered** in the final report (i.e. not all he's were changed to she's and vice versa, but some were).

1.3.5 Limitations

The findings in this report are limited by the fact that in the allotted time the Project Team did not succeed in securing a balanced representation of members of the water administration community of practice (despite numerous attempts). Local government is also under-represented. The methods employed to reach water law experts (electronic media) also mitigated against inclusion of practising experts of living customary water law.

1.4 STRUCTURE OF THE REPORT

The Report comprises five chapters. Chapter 1 sets out the project aims and deliverables. Chapter 2 reports on findings relating to Water Law Work. Chapter 3 sets out findings relating to Water Law Training (Pathways and Provision), while Chapter 4 contains findings on Water Law Training Challenges, Needs, Gaps and Opportunities. The Conclusions and Recommendations are contained in Chapter 5.

CHAPTER 2: WATER LAW WORK

2.1 INTRODUCTION

The project assumes that **water law training should support the ways in which actors from different communities of practice use water law in their work**. The first parts of the online questionnaire and interviews probed actors' experience along three dimensions of water law work, namely approach, focus and sources of law. All three dimensions of water law work could shape the pedagogy, curriculum, and assessment of water law training offerings.

Approach to water law work (coded WLW-A) captures the orientation to the use of water law. For example, an orientation of teaching or research, is distinguishable from regulating, administering or adjudicating. In the questionnaire, respondents were asked to indicate *how* they used water law in their work and could respond to one or more of eight categories (see Table 2.1 below, column 1). A catch-all category of 'other' was also provided. In the interviews, participants were expressly asked how they use water law in their work.

The focus of water law work (coded WLW-F) pertains to which aspects of water law feature most prominently, for example, a specific focus on water pollution, or human rights, or water servitudes. In the questionnaire, respondents could respond to one or more of 17 categories in addition to a catch-all category of 'other' (see Table 2.1 below, column 2). In the interviews, participants were asked to respond to the question: 'Which aspects of water law tend to come up most often?'

The questionnaire and interviews also explored the sources of water law. In the questionnaire, respondents were asked to indicate which sources of water law they used in their work according to eight categories and a catch-all 'other' category (see Table 2.1 below, column 3). In the interviews, participants were not expressly asked which sources of law they used in their work, but these could be implicitly gleaned from their answers to the approach and focus of water law work. Responses were coded according to particular sources of law (WS-NWA, WS-WSA, WS-HR, WS-Env, WS-C, WS-Admin and WS-Other). Participants were expressly asked about the importance of administrative law in water-related work.

Table 2.1: Summary of water law work codes and questionnaire categories

Approach to Water Law Work: WLW-A	Focus of Water Law Work: WLW-F	Sources of Water Law: WS-NWA, WS-WSA, etc.
<ul style="list-style-type: none"> • Advisory • Operational • Regulatory (licensing and compliance monitoring) • Enforcement • Adjudication • Advocacy and campaigning • Teaching • Research • Other (please specify) 	<p>Compliance-related</p> <ul style="list-style-type: none"> • Licensing • Existing lawful water uses • General authorisations • Control of water pollution • Compulsory licensing • Reserve determination and water classification <p>Principled</p> <ul style="list-style-type: none"> • National environmental management principles • Public trusteeship <p>Institutional</p> <ul style="list-style-type: none"> • Functioning of catchment management agencies • Functioning of water services authorities • Functioning of other statutory water institutions) 	<ul style="list-style-type: none"> • Constitution • National Environmental Management Act • National Water Act • Water Services Act • Administrative law (Promotion of Administrative Justice Act) • Living customary law • Municipal by-laws dealing with water • International water law • Other, please specify

Approach to Water Law Work: WLW-A	Focus of Water Law Work: WLW-F	Sources of Water Law: WS-NWA, WS-WSA, etc.
	<ul style="list-style-type: none"> International water management Intergovernmental water relations <p>Technical</p> <ul style="list-style-type: none"> Water tariffs Government water works Dam safety Water servitudes 	

The following sections set out key findings on approach, focus, and frequency across the questionnaire and interviews.

2.2 APPROACH

Research, teaching, advisory, regulatory and enforcement approaches were the most common among the 45 respondents to the online questionnaire (see Figure 2.1 below).

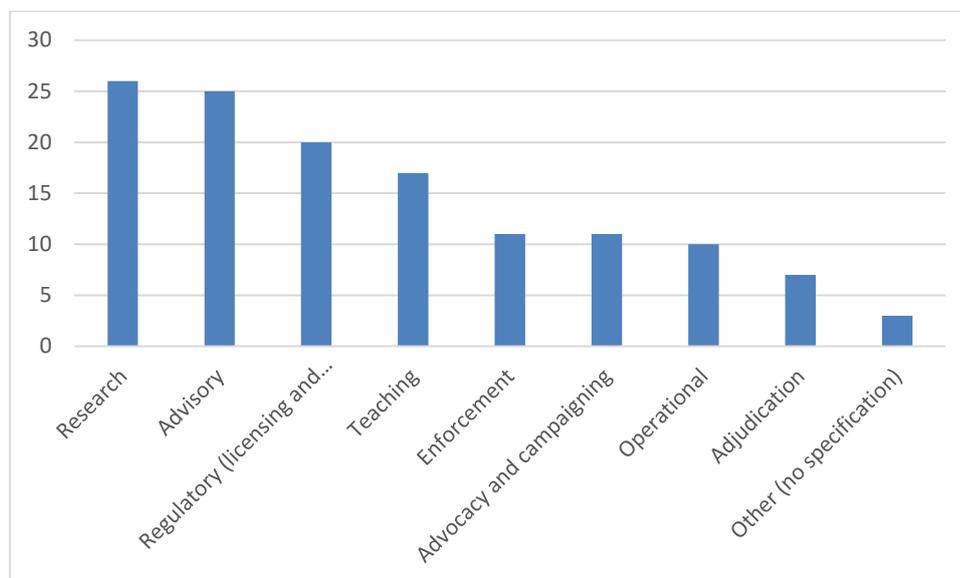


Figure 2.1: Approach to water law work (online questionnaire)

Interview participants included senior researchers, adjudicators, advisers, compliance and enforcement officials and water law activists. Responses to the question how water law is used in water law work illuminates **practices** and **values** associated with that work that could be relevant to designing a water law training offering. The following sections elaborate on the practices of associated with research, advisory, regulatory and enforcement, and adjudicatory approaches.

2.2.1 Research

Most of the participants who framed their general approach to water law as ‘research’ form part of the academic water law community of practice and most indicated they had **published** in the field. Participant 16 went further, however, to note that water law research enables her ‘to engage in policy discussions and contribute to the development of best practices in water law and policy’ (Transcript 16, p. 1). She emphasised using her

knowledge to resolve disputes over water, property and productive rights and promote compliance with relevant water legislation (Transcript 16, p. 1). Teaching students **how to transfer academic research into policy and practical contexts** could be a useful add-on to water law training in academic institutions.

2.2.2 Advisory

Participants whose general approach to water law work could be characterised as advisory fall within the consultant water law community of practice. Their services extend to both government and private clients, with **differing conceptions of the public and private values and goods underlying their work**. Participant 2, for example, described his water law work as *'keeping people out of trouble' and 'helping to educate people on their rights and responsibilities, including government officials and consultants'* (Transcript 2, p. 1). The value of assisting government officials to draft the right documentation – such that directives would not be issued to people who had done nothing wrong, for example – animated his work. Another water law adviser, offering services predominantly to private clients, described the foundation of his business as the protection of water resources: *'[O]ur mission is firstly to help people so that we can help the environment'* (Transcript 12, p. 1). Participant 20 was actively involved in advising the Minister of Water and Sanitation on regulations with a view to addressing failing services delivery (Transcript 20, p. 1).

In general, however, water law advisers **emphasised the value of compliance** with water, environmental, and natural resource legislation. Participant 8, for example, described her water law work as:

[B]asically conducting the EIAs, conducting the water use licences regarding the legislation around NEMA, National Water Act, Waste Act, and any other applicable legislation that pertains to licencing or permitting from an environmental perspective. So yes, that's my day-to-day (Transcript 8, p. 1).

Participant 11 remarked that:

So in my current mining consulting company, we do water use applications for mining companies. We also do compliance with water, with the National Water Act (Transcript 11, p. 1).

Water law advisers' skills extended beyond advising on various licensing applications, to **auditing and monitoring of issued water use licences, verifying existing lawful water uses, and advising on institutions**, such as transforming an irrigation board to a water user association.

Some of the services offered by water law advisers **require both scientific and legal expertise**. Participant 15, for example, uses scientific and legal knowledge to offer specialised services on water pollution. Her work aims at *'getting clients to apply Section 19 [of the National Water Act] and prevent water pollution ... giving clients advice on authorisation and pollution interpretation'* (Transcript 15, p. 1). Several water law consultants started off their careers as engineers and had assimilated knowledge of water law through either training or experience.

While a compliance-framing predominated, Participant 12 emphasised the **role of negotiation** in his water law work. When a farmer constructs an illegal dam, for example, their firm steps in to see whether the discretionary powers awarded through legislation and a 'liberal interpretation of the law' can be used to avoid the wastage of funds associated with breaking down and reconstructing the illegally-constructed dam wall. Through 'informal mediation and talks', as well as open and transparent communication with the DWS, they had been able to resolve several cases amicably in this manner (Transcript 12, p. 3). The values implicit in this service appear to be private – client-centeredness and the economic value of preventing the 'wastage' of financial resources. However, Participant 12 was at pains to emphasise the public good character of their work, claiming that their target market *'is anybody that has got an interest in protecting water resources because that is fundamentally the only thing. If someone asks me what is our mission and that is to regulate and protect*

water resources because we, South Africa is in trouble, other African countries are in trouble' (Transcript 12, p. 8).

2.2.3 Regulatory and enforcement

Participants working with a regulatory and enforcement approach included Environmental Management Inspectors (EMIs), licensing officials, and officials working in the Department of Water and Sanitation (DWS) head office, including officials responsible for legal services and legislative drafting. This approach aligns with members of the government community of practice. These participants were **very clear about the link between compliance practices such as licensing and enforcement and public goods** such as protecting water resources and ensuring there is enough water for all. As Participant 5 explained:

Remember your licence is only valid like say for 20 years. And when you come back for the 20 years, we, the licencing section will ask ... Do you have any compliance documents on it? And when I go back and I don't find anything, we will decline your licence. ... And ... yes, we get a lot of backlash but we also need to make them understand that everyone needs to benefit from this water. It's not just for one, it's for everyone (Transcript 5, p. 5).

The water law practices of regulators and enforcers **include writing regulations for the National Water Act**, and conducting **compliance audits** of general authorisations, permits and licences. Echoing the approach of one of the water law consultants, Participant 5 highlighted the **significance of negotiation skills**, in addition to the skill of **initiating collaboration** – both across government departments and with the private sector. Participant 5 framed this as a 'joint venture' towards the **public good of transformation** in the water law sector ('wanting our persons of colour to really get ahead'), as follows:

So water department of water affairs is only responsible for water. We do not come with land. And then we were always issuing water without the land ... it actually started in what, 2016, 2017 when I actually realised that. But we have been doing things not okay. Then my Chief Director ... he used to do these joint ventures where he brings agriculture, he brings rural development, we bring them all together and we try and work with the farmer ... and I could see that it is really working that way. When I came back in 2018 to ..., I was telling my director, we must try and build relationship with other departments because we just come with water. We don't have the land, but yet we want our black, a person of colour to really get ahead (Transcript 5, p. 4).

The implication of this contribution for designing water law training could include, for example, the need to focus on developing skills associated with problem-solving and collaboration amongst diverse interest-holders, in addition to making the public values underlying these initiatives more explicit.

2.2.4 Adjudicatory

An adjudicatory approach aligns with the legal fraternity community of practice. It was difficult to pinpoint water law values in the responses of adjudicators, but the responses highlighted the range of adjudicatory work in which participants were engaged. The work included different types of formal appointment (independent adjudication, work appearing before or serving as a member of the Water Tribunal, and work as a magistrate or as a judge in the High Court). Each of these formal contexts would involve different constitutive rules and cultures (how members of the community are expected to behave) as well as operational rules (different rules of procedure and evidence). In these formal capacities, they had **judged cases in which water issues featured alongside issues governed by environmental, mining and even municipal law**.

2.3 FOCUS

Responses to the focus of water law work **provide information on the depth of specific areas of water law expertise**. The 17 categories listed in the online questionnaire could be grouped into (i) compliance-related water law provisions (licensing, existing lawful water uses, general authorisations, control of water pollution, compulsory licensing (under ss 43-48 of the NWA), and Reserve determination and water classification); (ii) principled provisions (national environmental management principles, public trusteeship); (iii) institutional provisions (functioning of Catchment Management Agencies, functioning of water services authorities, functioning of other statutory water institutions, and intergovernmental water relations); and (iv) specific technical provisions (dam safety, water servitudes, water tariffs) (see Table 2.1 above, column 2). Responses to these categories are set out in Table 2.2 below.

Table 2.2 Focus of water law work (online questionnaire)

Please indicate your specific area(s) of water law experience or expertise?	Response	% of Total
Licensing	31	69%
Existing lawful water uses	29	64%
National environmental management principles	28	62%
General authorizations	28	62%
Control of water pollution	25	56%
Compulsory use licenses	24	53%
Functioning of catchment management agencies	18	40%
Functioning of water services authorities	18	40%
Public trusteeship	17	38%
Functioning of other statutory water institutions	17	38%
Intergovernmental water relations	16	36%
Reserve determination and water classification	15	33%
International water management	13	29%
Dam safety	12	27%
Water servitude	10	22%
Water tariffs	9	20%
Government water works	9	20%

Recalling that the total number of questionnaire respondents was 45, and that respondents were able to select more than one area of expertise, the **greatest depth of expertise lies in the compliance-related aspects of the NWA**. Almost 70% of respondents selected licensing as a specific area of water law expertise, while almost two-thirds selected expertise in existing lawful water uses and general authorisations. Notably, almost the same percentage of respondents selected expertise in the use of the national environmental management principles, confirming the working hypothesis that **the national environmental management principles form part of water law**. More than half of the respondents also selected expertise in control of water pollution and compulsory licensing, but only a third of respondents selected expertise in Reserve determination and water classification.

A lower percentage of respondents selected expertise in the institutional aspects of water law (ranging from 40% to 33%), while only 38% of respondents selected expertise in the principle of public trusteeship. The technical aspects of water law recorded the lowest levels of expertise.

There were also eight responses to the 'other' areas of expertise option, which could be grouped as follows:

- Cognate scientific expertise ('Geohydrology; Hydropedology; Wetland/Riparian/Aquatic and Engineering in all spheres, such as: Agriculture, Residential Development, Industry & Mining')

- General legal expertise (human rights to water, water-related litigation, and adjudication of contraventions)
- Contextual expertise ('Global analysis and policy dialogue on historical justice and decolonization of water law', advocating for SWSA [Strategic Water Source Area] legal protection)

Interview participants' reflections on their areas of water law expertise and focus can be distinguished according to whether they described a **narrow, specific focus on particular provisions of South African water law** or a particular issue; or a **broader focus, either geographically**, or in terms of the range of contextual issues that affect water law.

Most participants described their water law expertise in narrow, specific terms – either in terms of specific provisions of water legislation or specific issues. Participant 6, for example, described his focus as *'[g]enerally it's around section 25, like allocation of rights, transferability of rights, those kinds of things'* (Transcript 6, p. 4), while for Participant 12 *'the foundation .. is section 21 of the National Water Act and existing lawful uses, looking at WARMS data verification, validation data, screening each project as thoroughly as possible'* (Transcript 12, p. 1). Participant 8 described her expertise in terms of processes prescribed in the NWA, Government Notice 704, and environmental legislation such as the Waste Act and Air Quality Act (Transcript 8, p. 2). Participant 18 captured his focus in terms of the broad areas of water uses and water pollution (Transcript 18, p. 2). The specific focus of Participant 19, on the other hand, depended on the needs of the client and could range from the rules relating to drilling a borehole in an urban environment, to construction in wetlands, to flow of rivers protocols (Transcript 19, p. 1).

Participant 7's response was interesting, because he captured his expertise both in terms of provisions in water legislation and a broader ranging, pressing water-related issue (*'So I think most recently my key focus in South Africa has been around this whole issue of water rights for black farmers, black water users, and most particularly around how to protect the water rights of very small scale black farmers. And the whole issue of general authorizations, schedule one, customary water use, etcetera'* (Transcript 7, p. 1)). This kind of focus forms a bridge to the much more-broadly-framed expertise of Participant 1 (legal pluralism, the gender, and the colonial aspects of land and water law) and Participant 16 whose expertise spanned all areas of water law compliance in addition to access to water, water rights, and SADC environmental law (Transcript 16, p. 1). Participant 2 stressed the significant contextual consideration of climate change (*'so you cannot separate a discussion on climate change from a discussion on water legislation. You must ... consider them both'* (Transcript 2, p. 13)).

A few interview participants **framed their focus and expertise in technical and legal terms**. Participant 4, for example, described his expertise as follows:

I'm engineer as you know, but I'm also a lawyer, A LLB degree. I'm a registered professional engineer still and I'm admitted as an ... practising advocate. So I have certain type of knowledge regarding water that other people don't have. Water law is not a purely legal aspect. It is technical, it's technical in nature and so on (Transcript 4, p. 1).

Other participants emphasised **cognate areas of legal expertise** other than environmental legislation. Participant 8, for example, stressed her mining law-related expertise, while Participant 3 mentioned the importance of the cognate legal fields of civil and criminal procedural law.

Finally, and significantly, Participant 5 highlighted **difficulties associated with changing departmental policy and enforcement priorities**, which he linked to leadership instability or even individual preference. While the foundation of his expertise lay in sections 39 and 40 of the NWA, he also stressed that what was prominent 'could be anything' (*'I hear what you are asking, what is prominent? It can be anything. It can be also, it can be on me also. If I am interested in something, I can push for it'* (Transcript 5, p. 4)). Although he

conceded that a changed focus could emanate from his own volition, he ascribed changing areas of focus to instability in senior management, as follows:

So our department has been controversial. Each and every five years we get something new. ...For me personally ...I wish we were in the environmental affairs. They have ministers for long, so why are we ... five year and then we change and then another person comes in, new outlook, new everything. I think if you talk to anyone on the ground, the morale is very low because this forever changes. This forever changes in senior management. We don't really understand why because environmental affairs doesn't have so much changes (Transcript 5, p. 5).

A changing focus is not only a consideration in building morale, efficiency, and efficacy, but is also relevant to determining the content of training programmes, which may need to emphasise **agility in using the law, rather than mere substantive knowledge of particular legal provisions.**

2.4 SOURCES OF WATER LAW

The online questionnaire asked respondents to indicate the **sources of water law** they use in their work. Understanding which sources of law tend to predominate can provide useful information to determine the curricular content of water law training, in addition to indicating which sources of law are neglected or marginalised. Responses to the question 'Which sources of water law do you use in your work?' are set out in Table 2.3 and Figure 2.2 below.

Table 2.3: Sources of water law work (online questionnaire)

Which sources of water law do you use in your work?	Response	% of Total
National Water Act	44	98%
Constitution	40	89%
National Environmental Management Act	36	80%
Water Services Act	33	73%
Administrative law (Promotion of Administrative Justice Act)	29	64%
Municipal legislation and by-laws dealing with water	23	51%
International water law	19	42%
Living customary law	8	18%

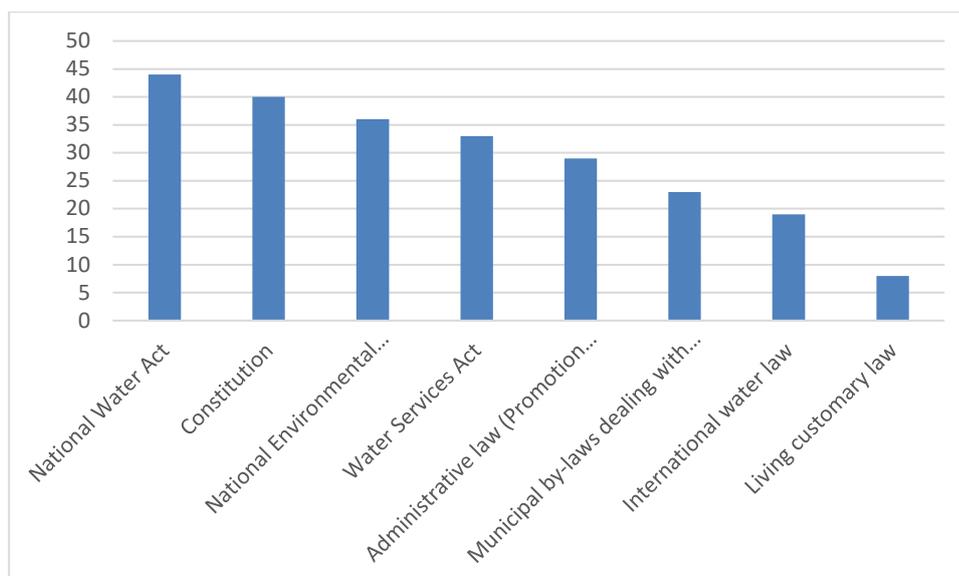


Figure 2.2: Sources of water law (online questionnaire)

Almost all the respondents to the online questionnaire use the NWA in their work, while the vast majority also use the 1996 Constitution and the NEMA. This is an important finding and highlights the significance of focusing on both the focus of water law expertise (where constitutional expertise barely received a mention), and sources. **Fewer respondents use the WSA in their work.** Interestingly, while the interview participants almost unanimously confirmed the use of administrative law in the work, only 64% of the online questionnaire respondents confirmed use of this source of law. **Just over half of the online respondents indicated that they use municipal legislation and by-laws dealing with water,** highlighting the significance of municipal law as a source of water law. The **high percentage of respondents (42%) who indicated use of international water law** is surprising, giving that only 29% of respondents indicated expertise in international water management (see Table 2.2 above), and can be ascribed to the possibility that principles of international law inform the interpretation and implementation of South African water law.

Interview participants elaborated on the NWA, the WSA, environmental law, human rights, administrative law and customary law as sources of water law, as set out in the sub-sections below. The discussion also highlights the critical perspectives of participants on various sources, as valuable insights that should also be incorporated into water law training.

2.4.1 National Water Act (NWA)

Interview participants confirmed the centrality and importance of the NWA as a source of water law. Participant 2, for example, said that the NWA *'is one of those complicated things that even after working, for instance [since] 1994, almost 30 years, I still need to go and double-check and verify. So it's one of those documents that's permanently open on my computer'* (Transcript 2, p. 1). For Participant 5, *'the [National Water] Act is like your Bible'* (Transcript 5, p. 2). Participant 9 observed that *'we literally use the whole Act in terms of whatever work or job that we do have at hand'* (Transcript 5, p. 2).

Participant 20 described the NWA as *'a very radical piece of legislation in the sense that it essentially changed the whole legal framework from riparian rights to essentially nationalization'* (Transcript 20, p. 2). The radical nature of the NWA had led to 'trickiness' in implementation because people with existing rights who also had access to land, couldn't understand why the water was no longer there. *'The complexity with the National Water Act, Participant 20 continued, was really around transformation around making sure that more black people could actually get access to water. But what's become very clear is that that's more like a land transformation issue because you need land in order to use water'* (Transcript 20, p. 2).

Participants offered praise, but also critique of the NWA. Participant 4 remembered that the NWA was described as ‘one of the best national water acts in the world’ when it was drafted and continued that ‘it is probably true. It improved quite a lot on the environmental aspects of the previous legislation (Transcript 4, p. 12). Participant 1, however, criticised the Act’s strong reliance on licensing, asking: ‘So why do you make their life even more difficult with licences? We call it an administrative discrimination injustice. You impose licencing on people who first hardly use water. And second, the costs of getting a licence are much higher, relative to the little bit of water that they use (Transcript 1, p. 4). Participant 7 praised the NWA as ‘sound’ but flagged compulsory licensing as a ‘massive challenge’ and pointed out that the government had failed by not developing a joint land, water, and agrarian reform programme for the country (Transcript 7, p. 6).

2.4.2 Water Services Act (WSA)

Far fewer interview participants mentioned the WSA as a source of water law. Participant 10 praised the clarity of the WSA (in comparison to, for example, the Consumer Protection Act), but Participant 7 described the WSA as ‘more complicated’ and problematic. The problematic features of the WSA, however, needed to be traced to a constitutional framework, as he explained:

In terms of water services, I think we are in a very difficult situation. For starters, I think the Constitution is problematic. I think that the amount of autonomy ... given to local government in the Constitution is inappropriate. It's the Constitution then also says that if there's a problem in local government, it's the provincial Department of Local Government that has to intervene. The Department of Water, the Minister of Water, is held kind of morally accountable for the failure of water services, but actually has limited powers to intervene in water services delivery at local government level. And so we clearly ... have a huge crisis (Transcript 7, p. 7).

For Participant 5, the WSA featured as a source of law for his water law work because his duties include auditing sewerage works. He finds the lack of enforcement measures in the WSA problematic because ‘[w]hen we want to enforce a sewage work, let's say a sewage works is polluting, you will come back to the National Water Act, section 19, section 20. If it's authorised, section 54. So I believe there's no enforcement actions that you can really take in terms of the Water Services Act’ (Transcript 5, p. 2).

Participant 20 underlined the important linkages between the NWA and WSA by pointing out that water service authorities also need to be licensed (Transcript 20, p. 7). The problem with the water services side of law, Participant 20 also noted ‘is that the problem with the water services side of it is it's not all in one Act. There's a whole lot of different acts that impact essentially water services delivery. So it's the constitution, it's the Water Services Act, it's the National Water Act (Transcript 20, p. 2). Implicitly confirming a link between the WSA and municipal legislation and by-laws, she shared that many of the water services conflicts that end up in court are cases where municipalities haven’t set the right tariffs or ‘charged the right thing’ (Transcript 20, p. 5).

2.4.3 Environmental Law

Many participants highlighted the importance of the NEMA and the Specific Environmental Management Acts (SEMAs) that fall under the NEMA as framework environmental law. For Participant 7, the importance of NEMA is ‘obvious’. Participant 8 described the NEMA as a ‘kind of umbrella’ that is a ‘big one’ for their water law consulting work (Transcript 8, p. 8). Participant 2 flagged the specific relevance and importance of the sustainability principles set out in section 2(4) of the NEMA, but also linked this comment with the scientific expertise necessary to understand, for example, what concentrations constitute pollution:

One of the other things that should be addressed ... it's training in the sustainability principles that is in section two of NEMA. I can't teach you the Water Act if I don't talk to you about the sustainability

principles in section two of NEMA and understanding the scientific interpretation of something such as the polluter pays principle. When am I a polluter? What concentration makes me a polluter? What is the carrying capacity principle? Scientifically, what does it mean? (Transcript 2, p. 12)

In terms of the SEMAs, participants stressed the importance of the Biodiversity Act (Act 10 of 2004) as well as the Waste Act (Act 59 of 2008). Participants 7 and 8 linked water management to the protection of biodiversity. Participant 8 flagged the Department of Forest, Fisheries and Environment's (DFFE) online EIA screening tool, which informs applicants for an environmental authorisation on the location of critical biodiversity areas and ecological support areas. As Participant 8 explained:

Another important one that we deal with as part of NEMA actually is the critical biodiversity areas. And this is basically advising us on and also the ecological support areas. So it's a mapping system that shows us basically where these sensitive areas are, and a lot of them are linked to the wetlands or the watercourses or riparian areas or whatever the case may be (Transcript 8, p. 9).

At least three participants said they work a lot with the Waste Act, with one of the drivers being introduction of Integrated Waste and Water Management Plans on the part of the regulator (see e.g. Transcript 8, p. 8). These contributions point to the **need for training providers to be aware of the tools and processes regulators are introducing, which could impact on the curriculum and even assessment of water law training offerings.**

2.4.4 Human Rights and the Constitution

The Constitution features in water law work, although there was disagreement on its importance. Some participants were unequivocal about the Constitution's centrality. Participant 8, for example, remarked that *'[f]rom the broader perspective, we do boil everything down to the constitution and the mention of, I think it's section 24, the one that refers to the environment and how to basically preserve the environment'* (Transcript 8, p. 8). Participant 4 stressed that the Constitution is 'very important', and then offered a detailed explanation of how water issues intersect with human rights:

The Constitution. I mean your constitution is very important. Your whole section nine dealing with equality. Section 24, dealing with the in environment. ... But also you can even talk about section 10, dignity. Even freedom of association is important. I mean can you force somebody to become a member of a water user association? Privacy is important. Can you enter somebody's property to go an inspection? [Participants 10 and 16 also stressed the importance of the property clause] Because how do you determine whether a person is complying with the law of his entitlement? So you have to understand the privacy provision and then also property ... you have to understand section 25 of the constitution, [section] 27 access to sufficient water, access to information ... And then section 33 where we spoke about the administrative law, even access to courts in a certain sense (Transcript 4, p. 14).

But others were more lukewarm in the response. Participant 6, for example, described the contribution of the Constitution as 'quite minor' despite conceding that water management impacts fundamental rights. In his opinion *'you could be quite competent having never really heard of the constitution in some ways. But certainly it would assist'* (Transcript 6, p. 9).

2.4.5 Administrative Law

Interview participants were unanimous in affirming the fundamental and vital importance of administrative law, with Participant 6 going so far as suggesting that water law is actually just a division of administrative law. Participant 17 stressed that *'when you work in government you should know what's*

administrative law' (Transcript 17, p. 3), while Participant 19 described administrative law as 'absolutely key' because even with all the guidance in the legislation and regulations, the regulator still had a lot of discretion (Transcript 19, p. 3). Participants 2 and 16 captured the significance of administrative law for water law work most eloquently:

It is all about administrative justice. It is all about ... securing efficient and beneficial use of water in the public interest. And that implies any decision taken must be aimed at efficiency, beneficial use and public interest. And any decision taken must therefore meet PAJA principles. Now, I can't teach people the water law when I do my training courses without teaching them the principles of administrative justice (Transcript 2, p. 2).

Administrative law serves as a vital tool for ensuring transparency, fairness, and accountability in the decision-making processes of water regulatory authorities. It is essential for safeguarding the rights and interests of stakeholders involved in water resource management. Administrative law is important when it comes to allocation of water use rights based on admin justice, procedure, lawfulness, rationality, especially when it comes to water services (Transcript 16, p. 1).

Participants also highlighted situations in which knowledge of PAJA is extremely useful. On the one hand, Participant 3 explained how **lack of understanding of the PAJA principles poses impediments in litigation**:

I think part of the problem might just be the fact that you need to know both admin law as well as your specific subject under which you are bringing it. Because admin law always works together with something else. So I think that's probably sometimes where it stumbles because we've also seen that people will come with applications and they don't realise they should actually have used admin justice. They sort of bring it up on its own, the court to stop something, whatever or whatever. And they don't realise they could have used or should have done it under PAJA for example (Transcript 3, p. 11).

Participant 12, on the other hand, explained why they have become 'adamant' about using PAJA in their practice, pointing also to how knowledge of PAJA becomes a form of power:

And the PAJA Act has become so useful in two recent cases that we worked on. And the one was actually resolved so quickly by just mentioning it. The DWS ... they immediately assisted us. It was actually quite funny because someone in the department understood that PAJA is important and that ... they didn't follow procedure and that they didn't implement due diligence. And they immediately, they assisted us. It was going to be ... work for weeks and weeks, which we resolved in three hours. It was amazing (Transcript 12, p. 6).

A few participants also had critical perspectives on administrative law. Participant 7 voiced his frustration with the fact that matters get thrown out at the Water Tribunal due to technical, administrative flaws rather than water-related technical or substantive legal reasons. While this was 'incredibly frustrating' he also acknowledged it was important 'because people have a right to administrative fairness and administrative effectiveness' (Transcript 7, p. 4). In this way he also demonstrated awareness of fundamental values underlying administrative law. His comment also highlights the need for different communities of water law practice to understand the basis of the technical administrative flaws.

Participant 1 had a different critical perspective, which she captured in the concept of 'administrative injustice' and 'administrative water grab.' As she explained:

I call it an administrative water grab in a sense that you fill forms and the people who can fill forms in English and who know how to fill forms, we know who they are. So administratively, they are ... already

privileged. ... [The small scale, two-hectare irrigator in Sekhukhune doesn't even know where to get a licence. And the effort is disproportionate to the bit of water that person uses (Transcript 1, p. 11).

2.4.6 Customary Law

Only a few participants mentioned customary law as a source of water law. For Participant 7, a challenge of the South African water law framework is its failure to account for the fact that *'there are still areas of the country where people get their land and their water under customary use'* (Transcript 7, p. 1). Participant 1 pointed out that the geographical application of customary law extends beyond the former homelands, to low-income rural and even peri-urban areas. In this participant's view, water law training needed to start with what people had done for themselves, since time immemorial, because without those arrangements they would die (Transcript 1, p. 13). Participant 7 nevertheless questioned how customary law as *'verbal, lived law'* could be considered in implementing, and possibly even amending the NWA (Transcript 7, p. 2). *'There's some interesting constitutional rulings in other fields that I think have application'*, he mused, before reasserting that *'customary rights actually do need to be recognised'* (Transcript 7, p. 2).

While the interview insights on customary water law are thin, they point to a critical need to accommodate verbal, lived customary law in the training of actors who deal predominantly with statutory water law.

2.4.7 Other Sources of Law

While describing the sources of law around which their water law work centres, interview participants also mentioned other cognate areas of law. Participant 3 highlighted the importance of criminal and civil procedural law, but particularly, the law of evidence. If prosecutors and regulators failed to have their *'ducks in a row'* on the chain of evidence associated with sampling and analysis, it created a *'ton of problems'*. Because prosecutors were so used to a guilty plea (which could include plea bargaining), it was *'really a problem for them'* to prove and know what evidence to present (Transcript 3, p. 7).

A few participants mentioned working with local government law, including the national enactments dealing with municipal structures, systems, and finances. A few participants also use mining legislation extensively in their water law work. Other cognate sources of law include company law, the law governing broad-based black economic empowerment, property law, contract law, criminal law and occupational health and safety law.

While water metering strictly falls under water legislation, Participant 5 flagged the particular importance of the regulation on water metering (Regulations Requiring that the Taking of Water for Irrigation Purposes be Measured, Recorded and Reported GenN 131 of 2017) because *'it's amazing how no-one is basically metering'* (Transcript 5, p. 3).

2.5 SUMMARY AND DISCUSSION

Findings on **approach to water law work** confirm the **wide variety of ways in which members of different water law communities of practice use water law**, which include licensing, compliance monitoring and auditing, enforcement, advising on all compliance-related aspects of water law, writing regulations, adjudicating, researching, teaching, publishing, advising on policy and best practice, and more. The variety of approaches to water law work and associated practices is challenging from the perspective of designing water law training because a single course or even programme will not be able to accommodate this variety in all its nuance. Because water law also involves *work*, it is likely that trainees would want training materials to be clearly relevant. A regulator, for example, is unlikely to want training on how to improve water law research and writing skills and may not even be interested in how to improve legislative drafting. This means that a

training **designed for particular communities of practice** is probably preferable as a framework for guiding investment in future water law training.

The **range of practices associated with particular communities of practice also provide guidance on the content of practical training**, which emerged as an important theme in water law training gaps and needs. The case studies and ‘hands-on’ exercises one would incorporate for training on licensing, compliance auditing and enforcement, for example, would differ from the types of studies and exercises one would present to magistrates and judges.

There are **important ancillary skills associated with core water law practices**, such as the ability to negotiate or initiate collaboration. Such skills training could also be included in training offerings for particular water law communities of practice.

Findings on water law work approach and focus also highlighted a range of **public and private values** associated with water law, ranging from protecting the water resource, transformation, ensuring enough water for all, to compliance as a value-in-itself, client-centredness and preventing the waste of financial resources. Important values relating to administrative law include fairness, transparency and accountability. There is scope to consider how **values can be made more explicit** in water law training, to allow for critical reflection. The current **compliance-oriented** value base of water law in South Africa is also reflected in the fact that the greatest depth of expertise is in the compliance-related aspects of the NWA, with less emphasis on public trusteeship or Reserve determination, for example.

Findings on the **focus of water law work** show **greater depth of expertise in the compliance-related aspects of water law**, compared to expertise in institutional or certain technical areas. This has two possible implications for water law training: On the one hand, it supports allocating resources to sustain this depth of expertise. On the other hand, it suggests there are aspects of water law that could receive greater emphasis. The compliance focus of some experts was also demonstrated in their **tendency to capture their expertise in terms of specific issues, themes or even provisions in water legislation**, whereas others had a much broader perspective that included climate change, gender-related aspects of water, and protecting the rights of small-scale farmers. The broader perspectives not only link to the values base of water law, but also guide **critical perspectives** on the current water law framework (see also the discussion on the various sources of law above), which should be included in a water training programme.

Findings on water law work also showed that some experts **can draw on both scientific and legal expertise** in the services they offer, and there was **emphasis on both cognate scientific (geohydrology; hydrogeology; engineering, ecology, chemistry) and legal fields** (human rights, civil and criminal procedure, and the substantive law relating to the environment, mining and local government). The extent to which these cognate scientific and legal fields can be accommodated in a water law training offering in light of the epistemological nature of these fields (vertically versus horizontally organised knowledge – see further section 4.2.1 below) and certain provisioning challenges (see further section 4.2.3 below) is an important design issue. It is also one which needs to consider the different pathways to water law expertise, as discussed in section 3.4 below.

Frequently **shifting areas of focus in the regulatory and enforcement function** is a problem both for the consistency of enforcement strategy (which also implicates legal certainty) and training provision, as the training regulatory officials receive may no longer be as relevant if the focus shifts.

Findings on **sources of water law** confirm the centrality and importance of the NWA, administrative law, NEMA (especially the NEMA principles), the WSA, municipal by-laws, international water law frameworks, and the Constitution and human rights. The Biodiversity and Waste Acts were also flagged as important. While few participants commented on customary law, at least one participant **recognised the importance of**

understanding how statutory and customary laws intersect. These findings on substantive content should guide the substantive content of water law offerings.

CHAPTER 3: WATER LAW TRAINING: PATHWAYS AND PROVISION

3.1 INTRODUCTION

One of the aims of the evidence-based assessment of water law training was to assess the **water law training status quo** and the extent to which actors from different communities of practice had received **formal water law training**. In addition, or alternately, it sought to assess the **pathways to water law expertise by actors in different communities of practice**. While interviewing water law experts, it also became apparent that many of the interviewees **provide water law training themselves**. They also commented on the water law training of other institutions.

This chapter reports on these themes and draws together data from three avenues of research enquiry: The online questionnaire, in-depth interviews with water law experts, and the findings of a desk-top survey of current water law training offerings.

An initial desk-top survey of water law training offerings was completed in September 2022 and updated in October 2023 (see Appendix F). The online questionnaire asked respondents to indicate whether they had received formal water law training. If so, they were further prompted on the course undertaken or completed, and whether the training was relevant to their water law work. Respondents were also asked to indicate whether they had received formal administrative law training, and if so, the course undertaken or completed. In the interviews, participants were asked to respond to the following questions: Have you received any formal training in water law? If so, what was your experience of the training? Do you yourself offer training in water law? Responses were coded as pathways to water law training (WLT-Path), water law training institutions (WLT-I), and provision of water law training (WLT-P).

The following sections set out key findings on the extent of formal water and administrative law training, water law training pathways, and water law training provision.

3.2 WATER LAW TRAINING STATUS QUO

A detailed overview of current water law training offerings across the board is set out in **Appendix F**. An analysis of the water law offerings in public academic institutions is presented in Table 3.1 which sets out the institution, course steward (faculty, department or school), qualification level, whether the course is embedded in a broader course on environmental management or environmental law (E) or is specifically focused on water law (S), coverage of water law sources or topics in the course, and other related topics covered in the course.

Table 3.1: Analysis of current academic water law training offerings

Institution	Faculty / Dept / School: Course Name	Level	Embedded or Specific	National Water Act	Water Services	Env Law	Admin Law	Constitution & HR	Customary Law	International Water Law	Other
NWU	Faculty of Natural and Agricultural Science:	M.Env. Man	E	NA	NA	NA	NA	NA	NA	NA	No compulsory module but one of the areas of dissertation research for specialisation in Ecological Water

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Institution	Faculty / Dept / School: Course Name	Level	Embedded or Specific	National Water Act	Water Services	Env Law	Admin Law	Constitution & HR	Customary Law	International Water Law	Other
											Requirements is 'Water Management Policy Implementation Interface'
UCT	Faculty of Law: Environmental Law for Non-Lawyers	Post-grad	E	Y	N	Y	Y	Y	N	N	Land-use planning laws, biodiversity, marine living resources, pollution
UFS	Faculty of Natural and Agricultural Science: Integrated Water Management	PGDip	E	Y	N	Y	N	Y	N	N	Engineering, climate, hydrology, ecology, planning, and natural resource management, social development, and governance
UKZN	School of Law: Natural Resources Law, Pollution Control Law	LLM	E	Y	Y	Y	Y	Y	N	N	
Univ of Limpopo	School of Law: Agricultural and Water Law	LLM	S	Y	N	Y	?	?	?	N	Additional information not available
Univ of Limpopo	Dept Water and Sanitation: Water Policy	UG (Y4)	S	Y	Y	N	N	N	N	N	Factors impacting effective water solutions, planning, design and operation of water and sanitation projects, IWRM
UP	Dept Geography, Geoinformatics and Meteorology: Environmental Law	MSc	E	Y	Y	Y	N	N	N	Y	Hazardous substances, mining AND NEMA, energy law, marine and coastal management
UP	School of Law: Environmental Law	LLM	E	Y	Y	Y	N	N	N	N	Marine and terrestrial biodiversity, waste, mining and energy, land use and planning, climate change
Wits	School of Law: Environmental Law	LLB	E	Y	Y	Y	N	Y	N	N	NEMA principles, EIA, air quality, biodiversity, waste
Wits	School of Law: Water Law	LLM	S	Y	Y	Y	Y	Y	N	Y	Water trade, mechanisms for compliance, monitoring and enforcement, strategic water sources areas,

Institution	Faculty / Dept / School: Course Name	Level	Embedded or Specific	National Water Act	Water Services	Env Law	Admin Law	Constitution & HR	Customary Law	International Water Law	Other
											water pricing, climate change
UWC	School of Law: Environmental Law	UG	E	Y	Y	Y	Y	Y	N	N	Module 4 consists of Water Law and Management
Univen	Dept Hydrology and Water Resources Management: Water Law and Institutions	UG	S	Y	Y	N	N	N	Y	N	User participation in technical, financial and administrative operations

There are also a few research institutes or centres dedicated to water at some public higher education institutions. These include the University of the Western Cape's Institute for Water Studies, the Future Water Institute at the University of Cape Town, the Centre in Water Research and Development (CiWARD) at Wits, and the Institute for Water Research at Rhodes University. Although these research-intensive are involved in supervision of higher degrees, and some do also present courses, as far as could be ascertained none of them currently present a course on water law or governance.

An analysis of water law courses offered by private companies or non-profit, professional and government institutions is set out in Table 3.2. This table similarly canvasses the substantive scope of the water law course, along with the name of the service provider and duration of the course. The table only lists service providers who offer publicly- or professionally available short courses on water law or governance. At least two other private service providers (IMBEWU Sustainability Legal Specialists (Pty) and Inlexso Innovative Legal Solutions) offer customised and focused legal training, including training on water law. SIZA (Sustainable Agriculture in Africa) offers training on its Environmental Standard, which includes basic knowledge of the South African water law framework. The Rand Water Academy was also set up to provide training, particularly in water services, but does not have any current projects that involve teaching on water law.

Table 3.2 Analysis of current private water law training offerings

Name	Course-name	Duration	Embedded or Specific	National Water Act	Water Services	Env Law	Admin Law	Constitution & HR	Customary Law	International Water Law	Other
All Connections	Occupational Certificate: Water Regulation Practitioner (SAQA ID101471)	12 months?	S	Y	N	N	Y	N	N	N	Incorporates practical skill and workplace experience. Exit level outcomes are to develop water quality reports, conduct inspections and audits and evaluate water use licence applications
CBSS/WISA	Water Governance; 3 CPD points SACNASP and ECSA	3 days	S	Y	Y	Y	Y	Y	N	Y	Dam safety and types of servitude

Name	Course-name	Duration	Embedded or Specific	National Water Act	Water Services	Env Law	Admin Law	Constitution & HR	Customary Law	International Water Law	Other
SAICE	Water Law in South Africa	?	S	Y	Y	N	N	Y	N	Y	

From the foregoing, **there are clearly water law training courses that already address most of the fields respondents and participants defined as ‘water law’.** Wits and the University of Limpopo are the only public academic institutions that offer a specific water law course at a master’s level. Faculties or schools of law at other public institutions either offer water law as a module or component of environmental law, natural resources, or pollution law typically at a postgraduate level (UCT, UKZN, UP) or not at all (e.g. North-West University’s environmental law programme has no water law component, and neither does UP’s online environmental law course).

The Wits water law course covers most of the fields of water law, excepting customary law. The course, however, assumes a foundational knowledge of constitutional and administrative law principles and does not specifically teach basic principles of administrative justice. It also contains no ‘practical’ component that would be of value to regulators or even WUL applicants (e.g. evaluating a WUL application or preparing an Integrated Water and Waste Management Plan (IWWMP)). However, the course is **geared toward the legal services community of practice** and has incorporated practical assessment tasks such as preparing a water use licence appeal to the Water Tribunal. The University of Limpopo’s LLM in Development includes a course on Agricultural and Development Law.

Water law is embedded in a broader offering on environmental law in the UCT course ‘Environmental Law for Non-Lawyers’, but the course stands out from other academic offerings in creating a multi-disciplinary space where scientists of various stripes can engage with environmental law, thus promoting a horizontal learning path (see further, the discussion in section 3.4.6 below). Notably, **no public institution appears to offer a ‘Water Science for Non-Scientists’ course**, although this gap is possibly accommodated by courses on environmental management.

There are currently **two major private water law courses**: The first offered by Carin Bosman Sustainable Solutions (CBSS) in co-operation with the Water Institute of Southern Africa (WISA), and the second presented under the auspices of the South African Institute of Civil Engineers. Both courses have good coverage of the main fields of water law, with the CBSS/WISA course placing particular emphasis on the application of administrative justice principles and the preparation of an IWWMP.

The Occupational Certificate presented by All Connections seems **geared primarily toward the government community of practice**, and is balanced between knowledge, practical skill, and workplace experience modules. There appears to be very little emphasis on the principles of administrative justice in the course offering.

The omission of customary law is immediately evident, and the only institution that seems to incorporate customary or traditional institutions relating to water in a course is the undergraduate course in Water Law and Institutions at the University of Venda.

From the alternate foundational knowledge base of various sciences, the universities of Limpopo and Venda offer interesting water law and governance-related courses as part of undergraduate programmes dealing with sanitation (Limpopo) and hydrology (Venda), respectively. The inclusion of modules on water policy in these degrees promotes multidisciplinary perspectives in foundational education (see further section 3.4.1 below).

Cognate legal disciplines – such as biodiversity law, waste law, mining law, municipal planning – are taught alongside water law in some courses, either because water law is embedded in a course on general environmental law, or as a result of additional specific topics covered in water law-specific courses. None of the water law courses based in faculties or schools of law, however, teach any water-related science.

3.3 EXTENT OF FORMAL WATER LAW TRAINING

A significant majority of respondents to the questionnaire (70%) had not received any formal water law training (see Figure 3.1 below). Of the 14 respondents (30%) who indicated they had received formal water law training, 12 provided detail on the course undertaken or completed (see Table 3.3). **Most respondents were trained in water law as part of training in environmental law, either at an LLB or LLM level.** Two respondents mentioned specific water law short courses or certificates (offered by Wits and Rhodes University respectively); a further two respondents indicated they had undergone EMI training, and one respondent had been trained in water law as part of their doctoral studies. The type of formal training of the remaining two respondents was unclear.

Table 3.3: Type of formal water law training (online questionnaire)

Type of formal training	No.
Environmental Law (LLB or LLM)	5
Short course or certificate	2
EMI training	2
Unclear	2
Doctoral	1

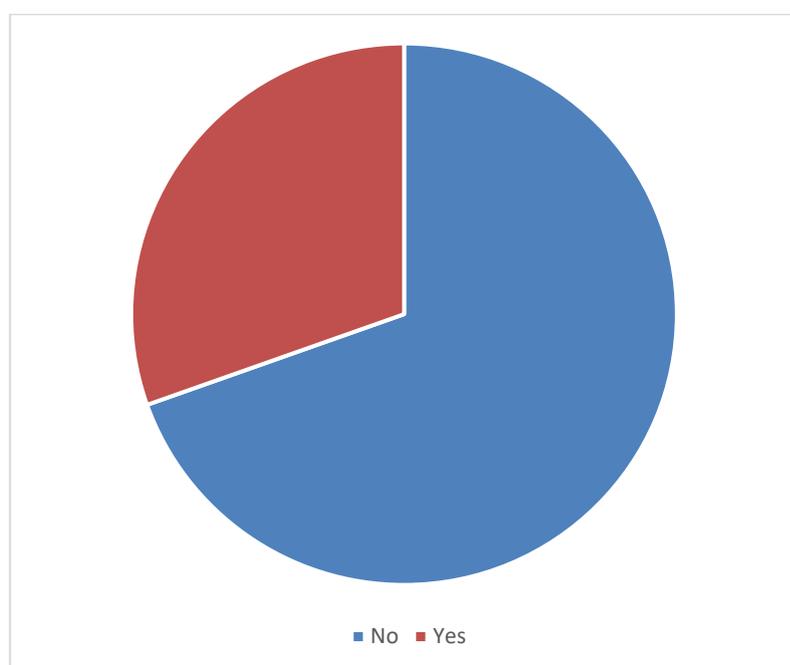


Figure 3.1: Extent of water law training (online questionnaire)

The online questionnaire asked respondents to indicate whether the water law training was relevant to their water law work. All but one of the respondents who answered this question confirmed that the training was relevant, with only one respondent indicating the training was ‘mostly’ relevant.

A larger proportion of respondents (47%) had undertaken or completed formal administrative law training (see Figure 3.2 below), although they were still in the minority. Of the 18 respondents who provided further detail on the type of course undertaken or completed, the vast majority (89%) indicated received formal training in environmental law as part of an LLB or LLM programme, with only two respondents indicating the training had been part of EMI training.

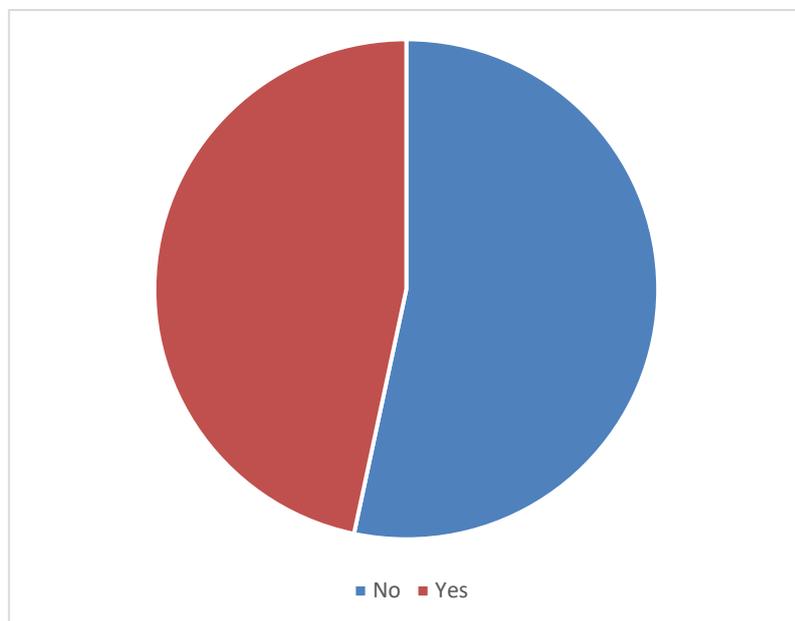


Figure 3.2: Extent of administrative law training (online questionnaire)

These findings confirm the project hypothesis that **water law expertise is constituted by either a mixture of formal legal training and experience (through legitimate peripheral participation in communities of practice), or by experience alone.** These experiential pathways to water law expertise were explored in the interviews.

3.4 WATER LAW EXPERTISE PATHWAYS

Several interview participants shared their pathways to water law expertise. Their accounts bring to light **a model of common and converging pathways to water law expertise, notwithstanding different starting points in either law, or science-based formal education.** From different forms of foundational tertiary education, participants progressed to expertise through a mixture of work-based experience, further formal education, further informal training, and provision of water law training. The sub-sections below outline participants' experience.

3.4.1 Foundational education – Different Starting Points

Most interview participants had concluded some form of tertiary education, with several having more than one tertiary degree. **Participants nevertheless differed in terms of whether their foundational formal education was in science, humanities, or law.** About half of the participants started off with a science-based degree. Participant 2, for example, first completed an honours in chemistry, Participants 4 and 8 first studied engineering, Participant 14 completed a masters' degree in ecology. Others started off with science-based degrees in environmental management. Participants 6, 16, 18 and 19 through 23 started with legal degrees, while Participant 7 commenced her tertiary education in the field of creative arts. Participant 10 started out with a BA in Political Science.

None of these differing starting points necessarily entailed water-specific education or training.

Participant 16 (LLB and LLM) claimed that *'I have not received formal training in water law, I am self-taught'* (Transcript 16, p. 1). Participants 18 and 19 both completed under- or postgraduate courses in environmental law that covered water issues. But Participant 18 stressed that water law was one of those subjects that one tends to become an expert on *'independently'* (Transcript 19, p. 2). Compared to becoming a 'mining lawyer' or a 'mergers and acquisitions lawyer' the pathway to becoming a water lawyer was less clear, Participant 17 observed: *You find your way there by accident* (Transcript 17, p. 2).

Participant 2, with a foundational education in science, said the following:

I did my honours degree in chemistry ... even with an honours degree in chemistry, we were not taught water chemistry. We were taught organic chemistry because everybody said, now there's jobs! That's SA after all, so you need to know petro-chemistry.... What I know about water chemistry, I learned myself with my basic chemical background knowledge (Transcript 2, p. 4).

The self-teaching that these participants reported, however, would nevertheless have been framed by the epistemological structures of their foundational degrees, as Participant 2 intimates. **From these starting points, future water law experts could potentially move in two directions: Vertically, toward greater specialisation, or horizontally, toward knowledge of a broader range of disciplinary fields.** Participant 4 captured the tension and dynamic of these alternate paths very well when he recalled the early stages of his career:

[W]e were quite a lot of engineers who qualified those years and through bursary schemes of the Department of Water and Sanitation, they were looking for ... they knew they are going to be involved in this infrastructure development as far as water is concerned. So I had long discussions also with people and said, 'Oh if I really want to study further, must I go into a vertical line, a PhD in engineering or should I go to a vertical horizontal line, other fields?' And all the senior people said, 'Look, here we are in a development stage but we know the environment, the economics and the amount of water available will result in that. We have to look at other things, also closed catchments, you need much more legal understanding of the matters. You need much more economical understanding and environmental understanding.' I mean that is 40 years ago ... and that that's why I decided to go into a horizontal way of understanding (Transcript 4, p. 4).

Some participants pursuit of this 'horizontal way of understanding' is reflected in their study of environmental management.

3.4.2 Environmental Management Studies – A Point of Convergence

While some participants started off with foundational tertiary qualifications in environmental management, others supplemented their education with further qualifications in this field. Participants 2 and 15, for example, completed master's degrees in environmental management from North-West University, Participant 7 completed a master's in environmental science, and Participant 16 completed a qualification on water management offered by UKZN. These master's level management qualifications included modules in environmental law (see e.g. Transcript 7, p. 3).

For purposes of water law expertise pathways, **environmental management qualifications are possibly a useful mid-point of convergence between the humanities and social sciences, on the one hand, and the hard sciences on the other.** Participants 7 and 16, for example, started off with a base in law and the creative arts, and then moved toward the 'technical', science-based aspects of law, while participants 2 and 15 moved in the opposite direction. For Participant 2, the learning arising from this qualification came not only

from the course as presented, but also from the informal learning opportunities it created as a multidisciplinary space. As he explained:

Then I did ... my master's degree in environmental management at the North-West University while working at the Department of Water Affairs. And that broadened the perspective a little bit. And then one of the students that was with me in my class, she was already a professor at the law faculty. So we worked together in groups and then I would teach her science and she would teach me law. That's not formal, that's informal (Transcript 2, p. 4).

The inter-disciplinary learning that a degree in environmental management facilitates can also be seen as a water law training opportunity, as discussed in section 4.4.2 below.

3.4.3 Workplace experience – Crucible of water law expertise

All interview participants gained water law expertise through workplace experience. As Participants 7 and 17 reported '*literally, I learned water law on the job*' (Transcript 7, p. 4); '*most of my training has been on the job*' (Transcript 17, p. 2).

Many of the participants had at some stage worked for the Department of Water and Sanitation or were currently in the Department's employ. A few participants had a relatively short sojourn with the regulator before moving on to consulting work. Even in this capacity, they continued to learn, as Participant 8 explained:

[T]hen as we went along into actually working, then we became more familiar with the Water Act, but then we needed to guide ourselves in terms of what the Act is saying and obviously constant discussions with the Department for each project we have to have a pre-application meeting where that's how we learn and understand the legislation more and more. So we basically had to learn that ourselves (Transcript 8, p. 5).

One might assume that through these interactions, DWS officials were learning as well.

Participant 2 reported on an interesting informal learning experience arising from his stint as a DWS official. New on the job, he was given two 'odd' files containing the 1956 Water Act with the instruction, '*read it and when you're done, come talk to us*'. This task imparted valuable historical contextual knowledge that is not necessarily shared by those who are only familiar with the water law of the democratic era: '*And it took me two weeks to read through it... And so that was, I guess also training because now it gives me, I understand the old Water Act in a way that people don't always understand it*' (Transcript 2, p. 4).

For at least two participants, water law-related expertise arose from their work for non-governmental organisations, and for others it has developed through many years of experience offering legal services, inclusive of academic research and teaching, litigation and adjudication. Participant 20 had a unique opportunity to work on a 30-year water concession in the early 1990s that required working within the then rapidly developing fields of water services and municipal legislation (Transcript 20, p. 1).

3.4.4 Further education and training – Deepening specialist knowledge or formalising multi-disciplinary expertise

As noted above, several participants pursued a 'horizontal way of understanding' in their water law expertise paths by completing masters-level training in environmental management. These same participants had also deepened their foundational disciplinary education (e.g. by obtaining an LLM in addition to an LLB). A few participants went a step further, by completing a foundational or master's level qualification in a different water-

related disciplinary realm. In addition to his engineering qualifications, for example, Participant 4 completed an LLB degree. Participant 14 holds masters' degrees in both ecology and law. Participant 15 completed a certificate course in environmental and water law at Wits University, in addition to having a science-law grounding through a master's in environmental management from North-West University. Participant 10 was also in the process of studying for his LLB.

Further formal education and training also arises through work-funded programmes. Participants currently or formerly employed by the DWS, for example, mentioned EMI and Integrated Water Resource Management training paid for by the Department (although they seemed uncertain of the details at times, see e.g. Transcript 5, p. 6 and reference to training that was offered by a university based in Turkey). Other than university courses, participants had also benefited from short courses offered by non-academic service providers. Participant 12, for example, mentioned attending Carin Bosman's training on water use licence applications.

3.4.5 Informal water law training opportunities

In addition to workplace experience and further formal training opportunities, several participants highlighted **significant informal learning opportunities that arise from interactions in various contexts**. Three participants, for example, had been involved in some way or another in the drafting of the NWA. Participant 8's experience of learning through project-level engagements with the DWS has already been mentioned in section 3.4.3. And a few participants also mentioned learning through workshops and conference attendance. Participant 11, for example, explained as follows: *'I haven't had a formal ... training as such. I've ... been in workshops in conferences where we talk about mine water, where we talk about challenges faced by the mines and all that stuff. Where, when it comes to water management and water, uh, licencing* (Transcript 11, p. 3). Participant 7 indicated that she participated in *'all sorts of conferences'* where water law was discussed, while Participant 16 said that he had *'attended different conferences in parts of the world'* in addition to training offered by the UN (Transcript 16, p. 1). These experiences suggest that conferences and workshops are important spaces of informal learning.

Figure 3.3 provides a graphic illustration of water law expertise common and converging pathways.

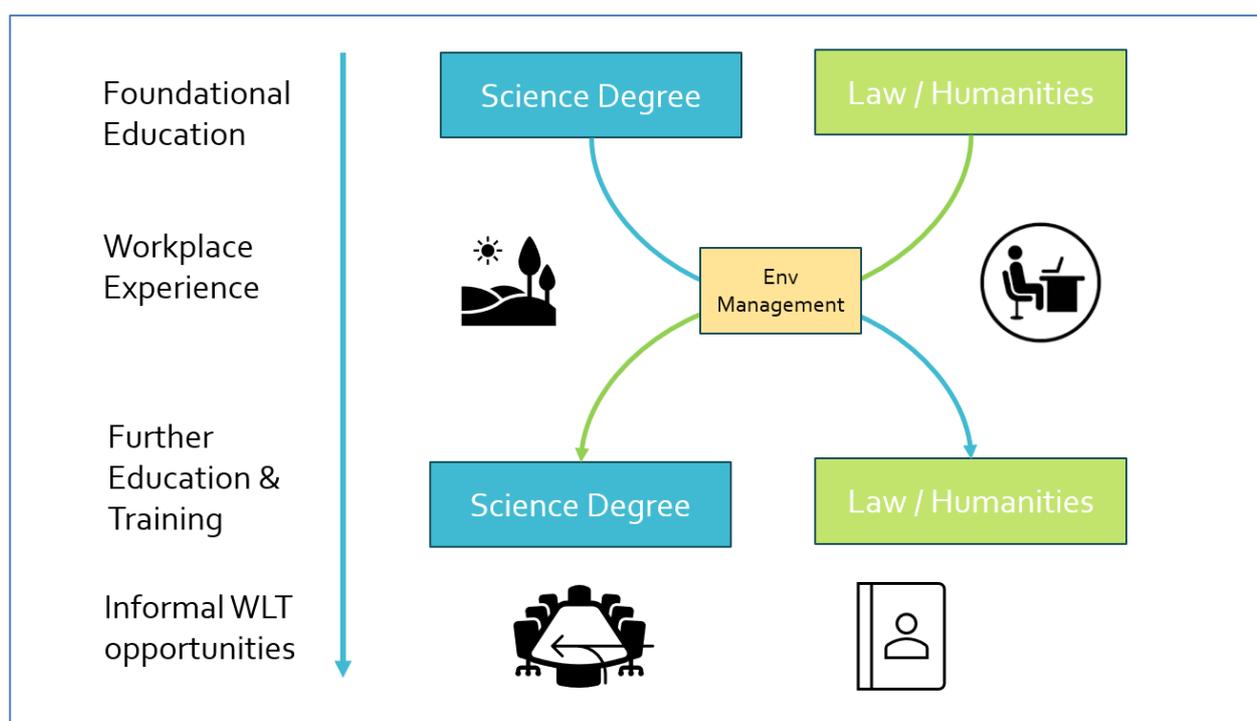


Figure 3.3: Water law expertise common and converging pathways

3.5 WATER LAW TRAINING PROVISION

In addition to recounting their water law training pathways, several interview participants offered information on the institutions where they had undertaken some form of water law training (whether as foundational or further study), and the water law training they themselves provided.

3.5.1 Water law training institutions

Interview participants commented on training provided by academic institutions, private service providers, and the EMI training offered by the DWS, or other training offered by government institutions.

3.5.1.1 Academic institutions

Some interview participants mentioned the institutions where they had received water law training. In terms of academic institutions, mention was made of various programmes at the University of the Witwatersrand, University of Cape Town, North-West University, UNISA, the University of Pretoria, and the University of Kwa-Zulu Natal. The only mention of an international institution was the University of Wageningen, in relation to its programme on legal pluralism. **Participants reported positively on their water law learning experience at academic institutions.**

A few participants had completed the water law-specific course at Wits. Participant 22 had *an overall really great experience of water law* (Transcript 22, p. 2). She further explained how the composition of the class promoted learning:

I had jumped in with no prior knowledge of environmental law as an area of the law having not done it at any varsity or at any point in my career ... So I found it to be very accessible to people who didn't have any background in environmental law. ... I just recall from the composition ... of the class. There were people in corporate, there were people in human rights, there are people in smaller private firms, there are people who are straight out of varsity and they were doing a master's (Transcript 22, p. 2).

For the most part, participants confirmed that water law was a module of courses dealing with environmental or property law in the LLB, LLM or MSc degrees. Speaking of the property law course at UNISA, for example, Participant 4 observed that *'the property law consists of the typical property law plus portion of water law. And that water law was, if I remember correctly, was a quarter of a module. So, it was an eighth of a subject roughly'* (Transcript 4, p. 5). Referring to UNISA's environmental law course, Participant 10 said:

There is at UNISA no module that only focuses on water law. There's of course a module as you would know that focuses on environmental law, but most definitely not on water law like it does on the law of contract, on the law of succession, company law or any of those (Transcript 10, p. 4).

Commenting on the master's in environmental science programme at UCT, Participant 7 said: *'I did a master's in environmental science at UCT and it was very interesting and very thorough. ... I mean environmental law was only one module of it, but yeah, it was incredibly useful'* (Transcript 7, p. 3).

Participant 14 made an interesting observation on the LLM offering at the University of Kwa-Zulu Natal. She admitted she was 'lucky' to have Professor Michael Kidd as an instructor, as *'he is very knowledgeable and obviously coming from his background, he puts a lot of emphasis on the water law'* (T14, p. 3). But the richness of her training could also be ascribed to her experience, as she explained: *'Obviously that's the training, but it did help that I had 20 years of work experience before I got to this LLM, so I could really understand the challenges that I could kind of connect the two dots'* (Transcript 14, p. 3).

But participants also valued academic offerings for other reasons. Participant 2 praised a form of bridging law programme for scientists formerly offered at UCT:

[W]hen [Professor Feris] was at the school of law at U C T, she offered this programme on a default in law for scientists where she gave the scientists a basic overview of what the law is and then they could write a thesis on that. And I thought that was a brilliant programme to give scientists an opportunity to get a degree or qualification in law, focusing on water legislation (Transcript 2, p. 10).

Moving beyond water law offerings, Participant 10 flagged the ‘very pertinent’ course in alternative dispute resolution offered by UNISA, which prompts consideration of how courses in cognate areas may also develop water law expertise.

A few participants criticised university lecturers’ lack of practical experience and a scientific background. Participant 2, for example, said that ‘*the problem*’ with universities is that lecturers were not on the job or in the field (Transcript 2, p. 10). This form of training was useful for induction and ‘*to talk about the Act*’ but when it came to the role of capacitating EMIs or officials in the DWS, this was best left to course facilitators who had practical experience. Participant 6 agreed that while anyone with knowledge (such as university lecturers) could teach water law courses, but that many people outside the academy had valuable practical experience and were also happy to give water law training:

But I guess the point is that in attorneys firms and amongst advocates, there's quite a lot of skill of people who do this work who would be available to train, you know, get all the sort of boutique environmental firms. And then all the big firms generally have these environmental departments with people with quite a lot of expertise. And then there's the NGO sector who both need training and can sometimes give training (Transcript 6, p. 11).

These sentiments were echoed by Participant 21, who said:

I think that it is very hard to leave training purely to the academics. I think the academics are incredibly important because they're thinking about these issues and they can think about the intersectionality that I was referring to, but I think it's really important to also get people in practise to contribute to training. When I did my LLB, I did some courses at UCT and some courses at UWC, and most of the UCT lecturers were academics. And a lot of the UWC lecturers were advocates in practise and academics and the kind of, I think it impacts considerably on what is then taught. So I think it's useful to have a mix because people in practise are often also quite focused and stretched and aren't necessarily thinking about the philosophical problems (Transcript 21, p. 7).

3.5.1.2 Private service providers

The only private service provider mentioned was the CBSS/WISA course. Participant 12, for example, said that ‘*another training I did was with Carin Bosman ... She worked for DWS [and] has her own business where she provides training in specifically also water use licence application training*’ (Transcript 12, p. 5).

3.5.1.3 EMI or Government-Funded Training

A few participants had undergone the EMI training co-ordinated by the DWS in co-operation with academic institutions. Participant 5, for example, noted that the EMI training had canvassed ‘*all the laws and the environmental laws*’ (Transcript 5, p. 6), and that this has been done in partnership with Rhodes University. Participant 9 spoke warmly about EMI training flagging, in particular, the type of presenters on the course:

[T]he training (EMI training from DFFE) was really thoroughly good in terms of the background of the moderators and also the presenters as they were coming from the industry. And some of them were law experts or were former lawyers who used to make money through taking government to court and they were winning on really simple stuff (Transcript 9, p. 5).

Participant 5 was more circumspect, however, and had important insights regarding the approach to training entry-level junior officials, and the water law training more seasoned officials required (discussed further in section 4.2 below, on water law challenges). He had found the presenters on an internal training course 'very boring' because they read from their slide presentation:

The presenters are very boring. I think they must still work on it. I gave them my inputs. I was telling them you cannot have a presentation. If you have more than 10 slides on your duties, then you are going to lose the people in the class anyway. ... Don't read. We can read for ourselves from those slides. Tell us your story. And I don't think they were very impressed with my problems because I just told them as it is. They were boring (Transcript 5, p. 7).

Participant 3 mentioned training provided by the South African Judicial Education Institute in co-operation with the Department of Environmental Affairs and the Worldwide Fund for Nature but noted that it had been primarily focused on wildlife crimes (Transcript 3, p. 6). Using the Judicial Education Institute to facilitate a better understanding of water law amongst judicial officers should therefore be considered in developing a plan for investing in water law expertise.

3.5.2 Provision of water law training

Many of the interview participants also offered water law training. At least four models of training provision emerged: Training within communities of practice, donor-funded training, self-standing commercial water law training, and training within or in co-operation with academic institutions.

3.5.2.1 Training within communities of practice

Participants 3, 4, 5, 6, 14, 17 and 21 offered training within their communities of practice. Participant 17 organised training within the DWS for officials, the National Prosecuting Authority and SAPS. They used to also provide judicial training through the Office of the Chief Justice and were 'currently trying to get back in' in addition to trying to connect with the magistrates (Transcript 17, p. 3). For adjudicators, the training focuses on the NWA and the compliance, monitoring, and enforcement provisions in particular:

We try and give them an overview, the offences and help with charge sheets and things like that. So that for us is the main thing because when we come to them, we need them to understand what offences we are bringing to them and for them to also recognise what are water uses and what are the unlawful actions associated with it so that they understand our matters better (Transcript 17, p. 3).

Participant 3 was involved in running workshops for regional magistrates in response to the types of cases coming before the bench. The workshops had initially focused only on wildlife law but had expanded in focus on a broader range of environmental law issues. Members of the community of practice organised the training themselves, without external facilitation, as Participant 3 explained:

What we often would do is the colleagues that have been doing some of these cases, I mean there's a couple of them that done their own Masters and LLMs and so on. So, they would be [at] the forefront of putting it all together. So, we'll work together and put our own stuff together (Transcript 3, p. 6-7).

Participant 6 had conducted various forms of water law training but is currently involved in organising training within a legal services community of practice. Like Participant 3, the model of internal training offered by Participant 6 focuses on professional development, organised in an ad hoc manner to respond to the needs and experiences of the community of practice members, without any formal programme structure or formal recognition of learning outcomes.

Participant 14 participated in water law training that is more formally structured, namely a course on wetland research and training, incorporating wetland legislative aspects. Participant 14 is responsible for the wetland legal course, while other courses deal with fieldwork identification and vegetation. The more formal nature of this offering is evident in its placement within a broader curricular structure, and its presentation – the course runs annually, rather than on an ad hoc basis. (Transcript 14, p. 4).

Participant 4's two-day water law training course also has a law-technical focus and has been formalised through registration with the South African Institution of Civil Engineering. The course has appeal beyond the engineering community, as Participant 4 outlined:

It is presented probably more for the engineers, but I mean again, a lot of non-engineers attended. Attorneys have attended it and they also, they like it that because again, you look at the law and if you start to get a better perspective of that from a technical perspective, also to understand the law better. Scientific people ... your aquatic type of people looking after the bees ... and the plants. ... So, it was developed by, for continuous professional development for engineers. ... But it is presented to a much wider [audience]: attorneys, advocates but also water resource managers in municipalities and at other institutions and so on (Transcript 4, p. 9).

The form of internal water law training Participant 21 led included training and mentoring junior colleagues within a particular programme of an NGO, which would on occasion also be extended to other colleagues in the organisation (Transcript 21, p. 2).

3.5.2.2 Donor-funded water law training

Participant 6's water law training path incorporated at least two stints of donor-funded training. During the drafting of the National Water Act, he had participated in training departmental officials and provincial legislatures on the provisions of the new Act (Transcript 6, p. 6). Later, in the service of an NGO, he undertook community-oriented training designed to empower communities on their water rights, how they could raise funding, what assistance they could expect from water affairs, and from irrigation boards and the like (Transcript 6, p. 7). Unlike the internal training discussed above, therefore, donor-funded water law training is very specific in its targeting and focus and is ephemeral in nature – responding to a specific need in time. Participant 21's organisation also ran **an annual three-week rights and remedies course for environmental activists, which always incorporated a water law component** (Transcript 21, p. 2).

3.5.2.3 Self-standing commercial water law training

Participants 2 and 12 currently offer or are in the process of developing self-standing commercial water law courses. Participant 2 has offered a three-day Water Governance course for the past 12 years *'focused on an overview of the requirements of the National Water Act, the Water Services Act, and then the requirements for the authorization of water use and what should be an application for a water use licence application'* (Transcript 2, p. 5). The course is formally structured, presented in collaboration with the Water Institute of South Africa, and registered with the Energy and Water SETA, allowing course participants to qualify for professional development points. Course registration is capped at 25 people (*'because otherwise people don't get the attention they deserve and their questions don't get answered'*), and the course requires at least 15 registrations to be viable. He admitted that while participants had 'often' said that the training was too short,

he tells them that *'I can't keep people out of their work for longer than three days. I can't afford to be away from work for more than three days'* (Transcript 2, p. 10). Although framed as a commercial offering, Participant 2 was at pains to emphasise that the course is not particularly profitable and that the value of the offering also lies in the learning he experiences (*'every time I do my training, I learn something that I didn't know about before'*) (Transcript 2, p. 15).

Participant 12, in turn, spoke excitedly about developing a 13-module training programme *'on the National Water Act and integrating that with the actual administrative processes and the management and coordination of water use licences applications'* (Transcript 12, p. 5). In developing the programme, they have roped in the expertise of an industrial psychologist, to make the training visually appealing and to cater for learners with different skills sets.

3.5.2.4 Training within or in co-operation with academic institutions

Training within, or in co-operation with academic institutions constituted the last model of water law training provision amongst the interview participants. Participants 6, 18 and 19 had lectured on masters-level university courses focused on water and/or environmental law, while Participant 16 had many years of experience in offering water law training to students and professionals through lectures, workshops, and seminars. Participant 2, however, had learned *'the hard way'* that co-operating with academic institutions was not worth his while because they required him to register as a vendor and/or as an employee.

3.6 SUMMARY AND DISCUSSION

The water law training status quo is quite limited. Only two public academic institutions and two private providers offer water law-specific courses, while another private service provider offers a SAQA-registered occupational certificate in water regulation. Other academic institutions embed water law training as part of mainly master's level training in environmental law.

The water law-specific courses are geared toward different communities of practice. While the Wits Water Law course is designed for the legal fraternity community of practice, the course on Agricultural and Water Law at the University of Limpopo presents a novel topical alignment of at least agriculture and water (and presumably land). The private water law specific courses offered by CBSS/WISA and SAICE are broader in appeal, potentially serving the government, legal fraternity, and water administration communities of practice as well as actors who are required to obtain a WUL.

Current water law-specific courses cover many of the fields respondents and participants included under the umbrella definition of water law, **with the notable exception of customary law**. Arising either out of the embeddedness of teaching water law as part of environmental law, or from the inclusion of other topics, **many of the cognate legal fields such as biodiversity law, waste law, mining law and even planning law are being taught alongside water law**.

Administrative law is taught unevenly across current water law offerings. In the master's level courses offered at public academic institutions, the basics of administrative law are not re-taught. Instead, this is assumed to be part of the foundational education students obtained in their LLB degrees (a finding also confirmed in the online questionnaire, where most respondents indicated formal training in their LLB). The private water law courses seem to teach principles of administrative justice more explicitly.

None of the water law courses in legal academia teach any water-related science. The UCT course on Environmental Law for Non-Lawyers, however, provides a space for multidisciplinary engagement with law. To the best of our knowledge, there is no equivalent Water Science for Non-Scientists course.

Notwithstanding the current water law training offerings, **most respondents and participants reported receiving no formal water law training, with most learning it ‘on the job’**. Comparatively more respondents and participants had undergone formal administrative law training as part of their foundational education in law.

A model of common and converging pathways to water law expertise, notwithstanding different starting points in either law, or science-based formal education nevertheless emerged. From different forms of foundational tertiary education, participants progressed to expertise through a mixture of work-based experience, further formal education, further informal training, and provision of water law training. Pathways to water law expertise could start in either tertiary law or science education but, interestingly, **neither of these different starting points necessarily entailed water-specific training**.

From different foundational education experiences, water experts can either move in a vertical direction toward greater specialisation, or in a horizontal direction, to gain knowledge of a broader range of disciplinary fields. Some participants had achieved a full ‘cross-over’ between the water science and water law by completing an LLB or LLM degree after degrees in, for example, engineering and ecology. There was less evidence of a full cross-over in the other direction (LLB and LLM graduates achieving a BSc or MSc), which possibly reflects the greater vertical organization of scientific knowledge (requiring educational depth in subjects such as mathematics, physics, and chemistry). **Master’s-level programmes in environmental management** nevertheless served as a mid-way cross-over point for both water scientists and water lawyers.

All participants had gained water law expertise through workplace experience, and some reported that all their expertise had been gained ‘on the job’. From a water law training perspective, it is important to **recognise workplace experience as a mode of learning** alongside formally structured courses. The question then arises as to how to create reflexive spaces for workplace learning within communities of practice where such learning can be made more explicit (examples can include briefing sessions, internal conferences, and internally organised seminars).

In addition to further education and training in either a horizontal or vertical direction, several participants report on informal learning opportunities, such as presentations made at water conferences or workshops. This is potentially **an unearthed possibility for water law training**.

Participants reported positively on their water law training experiences with academic institutions and private service providers, but responses to EMI training were mixed with one participant claiming that the sessions were boring because facilitators read from their slides. Participants also criticised university lecturers’ lack of practical experience and scientific knowledge. This criticism, however, should be weighed against the argument that water law courses are not necessarily designed to respond to the needs of all water law communities or practice.

Many of the interview participants also offered water law training, either within their own communities of practice, with donor funding, as a self-standing commercial water law training, or within or in co-operation with academic institutions. **The most common form of training provision was within the participant’s own community of practice**, with training different in terms of being more ad hoc or formally structured. Donor-funded training of an annual three-week course on rights and remedies that always incorporates a water law component could serve as a model for community (which was identified as a key training need – see further the discussion in section 4.3.2 below). These existing forms of training provision should be incorporated in a water law training investment strategy alongside plans to develop more formal training opportunities.

CHAPTER 4: WATER LAW TRAINING CHALLENGES, NEEDS, GAPS AND OPPORTUNITIES

4.1 INTRODUCTION

The principal aim of this evidence-based assessment of water law training is **to inform future investments in water law training capacity building**. To this end, this chapter presents thematic findings from the online questionnaire and in-depth interviews on **challenges, gaps and needs, and opportunities in water law training**.

The online questionnaire asked three open-ended questions in this regard: 'What are the most important needs water law training providers should be addressing?', 'What are the gaps in current water law training provision?' and 'What are the opportunities water law training providers should be pursuing?'. In the interviews, participants were invited to respond to two open-ended questions: 'In your view, what are the key gaps or needs in the water law training sector?' and 'What are the key opportunities?'. Responses to these questions were coded as water law training needs (WLT-N), water law training gaps (WLT-Gap), and water law training opportunities (WLT-O), respectively.

When the questionnaire results and interview transcripts were coded, three broad categories of findings emerged. Respondents and participants reported firstly on **challenges to water law training**, coded as water law training challenges (WLT-C), which largely refer to broader-ranging contextual factors that make water law training difficult, and that could also impact the curriculum or pedagogy; secondly, on **needs and gaps**, mainly in the form of commentary on the training needs of particular communities of practice, and omissions or failings in current curricula or pedagogies (WLT-N); and finally on **opportunities** (WLT-O), in the form of positive comments on directions future water law training could take in terms of approach, programmatic structure and collaboration. The following sections of the report unpack the findings across these three broad categories.

4.2 CHALLENGES

Respondents and participants were keen to elaborate on the factors that make water law training in South Africa difficult. The challenges that emerged from their comments can be grouped into four broad sub-categories: **Epistemological linkages; policy, legislative and implementation uncertainties; provisioning challenges; and challenges relating to value**.

4.2.1 Epistemological linkages

The first sub-category of challenges is the difficulty of drawing epistemological boundaries around water law, both as regards its colonial history and political nature (how much history, anthropology or social science should be included) **and its links to a range of natural sciences** (how much engineering, ecology, microbiology, etc. should be included). In the main, **participants and respondents stressed the importance of these epistemological linkages and the need to accommodate them in training provision**. No-one, for example, maintained that water law training should concentrate purely on the teaching of doctrinal or 'black-letter' law.

The following sections explore why respondents and participants found these epistemological linkages important, and what elements of the social sciences or hard sciences they considered would be relevant to developing water law training expertise.

4.2.1.1 Social sciences

Comments on epistemological linkages to the social sciences clustered around two themes, namely the **colonial history of water law** and **current political influences on water law implementation**.

Understanding the colonial history of water law is relevant to understanding the continuing evolution of the character and form of modern water laws, how such laws functioned (and continue to function) as an instrument of dispossession, and the continued marginalisation of customary water law. Although a few participants alluded to these linkages (see, for example, Participant 2's comment regarding the workplace experience of reading the 1956 Water Act in section 3.4.3 above), they were most perspicacious in the contributions of Participant 1, and in the following quotation in particular:

Because the water law, the permit system is so colonial, you don't even want to get too much into legal issue sometimes ... The permit systems were introduced by, for example, in Kenya, the British came, in the ordinance, you can all find it back in ordinance. They looked around and they said, all water resources are vested in his majesty, the King of England. And then only settlers could get permits, licences, permits it's the same. And it was very clever. If you want to build a state with these anarchic settlers who did their own thing, you want to get a state, you say, if you have permit, I will defend you against all African users. So it was designed to override all African water uses. And at the same time, it regulated, tried to regulate those settlers, but it was more an entitlement than really a tool to regulate. And in independence or with the international narratives of the north, they then said, no, no, everybody needs a permit. So even the [very poor] farmers in ... Elandsdraal [need] a permit now. And if they have a permit, then the one who doesn't have a permit because it's too small, becomes invisible. So there is a huge colonial legacy as well (Transcript 1, p. 18).

In this paragraph, Participant 1 presents a critical perspective on the purpose, functioning and impact on contemporary licensing systems by outlining an historical, comparative context (water permitting in British colonial Kenya), linking this to issues of political economy (licensing as a tool of entitlement and racial oppression rather than regulation), and explaining an evolutionary path that continues to render some uses invisible (the international narratives of the North that require everyone to have a permit). In this manner, she unpacks a 'huge colonial legacy' that has obvious relevance as **both a critical perspective but also a practical consideration** in teaching water law (how, for example, should one regulate or license the small-scale user in Elandsdraal?).

The importance of including the critical historical context(s) Participant 1 alludes to in water law training seems unequivocal. But the challenge that Participant 1's insights pose for water law trainers is, firstly, how to select material from the huge colonial legacy that best illustrates evolution of the techniques of water law in a way that does not completely delegitimise the present-day incorporation of those techniques in democratically-enacted statutory water law and jurisprudence. And secondly, how to make the governance arrangements that govern marginalised uses visible in a training context.

While Participant 1's insights highlight the importance of colonial history, legal history, political economy and possibly anthropology as epistemological linkages to water law, a greater number of participants flagged the relevance of political considerations. Participant 7, for example, said the following:

Let me say this and try to find a tactful way of this saying this – Water law is inherently political. The National Water Act is inherently a political piece of legislation. The decision on who gets access to water and for what purposes is not a technical decision. It is not a legal decision. It is framed in legality, it is framed in technical how much water is available, et cetera. But ultimately how those decisions, so section 27 of the Act and how Section 27 is interpreted is ultimately a political decision (Transcript 7, p. 2).

Participant 4 also stressed the importance of understanding ‘political influence’:

There are certain things that [are] outside of the scope of the water law [that are] still important. You have to understand the technical aspects. You have to understand the political influence. You have to understand all those things to be able to understand what the law better (Transcript 4, p. 18).

Participant 4 bounds the scope of studying the technical aspects (more on this below) and political influence by stating that these considerations are needed ‘to be able to understand the law better’. The dilemma water law trainers would face, however, is how ‘political influence’ should be conceptualised (how much political theory, for example, would students need to be exposed to understand ‘political influence’), and where and how such insights could be accommodated in a water law training curriculum.

Participant 9 also affirmed political influences on water law and the importance of speaking about political issues and expressed an opinion on why these issues are not canvassed in current water law training offerings in academia:

And I can certainly promise you that the lobby groups are going to take the department to court in terms of some of those provisions. We do get to finalise those regulations. But all in all ... politics are things that must be spoken about. And I think in terms of the academia, academia doesn't cover much on the water politics because it's not [in] their interest (Transcript 9, p. 9).

Participant 9 did not offer any evidence for his opinion (academia not addressing politics because it was not in their interest), but it does suggest that even perceptions of academia are politically filtered. In the questionnaire the relevance of political considerations emerged in comments highlighting the need to address ‘the gap’ between water law and implementation.

4.2.1.2 Natural sciences

Water law training is also challenging because of the epistemological linkages the subject has to various scientific disciplines. Participant 2, whose conception of such epistemological linkages was the broadest, criticised current approaches as ‘*siloastic*’ and went on to hold that ‘*you need at least six, seven different basic sciences to understand water law. You need microbiology, chemistry, geology, hydrology, statistics ... just to name a few*’ (Transcript 2, p. 10). Understanding the Water Act is difficult for both lawyers and scientists, she continued:

Lawyers don't understand that technical aspects of what is meant by certain of the provisions. What does it mean? Water containing waste? And scientists don't understand the legal principles. And so, we need to aim at teaching lawyers/ the scientific principles underpinning the Water Act (Transcript 2, p. 2).

Supporting this position, Participant 14 spoke of the value a foundational education in ecology had provided her.

My experience was first coming from the field of ecology, and that forced me to understand the water ecosystem, water system. And I think I've actually never thought about it, but now that you asked that question, it must be very difficult for someone to implement the water law without understanding the water cycle and the interaction between all of these. So, you actually need a physical understanding in the field and then link to an understanding in terms of your undergrad degree, what you studied there in terms of ecological systems, specifically focusing on hydrological aspects. And then you can actually implement the water law (Transcript 14, p. 5).

Participant 2 was quick to also point out that scientists who were only trained as scientists and who didn't know much about the law would take the Department's word on the interpretation of the Act, which was 'extremely dangerous' (Transcript 2, p. 3). Both sides, evidently needed training by 'interpreters' (Transcript 2, p. 3).

Participants 1 and 4 **emphasised epistemological linkages to the fields of engineering (and economical sciences)**. According to Participant 4, being a lawyer 'alone' was 'not good enough', and one needed technical expertise as well as economic expertise (Transcript 4, p. 15). Participant 1, in turn, offered a nuanced critical perspective of knowledge domain of engineering, linked to a gender perspective, as follows:

The lawyers don't fully understand ... the importance of the infrastructure because it's engineering, technical stuff. And the engineers can do that. That is how water is being made available at the right time, at the right place in the right quantities, right qualities where it is used for people. And that's often seen as a black box ... And coming from a gender perspective as well, that's where the women are pushed out. ...I call it the male monopolisation of infrastructure, then the women are out (Transcript 1, p. 9).

No-one disputed that epistemological linkages to the natural sciences mentioned above were relevant and important, but few offered insights as to how these additional disciplinary domains could be accommodated in a water law curriculum. Unlike the social sciences, where one has the prospect of selecting from a variety of theoretical framings, the natural sciences are characterised by many more vertical epistemological structures, which start being built from as early as secondary education. If water law training is required to become less 'silo-astic', the question arises how these vertically-integrated knowledge structures can be conveyed without the learning being completely superficial.

4.2.2 Policy, legislative and implementation uncertainties

While epistemological linkages make water law training challenging by casting doubt on the epistemological boundaries of the subject, **policy, legislative and implementation uncertainties can undermine the validity of the curriculum by creating fast-changing regulatory landscapes, gaps in understanding, or misalignment between law on the books and in practice.**

Participant 9, for example, pointed out that the water sector itself was undergoing 'drastic changes' in terms of being '*more environmentally green and also just being generally ... more responsible in terms of the business that is being done*' (Transcript 9, p. 3). Participant 8 highlighted the legislative gap of the lack of a stipulated time frame to prevent a license application from 'going on and on'. While the legislature and executive had subsequently stipulated a time frame of 90 days, Participant 8 felt that '*the thing is they don't really stick to that. There's a whole lot of processes that goes on behind the scene and I feel like there's not a lot of uniformity from the case officers*' (Transcript 8, p. 3). Participant 6 had harsh words for the one environmental management system. While integration of mining, environmental authorisation and water use licensing processes had occurred on paper:

The integration hasn't really happened yet. And because of that, there's a massive disjunct between how water and sanitation works, how environment affairs works and how the DMR works. So to me, probably one of the biggest gaps is how this integration works (Transcript 6, p. 10).

According to Participant 21 '*in many respects we have fantastic law, but we have a crisis of implementation*' (Transcript 21, p. 2). At least two participants criticized the policy and legislative uncertainty surrounding the establishment of Catchment Management Agencies (CMAs) and the devolution of powers. This challenge is best captured in the words of Participant 7: '*If we're going to have CMAs set them up and give them the authority if we are not going to have CMAs take them out of the legislation. But we're caught in this no man's land, that means that CMAs can't run effectively because they're not given proper authority*' (Transcript 7, p.7).

This 'no-man's land' also affects water law training, as trainers need to decide how much emphasis to bestow on understanding an institution and its powers that may well become politically or institutionally redundant in future.

4.2.3 Provisioning challenges

A few participants also highlighted provisioning challenges relating to water law training. Participant 5 raised concerns around **budgetary and time constraints**. In his department, training only happened once a year because of budgetary constraints. But this was insufficient. The Water Act was 'big' when you started to unravel it. *'I wish there can be training more often,'* she said. *It not just for the young ones that comes in, but for us that's been there for some time. It does not mean we know everything. And I think this is why we also lose cases these days* (Transcript 5, p. 6).

Other than the frequency of training, timing was also an issue in terms of **training time being too short**. According to Participant 5: *'You're cramming all the things when you come out there. You know you're just studying for that certificate because ... your supervisor wants that certificate. So you cannot ... have five day courses. No, it doesn't work'* (Transcript 5, p. 16). He conceded, however, that the team didn't always have the time to sit still for training, nor to work through prescribed readings:

And really you don't always have time to sit still with your team. ... Because there's always something happening. ... You don't have time to set when new financial leads, new targets, you must move ... And I think it's the capacity issues in my section or in the department is really hampering us to understand matters because now you are tired, you must come home and you must read on this matter but you're tired, you have kids at home (Transcript 5, p. 9).

Participant 18 spoke very candidly about including water topics in the curriculum that touched on a variety of provisioning challenges, include teaching time, teaching capacity and the nature of water as a 'cross-cutting' issue:

We barely have enough space in the curriculum to teach the law students the really essential laws like administrative law, constitutional law, to fit in additional undergrad courses around very specialized areas would be unrealistic... [W]hether there's capacity to have a course on water law alone, and also whether that makes any sense given that water is a cross-cutting component of the environment that feeds into the atmosphere and the land and the ocean, and I don't know that that's something that I would personally aspire to. I'd love to be able to have a specialist on water teaching water law. It's not that I don't want that, it's just that I don't think we have capacity. And I think that at the moment, we have to teach water as part of a broader environmental program (Transcript 18, p. 4).

But he then went on to make a critical point about the extent of substantive law that needed to be covered versus convening a change in mindset and understanding – a critical input to the **how** of water law teaching:

But how you cover it matters more than teaching these hard doctrine bits and pieces of doctrine. It's about understanding what the social environmental intersecting issues are and then trying to address them. So again, I think lawyers know how to read law. If we give us a statute, we can read it. If you tell us where to find it, we can figure out what it means. That isn't the issue. It's these bigger picture things (Transcript 18, p. 5).

Participant 24 seemed to agree. While it was one thing to see something and try and remember it *'when you actually have to critically think about it and formulate an argument and be resourceful and find information, that's where the knowledge actually sticks* (Transcript 24, p. 7).

Participant 3 highlighted a very particular provisioning challenge affecting the judicial community of practice. Magistrates and judges had to be very selective in who they allowed to train them to avoid any subsequent allegations of bias. A department, a private provider or even an NGO who had conducted training might end up being a party in a matter. The judicial community of practice had invited guest lecturers from universities and some NGOs, *'but mainly if we are quite sure that they would not end up being parties in front of us or people that would end up testifying in front of us'* (Transcript 3, p. 6).

Participant 16 highlighted a chicken-and-egg problem related to current water law training. There is a lack of in-depth water law knowledge and skills and training in the country because *water law is only taught as part of something else* (Transcript 16, p. 1). This needed to change *'as the industry is changing'*, but currently there was insufficient demand to run water law training even as an elective (Transcript 16, p. 1).

4.2.4 Challenges relating to value

The tension between teaching the principled basis and lofty objectives of water law versus what clients or students want to know can also make water law training challenging. Water law incorporates high-level principles set out in international law, the Constitution, the NEMA principles and the objectives of statutory water law itself. There are also emerging values associated with protecting the rights of nature. However, as Participant 19 observed *'they weren't really particularly interested in that sort of stuff. They simply wanted to know what do we need for a water use license? What are the principles that are going to be taken into account when granting water use licenses? What are the processes?'* (Transcript 19, p. 3). This experience resonates with other aspects of the research enquiry, such as the depth of expertise in the compliance and monitoring-focused provisions of the NWA (see further the discussion in section 2.3 above).

The complexity of water issues in South Africa and the way in which value choices are framed are also challenges of value. Participant 1, for example, spoke at length about the socio-economic valuation of water, how human needs should have the highest priority and value, and that racial and gender equity should be valued higher than beneficial economic use (Transcript 1, p. 12). Participant 21 laid particular emphasis on the climate crisis and strategic water source areas, holding that training should address *'why they're important, not just for the right to adequate water, but also because without water we can't grow an economy ... In South Africa alone, the complexity of who has right to water, how we prioritise this notion of economic development as if it isn't related to water. So I guess the pitting of economic development against the environment and the pitting of economic development against water for people'* (Transcript 21, p. 6).

4.3 GAPS AND NEEDS

A few of the online questionnaire respondents **identified the lack of formal water law training itself as a gap**. Respondents noted that *'there are very few water law courses', 'there are no specific modules aimed at water law'* and confirmed *'the lack of formal training provided at major tertiary educational institutions.'* Participant 17 had *'looked'* for water law course but had found that *'they're very few and far between'* (Transcript 17, p. 5). There appeared to be the lack of a properly designed and easily accessible route for those wishing to specialise in either water or environmental law (Transcript 17, p. 5).

For the most part, however, respondents and participants **framed water law training gaps and needs in terms of knowledge deficits or training needs in particular communities of practices**. Curricular or pedagogical failings in current water law training offerings also tended to be associated with specific communities of practice.

The most comments on knowledge gaps and water law training needs were directed at officials in national and local government, with criticism coming from both insiders and outsiders. Although

'communities' and the 'general public' itself were not identified as a community of practice for purposes of this project, **a surprisingly large number of interview participants flagged the need for water law training either as general public education or as community education.** Knowledge gaps and water law training needs were also highlighted in relation to the legal services community of practice and, to a lesser extent, the water administration and consultant communities of practice.

The following sections accordingly unpack gaps and needs in water law training using a community of practice framing.

4.3.1 Government

'I think the regulator could do with some training on its legislation' (Transcript 20, p. 8). This quotation captures the sentiment of numerous participants. Participant 18 agreed that the emphasis should fall on *'those people who are actually implementing laws and policies and testing the water and reporting on the water,* rather than developing more specialised water law training courses in the under- or postgraduate curriculum for law students (Transcript 18, p. 4). For Participant 7, there is a need to conduct *'hands-on training or training for members of the Department of Water and Sanitation in both the Water Act and the Water Services Act'* to make sure that *'people ... understand the law and how their job, their work fits into the law and how they do their work influences other parts of the effectiveness of the whole machinery as it were'* (Transcript 7, p. 5). Departmental insiders lamented that the department's lawyers were not as active or clued up as those in environmental affairs, and described a paradox where, despite sectoral needs, people in the Department *'don't seem to think that we need environmental lawyers because there's other aspects that you need to be taking into consideration, not just what the law says'* (Transcript 17, p. 1). He conceded that *'we've got external stakeholders that we need to be training ourselves. So to take that on as the department itself, to train more specialists, to specialise in a particular areas is difficult. And the lawyers that are within the department do need the training'* (Transcript 17, p. 5).

To justify their view that **the regulator itself is the most in need of water law training**, participants flagged gaps and inefficiencies in the water regulatory function. These included a lack of consistency in advising on and deciding water use licence applications, failure to comply with administrative law requirements in issuing water use licences and directives, failure to follow-through on enforcement action, failure to co-operate and collaborate with other departments, and failure to maintain the information systems necessary to ensure transparent and accountable governance. Participants emphasised that regulatory gaps and inefficiencies also afflicted the local government sphere. There was also a suggestion of a **lack of priority or focus given to issues of water law**, even within the DWS.

4.3.1.1 Inconsistent advice, interpretations, and decisions

'I think the understanding of the legislation itself is not uniform across the board there, DWS' (Transcript 8, p. 4), Participant 8 observed. The challenges they had experienced arose not from the Act itself, but from the **conflicting advice, interpretation, and implementation actions of case officers within the same office, or between regional offices.** *One will tell you this, then for your next application you get a different case officer, they'll tell you something else, complete opposite* (Transcript 8, p. 4), Participant 8 said, and continued:

You'll get one regional director that says it means X, but then you'll get the other regional director from another area that will say no, but it means Y. So there's again, not that consistency across the board in terms of what actually the requirements are. [E]ven documentation requirements for them, it differs so significantly (Transcript 8, p. 6).

Participant 8 ascribed this lack of consistency to a tension between a 'play-by-the-rulebook' regulatory approach, and a more nuanced approach that considers the suitability of rules in particular contexts. As she explained:

Some of them follow the book and it's not really practical to a certain specific situation on site. So we've also noticed that they just follow something that's written in a regulation but not realising that certain, well applications are different and they need to put their mind around that (Transcript 8, p. 6).

She also suggested that the play-by-the-rulebook' approach could be ascribed to inexperience because 'it's a lot of the younger guys who tend to do that' (Transcript 8, p. 6). DWS had a good set of case officers for a long time but:

Then they didn't renew their contracts and then they gave it to juniors and these juniors had no clue what was happening. And this is where it comes into to play, where they follow things word for word instead of seeing that maybe this [licence application] doesn't need a stormwater management plan or this one doesn't need a groundwater study or whatever the case may be. So they're looking at it from that lens and I just feel like there needs to be consistency in that whole department (Transcript 8 p. 6)

This comment suggests a need both for induction, but also for ongoing training and support as case officers become more experienced. (The need for ongoing training was also raised by Participant 5, as discussed in section 4.3.2 below.) The respondents' observations are relatable to Lipsky's conceptualisation of 'street-level bureaucracy' (Lipsky, 2010), which explains how – in the absence of specific guidance from policy documents or policy makers – street-level bureaucrats connect with peers and external parties able to contribute to filling knowledge gaps. Street-level bureaucracy fits well with the community of practice approach adopted in this report, although a more detailed exploration of this alignment falls beyond the scope of this Report.

4.3.1.2 Failure to comply with administrative law requirements

Participant 2 stressed that **water officials need to understand the principles of PAJA** (Promotion of Administrative Justice Act). However, that they didn't grasp *the principles of lawfulness, reasonableness, and procedural fairness* was plain in every single licence he had seen (Transcript 2, p. 7). He cited the example of a recent licence, *which described 93 activities as water uses, of which only eight were water uses that needed a licence* (Transcript 2, p. 7). The import of this was that it placed a huge additional administrative and financial burden on the company (and the regulatory officials). From the same licence and illustrating the further problem of unreasonable and unenforceable licence conditions, he cited a condition that required the licensee to measure the impact of noise on the hearing of aquatic animals. *'I kid you not, that's a licenced condition ... How are you supposed to do that and what does it even mean and how does that protect the water resource?'* (Transcript 2, p. 7).

Participant 4 was of the view that DWS directives were frequently flawed on PAJA grounds, although he conceded that the situation might have improved: *The procedure followed to issue that directive is flawed by PAJA arguments ... [I]t has probably increased a little bit better. But five years ago I can guarantee you if you look at the directive for only from the wording in the directive, the legality principle of that directive is flawed* (Transcript 4, p. 11).

Participant 10 had personally had no trouble interpreting or applying the water law but had seen that in some instances *officials prima [facie] either do not understand or do not apply what they understand and that brings in the Water Tribunal in the picture, but at least the Water Tribunal is there. It is active and it is approachable and as I said just now, I'm very thankful for that* (Transcript 10, p. 3).

Over the years, Participant 3 had noticed that water officials vested with decision-making power were not using 'checklists' they had been provided with to ascertain whether they were using the 'correct approach'. Although it is unclear whether Participant 3 was referring to checklists relating to administrative law requirements or other substantive water law requirements, he flagged this failure 'to take things seriously' and 'double check' as a big training need (Transcript 3, p. 11). This speaks to a need for training in values and ethics in addition to the substantive requirements of administrative or water law.

4.3.1.3 Failure to follow through on enforcement action

Participant 5 commented on follow-up enforcement action. Comparing his role to a 'firefighter' ('I go where it's burning' (Transcript 5, p. 8)) he lamented the fact that EMIs do not have time to follow-up on the enforcement action they initiate:

Why? Because I know we are few on the ground. ... [W]e are very little. So we don't have that time to follow up. So yes, it's a very important thing. It's very important. Cause at least I was glad that we could show that we have issued. But where was the follow up? Why was it never escalated? Why? There's a lot of whys. But I can understand we don't have enough people to also follow up on these notices because it requires you, if you say within 14 days I want this, this and this. You need to put in 14 days, you need to go back to that site. And I'm telling you, I feel like I'm just a firefighter (Transcript 5, p. 8).

This frustration speaks to three potential avenues of reform: Amending the Water Act or regulations to allow for more realistic time periods for follow-up enforcement action; appointing more EMIs; and/or introducing systems and training to allow EMI's to manage their enforcement load better.

4.3.1.4 Communication and collaboration with other departments and spheres of government

For Participant 8, gaps and inefficiencies in the regulatory function that could be addressed by water law training included **co-operating and collaborating with departments such as the DFFE and the local sphere of government**. She observed that:

Another thing that we see is that a lot of the times the Department of Water and Sanitation are not really in communication with the other departments like your DFFE, like your local municipalities, even though it's one project, but it's dealt with so separately. And it would be great if there was actual consensus or the coming together and discussing and ironing out all the problems together instead of one having a certain condition and then the other one is not happy with that condition and instead of them coming together and providing consolidated input (Transcript 8, p. 4)

This observation is interesting, given the institution of the one environmental system and confirms other comments that the system remains unintegrated. The participant also highlights DWS' relationship to municipal water services authorities and, by implication, the Department of Co-operative Governance and Traditional Affairs. The 1996 Constitution initiated a huge need for intergovernmental co-operation, which is still being worked out in the water sector and cannot necessarily always be legislated. This comments thus also speaks to the **need for training in the softer skills of co-operation, collaboration, negotiation, and mediation** particularly in the management of inter-governmental relations.

4.3.1.5 Failure to maintain information systems for transparent and accountable government

Participants also noticed regulatory gaps and inefficiencies in the public-facing information systems which the DWS should maintain as a commitment to transparent and accountable government. In searching for environmentally related policies and publications on government websites, Participant 18 had found:

It was absolutely the most difficult for water. And I know that the administration has just changed, and hopefully things will improve. But if I compare all the air quality policies and their information system for public information about air quality, there's just really no comparison (Transcript 18, p. 5).

This comment addresses an aspect of the regulatory function that is less frequently highlighted (information and website management), but one can immediately see how this failure would affect not only the general public awareness and understanding of the status of water law policy and legislation, but water law training itself, as Participant 18 further explains:

The strategic plan? That's still from 2017. That's just one example. What are we actually going to teach the students? "Here's the government's very old out of date strategic plan." I mean, here's how you do a water use license. Here's all the things. And then you look at [the] CER's report on compliance with water use licenses and auditing and reporting, and it's [showing] a complete mess. And no one's doing anything about, well, they're reporting on it and obviously trying to increase awareness and dealing with specific issues before the Water Tribunal. But yeah. Then what are you teaching your students? (Transcript 18, p. 6).

Participant 18's frustration gives voice to a long-held belief in at least the academic community of practice, which is that **environmental and water laws in South Africa are good but lacking in implementation**. It does suggest that lack of capacity and function in the regulator itself ripples through the system.

4.3.1.6 Challenges within local government

A few participants commented on **water law training needs and gaps within local government**, which also foregrounds the role of the Department of Co-operative Governance and Traditional Affairs and their responsibilities in terms of municipal legislation. Participant 20 said that *'we desperately need decision makers, people that take rational logical decisions. So that's more around the whole role of local government for water uses* (Transcript 20, p. 8). Participant 6 highlighted that environmental management inspectors are trained at different levels, but that the EMIs in the municipalities considering land use change and development applications had not received training in 'general environmental stuff', much less water law-related training (Transcript 6, p. 11).

Participant 10 made some very interesting observations about training gaps and needs within local government that highlighted the intersection of water law with Treasury and tender regulations along with the epistemological linkages to the natural sciences. As he explained:

A tender in local municipality ... takes at the minimum nine months ... You have to have proper specifications. So now it means .. you have to understand what goes wrong with water infrastructure, whether it is pipes, machinery, pumps, water works in general, whether it is mechanical, civil, chemical even ... And so it carries on. You have to have an understanding of all of those within the context of what the water law instructs you to do and what the bylaws instructs you to do. And do you see there's a huge gap there in the understanding of our colleagues at local level of how to think about this not only from ... a constitutional responsibility (Transcript 10, p. 7).

Participant 10 intimated that this capacity to bring together knowledge of different areas of law, alongside knowledge of the intricacies of the water supply context needs to be applied quickly and nimbly, because of the one-year time limit National and Provincial Treasuries impose on the spending on local government grants:

And I have so much sympathy with municipalities [who] in general want to do it right but sit with this one year thing. And because they can't promise to provinces or to national government for grants, that they will get it right within one year to put in a tender with the right specs of what needs to be done

happening on the ground. And at the same time to have that tender, properly adjudicated and awarded and that it produces the outcomes intended for all of those need to happen in one year. Do you see what happens when you follow the law? Yeah. How extremely difficult it is for smaller municipalities (Transcript 10, p. 8).

This rather poignant submission speaks to **a dire need for a training offering that helps local government officials navigate the requirements of the constitution, water law, water by-laws, treasury and tendering regulations, and the intricacies of formulating specifications that address water supply problems.**

So if I can conclude at the municipal level and a training in water law and water law application, and of course with water law, I now include the full set of statutes, case law, bylaw, national law, constitutional law, and then over overview of those, and then application, application, application, and then combine that with, as I alluded to earlier with how do we then together with the other financial imperatives and governance imperatives, get our local municipalities to not only understand the legal imperatives and to legal practicalities, but to apply it within the context of other legislation (Transcript 10, p. 13).

Participant 20, in turn, pondered who within local government would be interested in water law training. Noting that *there's lots of technical training around training of operators of water works* (including training to comply with new regulations), but for water law training one would need *essentially people who are interested in the constitution and local government and service delivery per se* (Transcript 20, p. 4).

4.3.1.7 Curricular and pedagogical suggestions

Respondents and participants also had ideas about curriculum and pedagogy. Participant 11, for example, thought that monitoring and enforcement would be a very good module because *'a lot of people ... are working to circumvent the processes ... because of how unfriendly the regulations, the water law is* (Transcript 11, p. 7).

By far the most spirited pedagogical suggestion came from Participant 5 who made an impassioned plea for pedagogy to shift from 'induction' to 'training', especially for senior EMIs. The 'training' he had received was in fact a mere 'induction', whereas the 'training' he needed focused more on application and strategic reflection:

I don't want to call it training. I want to call it induction. ...I don't think there was ever training that I've attended. I'm thinking now where we actually went into our Act and how it is applied, how it should be enforced (Transcript 5, p. 8). I don't want you to present This is the National Water Act. This, these are the sections. No, let's go into a section. Let's go into a section and we will actually see on day-to-day how you work, how it's applied (Transcript 5, p. 11).

Participant 5 had therefore stopped going to 'training':

[B]ecause when I go to training the people, the facilitators, they [don't tell me] why we lost that case and learn from it like that ... When you become a senior, now you work cases or when you are in the section that I work in, we work with cases and we would like to know how to close the loopholes. How do we, okay, there's maybe a case currently there. We lost something. So farmers can trade their water now. But now we want for us, we know, don't know why we lost it. Let's go in there, let's see why we lost the case and try and close that gap. Something like that (Transcript 5, p. 8).

This submission relates to what should be included in a water law training curriculum and how training for more senior officials could be presented.

4.3.2 The general public and communities

After government, the **second-highest number of comments related to water law training gaps and needs in communities and the public in general**. Participant 14 opined that the 'general public' should be included in a targeted water law training investment plan as *there is really a very limited knowledge of the water use resource management within the country* (Transcript 14, p. 3). She found that people were not at all aware of their rights, especially Schedule 1 rights which could be accessed without general authorisations. Participant 9 agreed that there should be *more education on the streets* and that *we would've achieved our job* if people were more aware of constitutional and statutory duties relating to water (Transcript 9, p. 7). Participant 13 imagined taking education to the streets quite literally by remarking:

You don't drive along the N1 underneath a billboard that's, that talks about the National Water Act. You don't see that. You don't see a billboard talking about are you aware of your Section 21 water uses? And literally everybody, except for Schedule one, water use is somewhere in their life. They're working with commercial water use that needs to be authorised and regulated (Transcript 13, p. 5).

The quote nevertheless indicates a more limited training target – not on the general public *per se*, but on commercial water users whose water use falls within the ambit of section 21 of the NWA.

Participant 9 drew an important link between public awareness of water law and participatory democracy, by pointing out that the government is not doing a good enough job in terms of ensuring that a decent number of people comment on, and or participate in processes to develop new regulations. He believed this could be remedied by having *more conversations ... on [the] news and also on programmes that can be initiated by different institutions or organisations* (Transcript 9, p. 8).

Participant 7 believed there is a 'huge gap' around training for 'affected communities' on their water rights and how they can use water law. It is important, for example, that communities claim their right to a decent quality of water in rivers, know that this imposes duties on the DWS, know how they can 'actually pick it up and fight', what the law means as a 'tool for them', and which pro bono institutions could pick up their cases (Transcript 7, p. 5). Participant 10 added an important insight to water law training for communities, shifting the focus to the trainer, when he added that people who work with communities need *the academic, intellectual, professional, wherewithal ... I mean indeed the background, multidisciplinary background ... to position yourself in a manner that immediately wins the trust of both sides* (T10, p. 12).

Opinion on the focus and purpose of water law training for the general public and communities accordingly diverged, ranging from a broad conception of training for everyone, to training for affected communities, to training for the commercial water users. Suggested modalities for training also differed sharply – from billboards and use of news media, to embedded work within communities.

4.3.3 Legal services

The third community of practice that featured in discussions on water law training needs and gaps was the legal services community of practice, inclusive of legal practitioners (attorneys and advocates), the South African Police Services (SAPS), prosecutors, and adjudicators. **The general sense across the board was that actors in the legal services community of practice do not know enough about water law.**

Beginning with SAPS, Participant 5 expressed frustration that when EMIs attempt to open a docket at a police station *'they're going to tell us about crime rape, rape and stuff. They dunno what I'm talking about. [W]hen we had to go take the docket there, no they don't know what we're talking about* (Transcript 5, p. 14).

Participant 3 pointed to the **dearth of specialist prosecutors dealing with water-law related matters** (Transcript 3, p. 7). He also observed that specialist prosecutors had been *'sort of riding on the wave of plea bargains and guilty pleas'*, with the result that when prosecutors were asked to actually present evidence in a trial where an accused does not plead guilty *'they have a ton of problems'* (Transcript 3, p. 7). Participant 3 also highlighted a need for training in the drafting of conditions attached to plea bargains to avoid a situation where improperly worded conditions made the plea bargain incapable of execution (Transcript 3, p. 7).

Participant 5 noted a lack of knowledge and training amongst legal practitioners both within and outside of the DWS:

What I do find very weird and sometimes very, I don't know what to say, but when we come with our cases to a lawyer, that lawyer doesn't understand or the attorney doesn't understand. So we must string that lawyer attorney from scratch. So now my question is do you guys not go on training in terms of the specific laws? (Transcript 5, p. 14).

Contrary to statements other participants made about becoming a water specialist through self-study and experience therefore (see, for example, Participant 18), Participant 5's comments suggest a need for at least some form of specialist training. Participant 7's comments also point in this direction: *Actually we don't train water lawyers, we train lawyers and then somewhere down the line they learn to become water lawyers, which for me is ... maybe what's missing is actually a master's degree in water law or something of that nature. A specialisation in water law* (Transcript 7, p. 5).

Participant 6, in turn, shifted the focus to magistrates and judges, commenting that *'water is so central to the environmental law space that that's the problem when you appear in court is that you deal with judges who know nothing about this stuff and it's quite complicated and you really have to start from the very beginning and it's very hard to do that'* (Transcript 6, p. 11). In his view, therefore **magistrates and judges also need water law training.**

4.3.4 Water administration

A few participants commented on water law training needs and gaps in the water administration community of practice. Participant 6, for example, shared that his interactions with irrigation boards and water user associations had revealed that water law knowledge in these institutions *'is not great'* (Transcript 6, p. 11). Participant 20 disagreed though, holding that in her experience water users (particularly the agri-industry), *actually know exactly how everything works and they perceive the value of water. So, they generally know what their rights and obligations are* (Transcript 20, p. 8). Participant 14 had a slightly different opinion, suggesting that the issue in the water administration community of practice is one of value and willingness to comply with the law rather than lack of knowledge *per se*. As she explained"

Farmers are different breed. They've been operating on their land as a farmer, it might have been a family farm ... They're not monitoring the flow, clearing of fields within wetlands, clearing of fields in general, impacting diverting water It's basically a law to their own if you've got a farm. So that would be my take on it (Transcript 14, p. 5).

4.3.5 Consultants

Participant 2 had a view on water law training needs and gaps in the consulting community of practice. He claimed that some consultants were not only unqualified to do water licence applications (in that they treated a water use licence application in the same way as an application for an environmental impact assessment, which was to conflate an operational with a planning authorisation), but also unscrupulous (Transcript 2, p. 5).

In this regard, he mentioned a case where consultants had charged a client with 19 small mines half a million rand per mine for licence applications they didn't need (Transcript 2, p. 7). This comment raises the question of training needs focusing on both values and ethics and knowledge of the law.

4.4 OPPORTUNITIES

In the final section of the questionnaire and interviews, respondents and participants were asked to comment on opportunities in the water law training sector. While there were markedly fewer comments, some interesting insights emerged on practical training, multi- and trans-disciplinarity, and collaboration.

4.4.1 Practical training

A few questionnaire responses **emphasised the need for more practical water law training**. Water law training is 'too theoretical', there is insufficient training provision for 'practical law', and 'practical application of water law principles is essential for professionals working in the field'. Some training programmes lack 'practical elements' such as 'case studies, simulations and hands-on exercises'. To bridge the gap between theory and practice, trainers should incorporate 'real-world examples, problem-solving exercises, and interactive learning methods.' More practical training was also a concern amongst some interview participants. As already noted, Participant 10 urged that training for local government officials must involve 'application, application, application' (Transcript 10, p. 13), while Participant 5 stressed the need for proper training for senior officials, complaining that an overview of provisions of the NWA simply amounted to 'induction'.

Practical training calls for practically experienced trainers and facilitators. Participant 19 captured this well. Relating how she had called on two water law practitioners (one, an attorney who had been involved in drafting the NWA, and the other a prominent water activist) to present at a water law course she was teaching she said: *And I think the students find it very, very interesting ...because it was from somebody who was actually involved in that particular sector with that particular issue* (Transcript 19, p. 7). Everybody brings in a different perspective, depending on what they are involved in and what they are working on. Even university-level students *want people who are knowledgeable not only at a high-level legal perspective, but also knowledgeable ... on the practical side of things* (Transcript 19, p. 7).

4.4.2 Multi- and trans-disciplinarity

A few participants mentioned how **exposure to different disciplines in inter- or multi-disciplinary contexts** had advanced their understanding of law in the water sector. Participant 2, for example, spoke positively about engaging with a law professor when they were both enrolled for a Masters of Environmental Management course at North-West University (see section 3.4.2 above). Participant 1 spoke effusively of a project where 'cross-fertilisation' between lawyers and scientists had been possible: *I learned from, in these interdisciplinary project, you learn a lot from lawyers, but the lawyers also learn a lot from the water people because water is different* (Transcript 1, p. 8).

Participant 2 framed multi- and trans-disciplinarity as an opportunity for water law training as follows:

There's huge opportunity to have a transdisciplinary training environment established, especially at academic institutions ... Establishing a school for water governance, for example, where you have both the scientists and the lawyers co-presenting and discussing and capacitating the attendees in what is the sciences you need to understand and then what are the legal principles (Transcript 2, p. 10).

Participant 21, echoing Participant 2's comments about water training being 'silo-astic' motivated for *dropping those silos and trying to have a cross a mix of disciplines who end up engaging in water law actually teaching it or teaching parts of it* (Transcript 21, p. 7).

Although such a multi-disciplinary training institute has not been established for water specifically (although at least one academic institution has mooted this as a possibility), institutions that offer postgraduate training programmes in environmental management already provide training grounds for this disciplinary exchange to occur.

4.4.3 Collaboration and co-operation

Several respondents and participants **identified co-operation and collaboration as water law training opportunities**. Participant 15 envisioned broad-scale collaborations between multiple communities of practice:

Key opportunities in water law training include targeting a wide range of stakeholders, including legal practitioners, government officials, engineers, and environmental professionals, to ensure a holistic understanding of water law. Collaborations between legal institutions, government agencies, and universities can facilitate the development of comprehensive training programs and resources to address the growing demand for expertise in water law (Transcript 15, p. 1).

Participant 5 suggested collaboration between the department and academics. Academics came with theory but had no on-the-job experience, people working in the department were the *'foot soldiers'* that came with *'on the job things'* (Transcript 5, p. 13). Bringing these two communities together for a discussion could lead to a better outcome (*have a discussion where each other's brain, yes there will be some fights because you guys are the academics but we and we are now the foot soldiers. But somehow through that I think it can be something can happen. Something can be a bit better*) (Transcript 5, p. 13)).

Participant 9 urged for there to be more collaboration between the department, other national departments and municipalities because *'local government is literally where everything is happening'* and increased collaboration would improve services to individuals and communities (Transcript 9, p. 10)

Participants 3 and 12 made interesting submissions on cross-border, regional and Africa-wide collaboration. Participant 3 pointed out that water is not just a South Africa problem or issue, but one that also affects other SADC countries who are having similar challenges with regards to environmental issues and crimes, inclusive of water-related issues. He mentioned a model law on gender-based violence based in the SADC Parliament, and wondered whether a similar initiative could be undertaken to develop a 'moral law' for water (Transcript 3, p. 16). Participant 12 believed the training he was providing on water authorisation processes could be rolled out into other African countries, with a view to protecting the water resource. This could also provide training opportunities for the many job seekers in the environmental management sector (Transcript 12, p. 8).

Participant 19's envisaged collaboration amongst water law training providers. To make water law 'real and practical and accessible', it would *'be quite useful to have some sort of open-source website where anything to do with water law or related cases or articles could be published* (Transcript 19, p. 8) (The idea of an online, collaborative water law course offered by multiple academic institutions was also mooted at the Environmental Law Association Conference held on 13 October 2023, and positively received.)

4.5 SUMMARY AND DISCUSSION

Epistemological linkages; policy, legislative, and implementation uncertainty; provisioning issues; and challenges relating to value make water law training challenging in South Africa. While participants underscored the importance of water law's links to understanding a colonial heritage and the current political context on the one hand, and the links to a panoply of natural sciences on the other (ranging from ecology to chemistry and engineering), others highlighted the provisioning challenge of fitting even all the substantive water law into a specialist course. The insight that it is *how* water law is taught – understanding its social and environmental linkages from a critical perspective (which also tends to ensure that knowledge 'sticks') – is an important one.

Several participants flagged the **gap between water law and its implementation** as a difficulty that can also undermine initiatives in a teaching context. The need to instil knowledge of the lofty principles and values underlying water law, and the demand for compliance-centric water law teaching is also a challenge.

A dearth of formal water law training opportunities was noted, but respondents and participants tended to frame **water law training gaps and needs in terms of knowledge deficits or training needs in particular communities of practice.**

Most of the comments about gaps and needs in water law training related to government and revolved around various perceived failings in the regulatory function, such as inconsistent advice, failure to abide by the principles of administrative justice, and failure to maintain public-facing information systems. But comments also brought to the fore the **difficulties and complexities** departmental insiders face, including being thin on the ground, needing to deal with frequently shifting regulatory points of focus, and lack of appreciation for the importance of water law because there are 'other aspects' that need to be taken into consideration. Insiders confirmed training needs within the department (including the lawyers who provide training themselves) and a need for ongoing training for senior EMLs.

There was a particularly valuable comment regarding **local government** training, which stressed the critical importance of practical, application-focused training in substantive water law, municipal by-laws, Treasury and tender regulations, and the natural sciences necessary to quickly troubleshoot problems with municipal water infrastructure.

Several participants spoke about **water law training for the general public or for particular communities because 'people were not at all aware of their rights'**. While one participant was already involved in presenting a donor-funded course on environmental rights which always includes a water law component, other ideas for public outreach included billboards, news media, and programmes instituted by other organisations. Opinion diverged, however, on the key focus of 'community' training, with some envisaging a more restricted focus (such as commercial water users).

There was a convergence of opinion that **members of the legal services community of practice do not know enough about water law.** There appears to be a particular need for targeted training for prosecutors on the rules of criminal procedure and evidence in recognition of the fact that it is not always desirable to resolve a water law dispute through plea bargaining.

Opinion diverged on whether members of the water law administration community of practice need water law training, although there was a suggestion that the issue is more a matter of political will and ethics than knowledge of the water law.

Respondents and participants identified practical training, multi- and trans-disciplinarity and collaboration and co-operation as water law training opportunities. Useful suggestions for 'practical elements' included case studies, simulations, hands-on exercises, real-world examples, problem-solving

exercises, and interactive learning methods. Participants concurred that multi-disciplinary learning spaces had led to fruitful learning experiences and at least two motivated for a less siloed approach to water law training. Respondents and participants expressed enthusiasm for collaboration and co-operation but diverged on the scale of collaboration and collaborating parties.

CHAPTER 5: CONCLUSIONS & RECOMMENDATIONS

5.1 INTRODUCTION

This Report has presented the findings of the final stage of research for the project *Consolidating and Catalysing Water Law Expertise*. In particular, it has responded to the first project aim of assessing the current levels of capacity to produce law graduates specialising in water law by mapping the water law training *status quo*, extent of formal water law training and pathways to water law expertise (Chapter 3); to the second project aim of identifying key themes, trends and gaps in the current body of knowledge on South African water law by presenting an evidence-based understanding of water law and water law work (Chapter 2); and to the third project aim of contributing to development of an agenda for future investments in research and capacity building in water law by presenting the findings of an empirical inquiry into the challenges, needs, gaps and opportunities in water law training (Chapter 4).

This final chapter synthesises the findings and insights of the report across the six categories of the **who, what, how, when, where, and why** of water law training in the hope that this framework provides the most accessible in-roads to formulating a more detailed investment strategy for water law research and capacity building. It concludes with recommendations.

5.2 CONCLUSIONS

5.2.1 Who should be trained?

The research indicates that the **government community of practice** should be prioritised in terms of training investments with **local government training** arguably at the forefront.

Several participants bemoaned the dire state of water services in the country. At least one participant explained the systemic difficulties that impede local government officials from being able to utilise grants for water infrastructure projects within the time-scales imposed by National Treasury. Even without the systemic difficulties that the time-scale of public finance management imposes, **local government officials need mastery over substantive water law, municipal legislation, municipal by-laws, Treasury and procurement legislation and a good enough understanding of engineering and chemistry to be able to drive these processes and draft meaningful specifications for water infrastructure investments**. As far as could be ascertained, however, current water law offerings at academic and private institutions make **no provision** for this key gap.

Both insiders and outsiders identified the need for training within the DWS. Notwithstanding training offerings such the Occupational Certificate in Water Regulation, participants reported on a lack of consistency in interpretation and enforcement amongst DWS regional officials. Departmental insiders framed existing water law training as 'induction' suitable only for junior colleagues and suggested that a different training approach was needed for more senior colleagues – one that was more case-centric, analytical, and applied. The lawyers in the department who are also tasked with training need training themselves. A comment to the effect that water law is not seen as important because 'other considerations' come into play is of concern, as post-democratic water legislation is a critical element of the broader, long-term national project of transformative constitutionalism.

While there is an identified need for general public and community-level education in water law suggestions on the scope and focus of this form of water law training were unfocused. There seems to be a

general perception that most South Africans are not aware of their water rights – either under the NWA or the WSA – and that particular groups (commercial users for instance) are not fully-appraised of the water use obligations. Identifying the channels for a better appreciation of water rights and duties could be the subject of further research.

There are suggestions that members of the legal service community of practice could know more about water law, or that there are not enough water law specialists. Existing postgraduate water or environmental law offerings at academic institutions and private water law courses arguably already serve this community, and spaces for reflexive learning within sub-groups of legal practitioners are already developed, either as ad hoc or more informal programmes or seminars. Investments in water law training for this community of practice are therefore less of an immediate priority. The one exception could be targeted programmes on the law of procedure and evidence for prosecutors who may be faced with prosecuting water law offences in court.

5.2.2 What should be included in a water law training course?

The evidence-based assessment of water law work showed that **the pillars of water law include the NWA, WSA and their accompanying regulations, the NEMA principles, principles and rules of administrative justice, constitutional and human rights law, and international water law.** Apart from the principles and rules of administrative law, these pillars of water law are already included in the water-specific courses offered by academic institutions and private service providers. In general, environmental law courses, the coverage of water law is more limited and is often split between ‘natural resources’ and ‘pollution control’ elements. General environmental courses, however, enable students to draw linkages between water and other areas of environmental law, and also teach important cognate areas of law such as biodiversity and waste law.

Administrative law might be falling between the cracks. At least one course offered by a private service provider teaches basic principles of administrative justice, but in law-based water-specific or general environmental law courses knowledge of administrative law is assumed to be in place. Administrative law principles are also not prominent in the occupationally focused SAQA-registered qualification on water regulation. There is scope both to expand the administrative law focus in existing post-graduate academic offering and to infuse occupationally-focused qualifications with a more extensive knowledge component on administrative law.

Customary laws and uses pertaining to water are almost completely marginalised and omitted in the current training landscape – this notwithstanding that there are already points of articulation between customary laws and posited law (statutes and caselaw). Ways of capturing customary laws and uses into a water law training curriculum – either as a knowledge component, practical training or experiential learning – should be the subject of further research.

Water law should not be taught in a siloed manner **and its epistemological links to other social sciences (colonial studies, political economy) and natural sciences (chemistry, engineering, ecology, hydrology, geohydrology) should be developed in water law training offerings.** At present, the best option for a student with a foundational knowledge in law to acquire some understanding of natural sciences linkages would be to enrol for a postgraduate programme in environmental management. While there is already at least one course that provides an ‘environmental law for science students’ learning experience, a counterpart offering (‘water science for law students’, for example) seems to be lacking. This may in part be due to the vertical epistemological structure of these disciplines and the difficulty of deciding what to teach. A possible way to transcend the difficulty of selecting which science would be the most pertinent and accessible for water lawyers could be to focus on critical areas of intervention, such as protecting strategic water source areas or improving municipal water supply.

From accounts of water law work, as well as water law challenges, needs, and gaps it appears that the **'soft skills' of negotiation, collaboration, co-operation, and mediation** could be useful additions to a water law training curriculum (with none of the existing offerings focusing on this). The utility of these skills in actually making water law work in South Africa, and how to include these skills in water law training curricula, could be avenues of further research.

5.2.3 How should water law be taught?

Trainers are faced with the choice of trying to incorporate as much substantive content into a water law training offering as possible (water law and its cognate legal fields), or **training law students in how to find and work with the law alongside inculcating important mindsets (the linkages between law, and social and environmental injustices, for example) and exposing students to critical perspectives**. Given limited teaching time, the latter appears to be the preferred approach, at least amongst legal academics.

There was a strong convergence of opinion that water law training should be more practical, such as including case studies, simulations, hands-on exercises, real-world examples, problem-solving exercises, and interactive learning methods. However, developing these practical course assets takes far more time than developing course material on the theoretical aspects of water law. There is appetite for inter-varsity collaboration to develop an online platform either for a water law course itself, or for the practical components for such a course.

There was also a strong convergence of opinion that water law training should be multi-disciplinary and not siloed, however from the research it is not clear, firstly, which of the hard sciences would be most relevant for water lawyers, and how the knowledge and methods of such sciences could be taught in an accessible way.

5.2.4 When should water lawyers be trained?

One of the key findings of the research is that one becomes a water law specialist over time through a combination of foundational training, workplace experience, further education, and informal learning opportunities. There are thus **many training opportunities over the course of an entire career**, and all are valuable for developing water law expertise.

There is a clear need to provide **better and more sophisticated water law training programmes for senior departmental officials and EMIs**. While induction-oriented programs that present an overview of water law have their place, at present there are no offerings that accommodate this need.

5.2.5 Where should water lawyers be trained?

Another key finding of the research is that water law expertise develops in a myriad of spaces – from self-study and supervised research to formal and informal learning opportunities, and through on-the-job experience. **Water law training is not the exclusive preserve of foundational education in academic institutions**. While academic programmes have their place, to maximise the benefit of already-existing water law training provision, it is important to recognise the learning spaces in communities of practice, donor-funded training and informal training opportunities such as seminars, conferences and workshops.

While some communities of practice already have ad hoc or more formal on-going learning programmes in place (e.g. professional development for legal practitioners), **these spaces and platforms seem far less well-developed (if at all) within government, where officials likened their role to 'firefighters'**. The need

to train and develop champions within the department who could organise reflexive learning spaces, or even to formalise this role, is something that could be considered.

5.2.6 Why should water lawyers be trained?

Presently, water law work and training appear to have a compliance-centric bias. The ‘why’ of water law training brings the question of how values and ethics fit within the water law curriculum. While compliance can be seen as a value in and of itself, the foundational values of water law in South Africa include sustainability, equity and transformation. This is supported by the values of administrative law (rationality, procedural fairness, reasonableness) and environmental principles (precaution, environmental justice, polluter pays, and so on). Internationally and comparatively, the recognition of intrinsic nature values is also gathering pace. The question of how to inculcate these values and ethics into mindsets and behaviours is one that should be addressed by all communities of practice and could be the topic of a future area of research.

5.3 RECOMMENDATIONS

- **A community of practice framing should guide a future investment plan for water law training.** The water sector is complex, spanning the allocation, protection, and conservation of raw water sources as well as the sustainable provision of water services. The regulatory environment is equally complex and extends beyond water-specific legislation and common law to include municipal legislation and by-laws, administrative law, environmental law, and customary law. Individuals and groups assume different roles and responsibilities within this regulatory matrix. A single water law offering couldn’t possibly cater to the needs of all water law communities. This research has confirmed that peer-to-peer water law training already takes place within specific water law contexts, which is but one indicator of the existence of water law communities of practice.
- **Knowledge reproduction and ‘training’ within the customary law community of practice requires further investigation.** Despite being identified as a potential area of water law expertise, customary water law barely featured in the questionnaire and interview responses. This is concerning and possibly reflects the fact that unlike the Constitution and, to a lesser extent, land legislation, customary water law is not sufficiently recognised in South Africa’s water laws. Almost no formal water law training offerings teach customary water law. There is a need for further research to understand the mechanisms of knowledge production and ‘training’ in customary water law contexts, and how best those methods of knowledge transmission should be incorporated into training for specific communities of practice.
- While there were mixed responses on training needs within the water administration community of practice, these comments largely came from outsiders to this community. **Further research is required on the training needs within the water administration community of practice, particularly as regards the values that South African water law espouses.**
- **Peer-to-peer learning in the government community of practice should be encouraged and strengthened.** There can be further research on how Lipsky’s notion of ‘street-level bureaucracy’ can support peer-to-peer learning. Going forward, a practical project in this vein would be for selected government officials and EMIs to co-create a water law course for more senior officials with academic or commercial water law service providers.
- **The administrative law component of occupational water law offerings should be strengthened or further developed.** Currently, the SAQA-registered Occupational Certificate: Water Regulation Practitioner (SAQA ID101471) caters for the needs of water inspectors but does not include a strong

administrative law component. This occupational qualification should be reviewed, or a new qualification should be registered.

- **Further research is required to map the scope and dynamic of intergovernmental relations in water law and the skills that sustain successful inter-departmental collaboration.** Co-operative government is a pillar of the 1996 Constitution, but translating chapter 3 into successful inter-departmental relations (inclusive of DWS-COGTA, DWS-DFFE, DWS-Municipal Water Service Authorities) is still a work in progress. The significance of skills such as negotiation, co-operation and collaboration were flagged in the research, but the status of best practice in this regard within the water sector (and how it may be taught) is unknown.
- **DWS, COGTA and the South African Local Government Association should collaborate on appointing a service provider to develop an inter-disciplinary, inclusive water services law offering for local government officials.** Officials working within South Africa's municipal water services authorities must navigate the complexities of water, municipal, public procurement, and Treasury regulations in the course of their duties. There is currently no customised training offering that services this need.
- **Investigate and support the establishment of a multi-disciplinary training institute for water.** Although 'law for non-lawyer' courses exist, there are no 'water science for non-scientist' courses, other than the more generic environmental management programmes. There are existing multi- and interdisciplinary research institutes at some public higher education institutions (Institute for Water Studies (UWC), Future Water Institute (UCT), Centre in Water Research and Development (CiWARD)/Wits H₂O (Wits), Institute for Water Research (Rhodes)), but they do not conduct science service teaching. A multi-disciplinary training institute for water could offer training on the full panoply of water-related laws, the most relevant natural sciences, and critical perspectives from the social sciences.
- **Explore the possibility of a collaborative online water law offering.** There is already appetite for the collaborative development of an online water law course offering (incorporating practical components) that could be designed for the general public or a particular community of practice. Funding and support for such a venture could be explored with an institution such as the Environmental Law Association of South Africa.
- **Consider a more regular water-focused moot court competition.** The water-focused moot associated with the project served as a training opportunity for approximately 400 students from across public and private higher institutions of learning. Having a regular moot court competition of this nation (every two or even three years) will consolidate this interest and energy.

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- Transcript 1
- Transcript 2
- Transcript 3
- Transcript 4
- Transcript 5
- Transcript 5
- Transcript 6
- Transcript 7
- Transcript 8
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APPENDIX A: MATERIAL ENGAGEMENT WITH WATER LAW

Individuals were included in the Water Law Expert Directory if there was evidence of material engagement with any of the substantive sources of water law. Evidence of such material engagement could include:

- i) Teaching a water law course or water law as part of a course at a tertiary training institution;
- ii) Leading or participating in a water law-related project at one of the State-funded scientific research councils;
- iii) A water-related research project at a higher degree level (Masters by Research Report, Dissertation or PhD);
- iv) Publication of a water law-related research in peer-reviewed publications;
- v) Publication of water law-related commentary in popular publications, in the traditional media or on social media platforms;
- vi) Official employment in a national, provincial or local government department, a statutory body (e.g. water boards), or a catchment management agency, where such employment requires regular consideration and application of substantive water law;
- vii) Official employment in a national, provincial or local government department, where such employment requires enforcement of substantive water law;
- viii) members and administrators of Irrigation Boards, Water User Associations, and other statutory and other water bodies (Farmers' Unions, s 21 water management companies, associations such as SAAFWUA, etc.) who are involved with the implementation of the water law, or have assigned or delegated powers related to the management of water;
- ix) Prosecution of water-related offences;
- x) A water law-related practice, either as an attorney or advocate;
- xi) Service as a member of the Water Tribunal;
- xii) Adjudication of water law-related disputes, either as a magistrate or a judge;
- xiii) A water law-related consultancy;
- xiv) Engineers, hydrologists, geohydrologists and other professionals working in the water field, with experience of water law vast experience, expertise and knowledge;
- xv) Involvement in water law campaigning, advocacy or public interest litigation within the context of a community-based or non-governmental organisation;
- xvi) Position of authority, activism or advocacy in a system of living customary environmental law.

APPENDIX B: ONLINE QUESTIONNAIRE

Online Questionnaire: *Consolidating and Catalysing Water Law Expertise*

Google sheet survey

A. Consent

Please tick the relevant box:

The research study was explained to me. I understand what this study is about. YES NO

I understand that I can volunteer to take part in the study YES NO

I agree that my participation will remain anonymous (my name will not be used by the researcher in their research report/manuscript/book chapter) YES NO

B. Questions:

1. Please verify the nature of your water law expertise. Tick all that apply.

- Past or current teaching of a water law course
- Completed or current PhD research
- Completed or current Masters research
- Past or current project member at state-funded scientific council
- Publication in peer-reviewed journal
- Publication in popular media
- Official employment in a national or provincial department
- Official employment in a municipality
- Service on a Water Board
- Member of an Irrigation Board
- Member of a statutory water user association or alternative water user structure
- Prosecuted water-related offence
- Water-related legal practice
- Past or current member of the Water Tribunal
- Adjudication of water-related disputes
- Water-related consultancy
- Water law campaigning and advocacy
- Position of authority, activism or advocacy in living customary law relating to water
- Other: specify

2. How do you use water law in your work. Tick all that apply:

- Advisory
- Operational
- Regulatory (licensing and compliance monitoring)
- Enforcement

- Adjudication
 - Advocacy and campaigning
 - Teaching
 - Research
 - Other (please specify)
3. Which sources of water law do you use in your work? Tick all that apply:
- Constitution
 - National Environmental Management Act
 - National Water Act
 - Water Services Act
 - Administrative law (Promotion of Administrative Justice Act)
 - Living customary law
 - Municipal by-laws dealing with water
 - International water law
 - Other, please specify
4. How frequently do you work with water law? (scale 1-5, 1 = rarely, 5 = all the time)
5. Please indicate your specific area(s) of water law experience or expertise? Tick all that apply.
- National environmental management principles
 - Public trusteeship
 - Reserve determination and water classification
 - General authorisations
 - Licensing
 - Control of water pollution
 - Existing lawful water uses
 - Compulsory licensing
 - Water tariffs
 - Functioning of catchment management agencies
 - Functioning of water services authorities
 - Functioning of other statutory water institutions)
 - International water management
 - Government water works
 - Dam safety
 - Water servitudes
 - Intergovernmental water relations
 - Other
6. Do you have formal water law training?
- 6.1 If yes, name the course you completed/undertook?
- 6.2 Was the water law training relevant to your work on water law?
7. Do you have formal training in administrative law?
- 7.1 If yes, name the course you complete/undertook?

8. What are the most important needs or opportunities water law training providers should be addressing?
9. What are the gaps in current water law training provision?
10. What opportunities should water law training providers be pursuing?

C. Willingness to be interviewed

Are you willing to be interviewed on gaps, needs and opportunities in the water law sector?

YES/NO

If so, please provide your name and contact details.

APPENDIX C: DISTRIBUTION OF ONLINE QUESTIONNAIRE

Tranche 1: On 17 April 2023 the first tranche of emails was sent to the first 100 academic community of practice experts; 10 of the academics had only their LinkedIn profile links listed and were not emailed; 19 academics did not have any contact details listed and those academics were not contacted; 7 emails bounced back.

Tranche 2: On 24 April 2023 I sent out the second tranche of emails targeting the next set of 100 academic community of practice; 16 academics had only their LinkedIn profile listed and were not emailed; 14 academics did not have any contact details listed and those academics were not contacted.

Tranche 3: On 24 April 2023 I sent out third set of emails targeting the next set of 100 which consisted of 15 academics, 40 consultancy and 45 government community of practice; 1 academic had LinkedIn profile listed and was not emailed; 2 government had LinkedIn listed and were not emailed; 2 academics did not have any contact details listed.

Tranche 4: On 24 April 2023 I sent out fourth tranche of emails targeting the next set of 100 government community of practice; 2 had LinkedIn profiles listed and were not emailed; On this day 18 emails bounced back.

Tranche 5: On 02 May 2023 I sent out last tranche targeting the last 308, 52 government community of practice; 1 government had LinkedIn profile listed; 4 government had telephone numbers listed; 1 government did not have any details listed; 1 legal LinkedIn profile listed; 18 numbers listed; 7 no contact listed; 2 emails bounced.

Tranche 6: On 08 May 2023 240 legal community of practice, 14 social justice community of practice; legal LinkedIn profile listed.

On 29 May 2023 I sent 6 tranches of emails giving experts one more chance to participate to fill in the Google Form.

Tranche 7: On 20 June 2023 25 water law training directory experts were emailed to fill in the Google Form.

Responses received:

1. *Thank you for the invite to participate in your Project; however, I am not an expert in the field. I am a physicist.*
2. *Apologies, I am not a Water Law Expert. Best wishes.*
3. *Thanks for the invitation to take part in Water Law questionnaire. Kindly excuse me from partaking as I am no water law expert and am already over 80 years of age. Good luck with your project.*
4. *Thanks for contacting me on your research. Unfortunately, I am unable to assist because I do not work on water related research.*
5. *I am not a law expert by a long shot. I have copied _____ who has more authority than me on the subject.*
6. *Perhaps this was intended for _____? Best wishes*
7. *I am not a water law expert. Please remove me from your study.*
8. *I refer to the above matter. The FXI does not have expertise in water law as it falls outside our mandate.*
9. *I am not a water law expert. Please remove me from your study.*
10. *So sorry that I'm too tied up right now... if it helps, though, my critique of SA water constitutionalism is attached...*

APPENDIX D: INTERVIEW PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Dear Sir / Madam

My name is Tracy-Lynn Field. I am a Professor in the School of Law (Staff No. 00300002) and the Principal Investigator on a project funded by the Water Research Commission (WRC), titled *Consolidating and Catalysing South African Water Law Expertise* (No. 2022/2023-00888) ('the Project'). The Project aims to identify water law experts in public, private and social justice institutions in order to consult them on gaps, needs and opportunities in water law. The Project is ultimately aimed at informing further investment in water law capacity building. Ms Basetsana Koitsioe based at the Centre for Applied Legal Studies is assisting me with this project.

During the first phase of the project, and having regard to information in the public domain or in existing databases, we identified you as a water law expert. In an online questionnaire sent to all experts in our database, you indicated your willingness to be interviewed on gaps, needs and opportunities in the water law sector. I am accordingly inviting you to an online follow-up interview on MS Teams, which will last about one hour. The interview will take place at a time convenient to you.

The interview will further explore themes in the online questionnaire, including questions that ask for personal information as defined in the Protection of Personal Information Act 4 of 2013. Specifically, this will include questions on the nature of your water law expertise, how you use water law in your work, and whether you have had any formal training in water or administrative law.

The interview will be confidential and anonymous. When we share the results of the research study, we will not include your name or anything else that could identify you, including your institutional affiliation or position. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on.

With your permission, I would like to audio record the interview. Only myself and Ms Koitsioe will have access to the audio file generated by MS Teams. Any subsequent analysis of the interview will be stored in a file on a password-protected computer.

Participation in the interview is voluntary. It does not attract any direct benefits, but will also not result in any costs other than the data for the online interview. You do not have to answer any questions if you do not wish to. The risks for this research study are no more than what happens in everyday life.

The interview will be analyzed by myself and Ms Koitsioe and will be written up as a research report on gaps needs and opportunities in water law for the WRC. After the necessary review and approval processes within the WRC, the report will be published on their website.

If you have any questions during or afterwards about this research study, feel free to contact me on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,
Prof. Tracy-Lynn Field
Tracy-Lynn.Field@wits.ac.za; Tel: 011 7178460

Consent Form

Consolidating and Catalysing South African Water Law Expertise (No. 2022/2023-00888)

Name of researcher: Professor Tracy-Lynn Field, Ms Basetsana Koitsioe

I, agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

- | | | |
|--|-----|----|
| The research study was explained to me. I understand what this study is about. | YES | NO |
| I understand that I can volunteer to take part in the study | YES | NO |
| I agree that the interview may be audio recorded | YES | NO |
| I agree that direct quotations from my interview may be used by the researcher in their research report | YES | NO |
| I agree that my participation will remain anonymous (my name will not be used by the researcher in their research report) | YES | NO |
| I agree that other researchers may use the information I provide in my interview (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on | YES | NO |

..... (signature)

..... (name of participant)

..... (date)

APPENDIX E: INTERVIEW SCHEDULE

Interview Schedule: *Consolidating and Catalysing Water Law Expertise*

1. Could you please briefly elaborate on how you use water law in your work? Which aspects of water law tend to come up most often?
2. Have you received any formal training in water law? (consider also that this may have been training in environmental law) If so, what was your experience of the training? Do you yourself offer training in water law?
3. One of the themes that has come up in the reference group meeting is the importance of administrative law in water-related issues. What are your thoughts on this? Are there any other areas of law you would consider essential to training in water law?
4. In your view, what are the key gap or needs in the water law training sector?
5. In your view, what are the key opportunities? (Who should we be training, how)

APPENDIX F: DETAILED DESCRIPTION OF WATER LAW TRAINING COURSES

This list of water law training offerings draws on information compiled by N Nel, N Moodley and MJ Jackson *Water Research Development and Innovation Roadmap Skills Mapping Study*, Volume 2 (as set out in a Postgraduate Training Map) and supplemented by online research (compiled in a Water Law Training List). There are not many institutions, specifically public universities, that offer some kind of water law training, module or course. The public universities that offer water law training identified in the Water Law Training List were identified in the Postgraduate Training Map. However, the latter does not include the University of the Free State (UFS) which does offer some kind of water law training.

Academic Institutions

University of Cape Town – The School of Law offers Environmental Law for Non-Lawyers (PBL5045S). The inclusion of an environmental right in South Africa's Constitution has led to the emergence of many environmental laws and court decisions in the past 15 years. These developments are of key relevance to those working in the environmental sector including developers, consultants, biologists, zoologists, planners, sociologists and anthropologists. This course provides students undertaking postgraduate studies relevant to the environment with an insight into relevant principles of international and domestic environmental law. Key content covered in the course includes: an introduction to basic legal principles and resources; constitutional aspects (environmental rights, access to information, administrative justice and access to courts); framework environmental laws; land-use planning laws (planning law, environmental impact assessment and protected areas); natural resource laws (biodiversity, water and marine living resources); and pollution laws (fresh water, land and air pollution). Aspects of water law are also covered in UCT's LLM courses on Pollution Law and Natural Resources Law.

University of the Free State – Faculty of Natural and Agricultural Science offers the PG Dip IWRM which is a part-time, one-year degree, that aims to equip professionals in the water sector with the skills to deal effectively with the complex problems that arise while managing water in a semi-arid environment. The skills and knowledge offered relate to a variety of fields: from engineering, climate, hydrology, ecology, planning, and natural resource management, to environmental law, social development, and governance. The professional in the water sector are expected to cross social, environmental, and technological boundaries to address a range of matters relating to sustainable resource management. This professional qualification consists of three compulsory coursework modules one of which is IWRM5846, titled Water Resources Management and Legislation. The MSc in Integrated Water Resources Management offered by the same institution does not include a legislative component.

University of KwaZulu-Natal – The LLM in Environmental Law includes courses on Natural Resources Law and Pollution Control Law. Aspects of the water law framework are split between these two courses.

University of Limpopo – Offers an LLM in Development Law which includes Agricultural and Water Law as an elective (AGWL804). A compulsory course in Environmental Law also forms part of the degree. Further information on this course has not yet been obtained.

University of Limpopo – Bachelor of Science in Water and Sanitation Water Policy (SWTB041) – Governance and institutional framework underpinning water resource management, socio-economic factors impacting on effective water solutions, planning, design and operation of water and sanitation projects will be covered. The module will further consider project management principles, integrated water resource management, relevant legislation for water services, roles and responsibilities of water sector institutions.

University of Pretoria – Environmental Law (postgraduate level) in the Department of Geography Geoinformatics and Meteorology, under the Faculty of Natural and Agricultural Sciences. Module Content includes legislation for sustainable development within the framework of international agreements, the different acts affecting water quality and water use, the SEMAs within the NEMA framework, the NEMA EIA regulations, legislation pertaining to hazardous substances, interaction between mining development and NEMA, energy law, strategic environmental legislation, marine and coastal management.

University of Pretoria – LLM Environmental law 802 (ENL 802). This module involves advanced study of the following: (a) Key concepts and principles of environmental law in the context of a South African constitutional dispensation Nature and scope of environmental law (b) South African environmental framework legislation and policy concerned with environmental governance, compliance and enforcement, including in relation to integrated environmental management and environmental impact assessments, the protection of marine and terrestrial biodiversity, waste management, pollution control, mining and energy, water management, land use and planning and climate change.

University of Witwatersrand has a dedicated water law offered at an LLM level: LAWS7208A (Core) or LAWS7209A (Non-core) or LAWS5120A (PGDip). Water Law is an elective course in the LLM specialisation in Environmental Law. The course examines the international, common and statutory law rules that govern water in South Africa, and is one of the few dedicated courses in the country that focuses specifically on this topic. The course proceeds from the assumption of an in-depth knowledge of the basic concepts of constitutional law, human rights, and administrative law. It builds on some of the foundational principles of Environmental Law and Sustainability I, such as sustainable development, environmental justice and environmental impact assessment. Water Law is intended to facilitate a comprehensive and critical engagement with the principles, policies, institutions and regulatory framework governing the management and use of raw water and water services in South Africa. It canvases South Africa's international water law obligations, the constitutional rights to water and their interpretation by South African courts, and the notion of public trusteeship of water resources. Students will gain a systematic and comprehensive understanding of statutory roles and responsibilities relating to the use of raw water, water services and water dispute adjudication. The course further examines the various regulatory tools for managing, using and conserving, and delivering basic water and sanitation. *Capita selecta* seminars focus on trade in water use authorisations, and mechanisms for compliance, monitoring and enforcement, the protection of strategic water sources areas, pricing for water services, and tools to address the water-related impacts of climate change. The key statutory sources for the course are the National Water Act 36 of 1998 (National Water Act) and the Water Services Act 108 of 1997 (Water Services Act).

University of Venda – Department of Hydrology and Water Resources Management. HWR 2641: Water Law & Institutions Module Content: Legal concepts and the legal framework relating to water as a resource; the property of water and the right to use; regulation of the quantity of surface-water and groundwater; protection of water quality; definition of the concepts and issues in the management of the resource; water policy and law in South Africa; traditional institutional arrangements and alternative institutional structures; decentralization and user participation in technical, financial and administrative operations.

University of the Western Cape – ESS122 – Environmental Law, Provides a basic introduction to South African Environmental Law. There is a Textbook for the course: Michael Kidd 2011 Environmental Law, Juta, Cape Town <http://uwc.worldcat.org/title/environmental-law/oclc/748500625>. WEEK 4 of the lecturing schedule consists of Water Law and Management pp 68-96, 167-172 (Kidd 2011)

Other Institutions Identified in the Water Training and Expert Directory List:

All Connections – All Connections offers an Occupational Certificate: Water Regulation Practitioner (SAQA ID101471). According to the SAQA registration, the qualification of 216 credits was registered in 2019 (last enrolment will be in September 2025). The purpose of this qualification is 'to provide the learner with the

required knowledge, skills and practical experience to prepare a learner to operate as a Water Regulation Practitioner.' A Water Regulation Practitioner protects water resources and related infrastructure through the development and effective implementation of appropriate regulatory requirements (authorise, enforce, compliance monitoring, regulation and protection). Qualifying learners will be able to: generate valid and updated water quality reports for a designated area; conduct inspections and audits to ensure compliance with regulatory requirements; evaluate applications for the issuing of water use authorisations/permits; and build and maintain productive relationships within the water quality management and utilisation community. Knowledge modules include 213306-001-00-KM-04, Water Regulatory Framework, Level 8, 10 Credits (in addition to practical skill and work experience modules).

Carin Bosman Sustainable Solutions (CBSS) and the **Water Institute of South Africa (WISA)** present a course titled Water Governance. The 3-days course focuses on the principles of water governance, human rights, international water governance approaches, and sustainable water resource management initiatives. Sources of law canvassed include NWA, WSA, NEMA, NEMICMA, NEMWA, and PAJA and accompanying regulations. Specific focus given to the substantive and procedural aspects of Water Use Licences, including the preparation of specific documents such as Integrated Water and Waste Management Plans. The course also looks at dam safety and types of water servitude.

IMBEWU Sustainability Legal Specialists (Pty) Ltd – IMBEWU Training IMBEWU is specialised in the development of customised and focused legal training courses pertaining to sustainability related topics. We offer sustainability-related legal training courses and webinars to a wide range of attendees, as well as in-house training courses developed to clients' specific requirements and desired outcomes, varying in scope, depth and duration according to brief. Multi-disciplinary, practical learning programmes including industry specialists on energy, mining, health, safety and environmental law are also offered at our offices, at other venues and through webinars. IMBEWU is able to provide training on water law.

Inlexso Innovative Legal Solutions – offers training courses pertaining to all aspects of environmental law including water law. Training includes Identifying environmental, water, mining, waste legal risks, preparing clients for legal compliance audits by external auditors and government departments, including the Green and Blue Scorpions (preparation includes: internal audits, training, preparation, attending audits, advice during the audits), drafting of responses to findings and reports by external environmental legal compliance auditors and the Green and Blue Scorpions, assist clients with negotiations with government departments regarding environmental, water, waste and mining legislation, vetting authorisation applications to ensure that it complies with the letter of the law, assist clients with obtaining water use licences, mining rights, and other environmental authorisations, assist with litigation (including internal EIA and EMPR appeals, Water Tribunal appeals), environmental Management Systems, and giving advice on the Equator Principles.

Rand Water Academy (RWA) – The Rand Water Academy (RWA) was launched in 2012, its creation being the result of a need to confront water challenges as identified in Rand Water, the South African water and sanitation sector and that of the continent. The objective of the academy is to train and develop learners towards professionalization, to give unemployed learners (graduates & trainees) opportunities to get practical training in their respective functional areas, to create a pool of readily employable learners in, amongst others, the legal field. There do not appear to be any current projects relating to the development of courses on water law.

SIZA (Sustainable Agriculture in South Africa) – SIZA Environmental Standard and Training. The SIZA Environmental Standard is based on South African environmental legislation and aims to assist agricultural producers with understanding the requirements of South African environmental laws that are relevant within the agricultural context. It is therefore important that SIZA members maintain a good understanding of the environmental legislation that is relevant to their specific business. SIZA recognised a need for such training and developed a course to assist with the implementation of environmental legislation within the South African agricultural context. This training is relevant to farms, packhouses, and processing facilities and provides

guidance on the legal requirements regarding soil development, water usage, waste and wastewater management, as well as clearing invasive alien plants. It is presented through interactive webinars, as well as in-person training (<https://siza.co.za/environmental-legislation-training/>).

South African Institution of Civil Engineering (SAICE) – Water Law of South Africa – This course will familiarise the attendees with the principles of the water law of South Africa so that they have a better working knowledge and understanding thereof and can afterwards participate with confidence in their daily work.

Course content includes:

1. The water management policy process – The differences between principles, policies, strategies and law will be discussed as well as the role of each. Included will also be the organisational structure for water management.
2. Constitutional mandate relevant to water – The requirements of the following fundamental rights of the Bill of Rights will be analysed:
 - Environment that is not harmful and that should be protected when developing and using the water resources;
 - Right to dignity;
 - Measures to achieve water reform;
 - Access to sufficient water.

It will be explained how effect should be given to these.

3. Management and protection of the water resources – The principles and application of the public trust doctrine will be discussed. The role, legal requirements and applications of the National Water Resource Strategy and catchment management strategies will be analysed. The role, legal requirements and applications of the resource-directed measures (classification system and the determination of the class, resource quality objectives and Reserve for a specific resource), source-directed controls and measures to prevent and remedy the effects of pollution and control emergency incidents will be analysed.
4. Utilisation of the water resources – The elements of the framework to use water will be analysed and discussed. It will include the legislative requirements of what all the different water uses are and when and how a water use may be undertaken and the constitutional aspects regarding this.
5. Constitutional requirements when effect is given to the water laws – The requirements of the following fundamental rights of the Bill of Rights will be analysed:
 - Equality before the law (why may stricter requirements be placed on certain categories of water users than on others);
 - Protection of property (deprivation and expropriation of entitlements to water);
 - Administrative actions that are lawful, reasonable and fair. It will be explained why an understanding and application of these principles are essential and how effect should be given to these.
6. The legal requirements to involve role-players in decision-making – The legal requirements when and how to involve affected persons on the one hand and interested persons on the other when making a decision will be discussed. A decision includes any action taken regarding the issuing of a regulation, rule, strategy, licence, directive or notice.
7. The role and functions of the different water management institutions – The role, powers, duties and functions and organs of state and differences between catchment
8. management agencies, water user associations, advisory committees and international water management institutions as well as the Water Tribunal will be discussed.
9. Provision of potable water and sanitation services – The rights to and conditions for provision of water services, the role of water services authorities and the different water services providers, such as water boards, will be discussed.