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Next Water Governance

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Contents

Introduction

The NEWAVE collective research agenda is being developed through a coordinated and iterative process led by three teams of Early Stage Researchers (ESRs) and Senior Researchers, each one working on the topic a of a different "P", related to Problématiques (WP3), Paradigms (WP4) and Patterns (WP5) of water governance, jointly referred to as "the 3Ps". The elaboration of this deliverable, D5.5, is grounded in the Patterns work and then, as a "synthesis" effort, was developed by a cross-cutting task force, in dialogue with the extended group.

Addressing diverse water challenges has led to diverse governance arrangements, involving different mixtures of actors, interests, decision-making venues, and socio-political dynamics. Context matters, but every case is not necessarily unique, revealing recurring patterns of water governance across history, politics and time. The Patterns working group under WP5 aims to identify and classify the different ways of governing complex water problems. However, it also focuses on the underlying ways in which we come to identify and examine these patterns. In short, the patterns of water governance cannot be separated from our epistemological perspectives and ways of knowing the world. These perspectives demand reflection by researchers and practitioners about the world we see, and how we define and understand water governance in science and policy.

ESR representatives of the Patterns working group have identified a number of themes that stem from their direct experience and lessons learnt during their first year and a half of research under the NEWAVE program (Section 2. Contributions from Patterns working group to the policy-science synthesis report). To capitalize on this experience, the 3Ps organized a cross-cutting task force consisting of ESRs representatives from each P group, to develop a policy-science synthesis report (Section 3. Policy brief). The cross-fertilization between the 3Ps led to the natural conclusion that many aspects associated with the 3Ps cannot be separated. Therefore, a policy-science synthesis report with a common perspective was developed. As the ESRs represent the vital force of the NEWAVE common research, their perspective comes across as a good synthesis of the 3Ps working groups, developing a joint position around the necessity and urgency to foster reflexivity in water governance.

The cross-cutting ESR perspective available in Section 3, which constitutes the common core of the three separate deliverables (D3.5; D4.5; D5.5), has the ambition to address (and be heard by) influential policy makers in the field of water governance. While this deliverable addresses several epistemological, methodological and theoretical issues, it is not merely an "abstract" perspective. This document is in fact being produced at a very timely moment, right before the 2023 UN Water Conference, for the Midterm Comprehensive Review of Implementation of the UN Decade for Action on Water and Sanitation (2018-2028), which will take place from 22-24 March 2023, in New York, US, co-hosted by the governments of Tajikistan and the Netherlands. Considering the importance of this event, this deliverable, through the annexed policy-science synthesis report, directly questions some of the procedural aspects related to the representation, agenda setting, participation and decision-making processes that have so far characterized the organization of the Conference, which represents a key historical moment in the water governance arena.

Contributions from Patterns working group to the policy-science synthesis report

The work carried out by the Patterns working group has contributed to numerous areas of discussions, which were eventually elaborated by the cross-cutting Policy Brief Task Force, leading to the development of the common policy-science synthesis report (Section 3. Policy brief).

This section outlines the specific areas of contribution from the Patterns working group. These contributions reflect the working group's aim to understand and identify different ways of governing water and the ways of knowing which reveal these patterns and obscure others.

The patterns group contributed the fundamental arguments for reflexivity, starting with the question about who governs.

> *…Who was involved in agenda-setting and key decision-making, how should these goals be implemented and assessed, and who wins and who loses?*

> *…we advocate for a new reflexive way forward for who is doing water governance and how it is being done, by looking inwards and outwards to foster self-reflection not only in the water governance research space, but also among water governance practitioners.*

The patterns group focuses not only on who governs, but the different modes of decision making and processes of political contestation and social mobilization that shape patterns of water governance and outcomes for different actors. The irreducibly political nature of water governance is at the heart of the work developed by the patterns working group, and it intersects directly with the focus on defining and contesting water problems, and debating the paradigms guiding responses.

The work perspective of the patterns group is by its nature integrative and hard to separate from the politicized process of identifying and framing problems. As such, the patterns working group highlights the importance of fit and context when reflecting on water governance.

> *Water governance discourses, practices, and panaceas continue to be promoted by actors from the Global North (IWRM, Water-Energy-Food-Nexus, etc.), not necessarily fitting the specific political, social, cultural or institutional contexts in which they are meant to perform or solve problems.*

Moving beyond panaceas has required not only reflection but dialogue across disciplinary siloes, the divide between research and practice, and different ways of knowing. The tensions and connections between different Western and Indigenous ways of knowing are a key focus of the patterns working group, highlighted in brief through attention to the neglected or under-recognized worldviews and perspectives on water governance held by different Indigenous peoples:

> *First Nations maintain unique perspectives on (and relationships with) water and feel these perspectives should form an integral part of water governance (McGregor 2012).*

The diversity of perspectives therefore demand reflection on precisely what is meant by water governance and who gets to define it. The brief therefore highlights the persistent conceptual

confusion about defining water governance and the lack of diversity associated with research – and hence epistemological foundations – about water governance.

These conceptual concerns about defining water governance are not limited only to the "diagnostic" process of understanding the types of water problems and ways of governing water that have developed. The work of the patterns working group also considers the process of making policy recommendations or "prescriptions" which can often ignore context, history and politics. As such, these perspectives lead to reflection on new pathways and patterns of water governance to overcome the tendency to "techno-fixes" in water governance:

> *While we acknowledge the challenges of achieving true diversity in these global policy processes we emphasise the need to change dominant ways of governing and knowing water to overcome recurrent patterns of providing quick, technology-focused, scalable fixes to a complex, wicked problem arena.*

These reflections therefore point to a key recommendation for diverse water governance actors to move beyond the quest for a one-size-fits-all solution:

> *Acknowledge institutional complexity and diversity, and leverage multiple perspectives to get a better understanding of the multiple causes of problems while knowing that there is no single best approach.*

One of the overarching aims of the policy-science synthesis report, which represents ESRs perspectives, is that of increasing reflexivity in water governance. The ESRs advanced actionable recommendations on how to do so (page 15, Actionable recommendations). Starting from a first close reflection on the diversity of backgrounds within the member of the NEWAVE Network, and scaling it up to the large water governance arena, the ESRs in the task force stress that there should be spaces created for social and natural scientists to work together in water governance issues from early stages so they can learn how to overcome misunderstandings and facilitate dialogue between different "worlds" and worldviews.

Policy brief

"Fostering Reflexivity in Water Governance - Perspectives from Early Stage Researchers"

This brief has been co-elaborated by Alejandra Burchard (ESR 9), Preeta Dhar (ESR 14), Dona Geagea (ESR 10), Stew Motta (ESR 1), Paulina Raniecka (NEWAVE-Team), Nina Valin (ESR 6), Johannes Wagner (ESR 15), Paula Zuluaga Guerra (ESR 7).

Introduction

Water is central to ecosystems, human wellbeing and socio-economic progress. Water is one of the main socio-environmental pillars of sustainable development. On World Water Day 2018 (March 22) the United Nations proclaimed the beginning of the International Decade for Action on 'Water for sustainable development'. The objectives of the Decade were to promote 'a greater focus on the sustainable development and integrated management of water resources for the achievement of social economic and environmental objectives' (NEWAVE Proposal: pp. 4-6). A diverse group of governance actors have major responsibility, both in implementing this vision and in playing a leading role in the international sustainability domain. Forty Six years after the first UN Water Conference in Mar Del Plata in Argentina, water cooperation and governance will be central to the dialogues. In this context, there is an important opportunity for reflection and reflectiveness.

At the start of the decade there was no shortage of lofty goals and priorities, but one might ask whether the 'right' goals were established, and wonder how was decided who were the people to be involved in establishing them? If yes, have these goals stayed relevant as time progressed and if not, do we have procedures in place to keep them up-to-date? And what about some underlying questions about the governance of the Water Decade: who was involved in agenda-setting and key decision-making, how should these goals be implemented and assessed, and who wins and who loses? These are only some of the fundamental governance questions at the heart of the complex water governance problems that are addressed by the UN.

This policy brief draws on the experience of a transdisciplinary research network (the NEWAVE network) that is composed of researchers and practitioners who are all deeply engaged with water governance issues, and aim at rethinking the status quo in water governance. By flagging challenges and highlighting biases, this policy brief proposes new ways forward for both studying and doing water governance.

The NEWAVE network employs 15 Early Stage Researchers (ESRs) who operate at the boundary of science and policy. Even though mostly based in European countries, ESRs work alongside global partners and draw inspiration from southern-led research networks and partnerships that seek to decolonize scholarship on water governance. NEWAVE aims to critically and constructively reflect on central debates, including how ideas on water governance interact with local contexts worldwide. This policy brief was written by a task force of ESRs with the support of others in the network.

Our main message is that the global debate about water governance needs higher levels of reflexivity[12] to address ongoing challenges in the sector. In short, we advocate for a new reflexive way forward for *who* is doing water governance and *how* it is being done, by looking inwards and outwards to foster self-reflection not only in the water governance research space, but also among water governance practitioners.

The intended audience for this policy brief is broad and goes beyond the NEWAVE network. As a network at the intersection of research and practice, we suggest our message is of relevance to the wider community engaged in water governance debates globally.

Fostering reflexivity in water governance is fundamental to achieve transformative impact for equitable and sustainable water governance.

Water governance is a contested field; there is little agreement on what it means and how it is done. Drawing from other scholars' definitions we direct our thoughts on questions of reflexivity to problematize water governance.

We see water governance as a political choice about where water should flow, and who gets to decide about it (Zwarteveen et al., 2017[3]). It is also a new form of governing water with participation of new combinations of state and non-state actors (Mayntz, 1998[4]). It is therefore important to acknowledge that it involves sometimes clear, sometimes unclear power dynamics (Miciarelli, 2022). Given that this is a power laden political process critical considerations are who is represented, who makes decisions and when, on the basis of what knowledge and assumptions, and how these decisions are carried out. Bringing it closer home: **if you are reading this then you are also likely an actor engaged in this political process,** and you will probably be aware that your contributions and actions have real distributional outcomes of where water flows, who gets labelled as expert, and what voices are heard (Zwarteveen et al., 2017, Sultana 2018[5]).

Representation, participation, and voices all matter in this reflection. **Therefore, reflexivity is about not taking for granted one's own assumptions while producing or applying knowledge (see Finlay, 1998).** The active review of roles, inner practices, powers, and positionality in this inherently political process is necessary for moving towards equitable and sustainable water governance decisions and practices.

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[1] Patterson, J.J.; Lukasiewicz, A.; Wallis, P.J.; Rubenstein, N.; Coffey, B.; Gachenga, E. and Lynch, A.J.J. 2013. Tapping fresh currents: Fostering early-career researchers in transdisciplinary water governance research. *Water Alternatives 6*(2), pp. 293-312.

[2] Finlay L. (1998). Reflexivity: An Essential Component for All Research? *British Journal of Occupational Therapy, 61*(10), pp. 453-456. doi:10.1177/030802269806101005

[3] Zwarteveen, M., Kemerink-Seyoum, J.S., Kooy, M., Evers, J., Guerrero, T.A., Batubara, B., Biza, A., Boakye Ansah, A., Faber, S., Cabrera Flamini, A., Cuadrado-Quesada, G., Fantini, E., Gupta, J., Hasan, S., ter Horst, R., Jamali, H., Jaspers, F., Obani, P., Schwartz, K., Shubber, Z., Smit, H., Torio, P., Tutusaus, M. and Wesselink, A. (2017). Engaging with the politics of water governance. *WIREs Water, 4*, p. 1245. https://doi.org/10.1002/wat2.1245

[4] Mayntz, R. (1998). *New Challenges to Governance Theory. Jean Monnet Chair Papers.* Florence: The Robert Schuman Centre at the European University Institute.

[5] Farhana Sultana (2018). Water justice: why it matters and how to achieve it. *Water International, 43*(4), pp. 483-493. DOI: 10.1080/02508060.2018.1458272

Box 1: Inspiring quotes:

"Some years ago, I started a research project on water governance, today I have relationally learned from water, how to flow, subtle and gentle enough as -within time-to shape hearts and minds, strong enough as to break from ontological assumptions. Water always finds its way. That is the governance of water." (Querejazu, 2022, p. 186)

"Water crises are no longer issues just in the so-called Third World or Global South, as they are becoming widespread in the Global North, too. It is thus urgent and imperative that we pay more attention to the different ways that water affects people in different locations and notice the numerous connections and commonalities." (Sultana, 2018, p. 485)

"Agenda setting, framing of theoretical perspectives, and analyses of case studies and interventions need to better reflect the actual plurality of contexts from the north and south" (Nagendra et al., 2018[6], p. 347)

"(...) Aboriginal peoples regard Western water management approaches as limited, and science and technology, alone, as being unable to address the challenges faced by global, regional, and local communities in relation to water. From an Aboriginal point of view, alternative perspectives are required in an effort to address such challenges (Blackstock, 2001)." (McGregor, 2012[7], p.5)

"In the Anishinabe tradition, one of the main features of knowledge, based on thousands of years of living sustainably with Creation, is its holism: the recognition that all aspects of Creation are inter-related. (...) First Nations maintain unique perspectives on (and relationships with) water and feel these perspectives should form an integral part of water governance (Mandamin, 2012; McGregor, 2009)." (McGregor, 2012, p.10)

"Water governance at heart is about political choices as to where water should flow; about the norms, rules and laws on which such choices should be based; about who is best able or qualified to decide about this; and about the kind of societal future such choices support." (Zwarteveen et al., 2017, p. 1)

"Different water governance actors/stakeholders prioritize different aspects: some prioritize the commodity aspect that can be managed by the market, some prioritize the nationalistic framing, others recognize water's transboundary character as critical, and still others argue that its global nature calls for a global understanding and governance system. This has led to dialogue and conflict between these different framings." (Gupta & Pahl-Wostl, 2013, p. 53)

"(...) water has an intrinsic value. The diversity of views on water may to some extent explain why water governance architecture today is diffuse, as explained subsequently." (Gupta & Pahl-Wostl, 2013, p. 56)

"'All water management is multiobjective and is therefore, by definition, based on conflicting interests." (Priscoli and Wolf, 2009, p.10)

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[6] Nagendra, H., Bai, X., Brondizio, E.S. et al. (2018). The urban south and the predicament of global sustainability. *Nature Sustainability 1*, pp. 341–349. https://doi.org/10.1038/s41893-018-0101-5
[7] McGregor, D. (2012). International Indigenous Policy Journal, suppl. Water and Indigenous Peoples; London Vol. 3, Iss. 3. DOI:10.18584/iipj.2012.3.3.11

Synthetically:

- This brief **advocates** for the necessity of dialogue between (critical) trans-disciplinary research and policy worlds to advance water governance in line with its aspirations.
- This brief **highlights** the constraints and contradictions in policy making and policy translation that are at the heart of implementation gaps and unintended adverse outcomes which reinforce and perpetuate unequal and unsustainable use of, and access to water.
- This brief **recommends** actions towards collective and situated pathways for bringing different ways of knowing and ways of 'governing' water into a transparent, critical and constructive conversation. These actions are necessary to inform new, adequate, contextualised and more reflexive water governance approaches for tackling current and future water challenges.

Problem and background

Limited reflexivity and meaningful inclusion of diverse perspectives in the development, implementation and evaluation of current approaches to water governance undermine transformative efforts by overlooking complexity, prioritising managerial approaches, and excluding the outcomes of much critical water governance research. Examples for lack of reflexivity are outlined below.

Lack of reflecting on the concept of governance itself:

What is water governance, and who gets to decide? The concept of (water) governance should not be taken for granted as a neutral term, as it implicitly - and at times explicitly - reproduces existing power dynamics and relationships. Governance has been defined as "a new mode of governing that is distinct from the hierarchical control model, a more cooperative mode where state and non-state actors participate in mixed public/private networks" (Mayntz, 1998, p.7). One needs to reflect on which definition of governance one applies - there is a 'society centred' view, but also a more 'state centred' view of governance. The society centred view of governance holds that the state is less relevant for the resolution of today's problems than it used to be, and the initiative should rather be with the market or civil society, or some form of 'institutional tripod' that combines state, society and markets (Meinzen Dick, 2007[8])[9]. This view is rather dominant, and Micciarelli (2022) has pointed out that water governance discourses can serve to maintain a particular economic order by sanctioning participatory and corporate approaches to water governance as "good" or desirable. In this sense the term governance has become "a paradigm for the new balance of relations between public and private, where neo-liberal 'common sense' is hegemonic today but not irreversible" (Micciarelli 2022: 113[10])

The 2013 Santa Cruz Declaration[11] on the global water crisis shows that critical perspectives on water governance and justice exist. However nearly 10 years later, the central messages of the Declaration

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[8] Meinzen-Dick, R., (2007). Beyond panaceas in water institutions. *Proceedings of the National Academy of Sciences 104*, pp. 15200–15205. https://doi.org/10.1073/pnas.0702296104

[9] Other readings of the term governance are possible, including a state centered view (Bell and Hindmoor 2009).

[10] Micciarelli, G. (2022). Hacking the legal: The commons between the governance paradigm and inspirations drawn from the "living history" of collective land use. In F. Savini, A. Ferreira, K.C. von Schönfeld (Eds.) *Post-Growth Planning: Cities Beyond the Market Economy.* Routledge: London.

[11] N.a. (2014). Santa Cruz Declaration on the Global Water Crisis. *Water International, 39*(2), pp. 246-261. DOI: 10.1080/02508060.2014.886936.

- focused on injustice and inequality - are still barely penetrating the dominant discourses about water governance in national and global dialogues. A neutral understanding of water governance reinforces the structural barriers that exclude key voices and perspectives across gender, geography and class. The *lack of representation and diversity* silences many perspectives on water governance and reproduces and reinforces dominant ways of knowing driven by particular paradigms and ways of seeing. When critical voices are silenced or marginalised, a true potential for transformation and change is lost. Diversity, beyond representation, can be a source of inspiration and an opportunity for the emergence of new perspectives and imaginaries that can (and must) lead to collectively transformative pathways.

Lack of attention to power dynamics when providing water governance advice, strategies or consultation:

The run-up to the UN Water Conference 2023 illustrates inherent challenges in fostering inclusiveness and diversity, pinpointing the necessity of changing current practices and approaches. The conference is set to conduct a comprehensive mid-term review of the International Decade for Action, "Water for Sustainable Development" (2018–2028), and aims at providing a platform for *interactive dialogues* that "shall be collaborative and multi-stakeholder in nature, with due regard for gender and geographical balance [and] inclusive, both in terms of the process (ensure vertical and horizontal inclusiveness) and in terms of the results (leaving no-one behind)", involving "relevant stakeholders". For this, a Global Online Stakeholder Consultation was conducted in Feb/March 2022. Its main outcomes lead one to question whether indeed the stated goals of inclusiveness and diversity (page 6ff.) are achieved, considering the clear over-representation of European or Western perspectives: contributions from Europe and North America alone account for more than 55% (Europe – 42%, North America – 14%, Asia – 14%, Africa – 10%, Latin America and the Caribbean – 9%, Oceania – 2% and Other – 9%), while *other* voices beyond the 'usual suspects' are heavily under-represented : Children & Youth (2,1%); Women Organizations (0,7%); Indigenous Peoples (0,7%).

Furthermore, the results (page 10ff) of the consultation highlight various policy goals, such as: "there should be a focus on finding solutions and on how to best reach the most marginalised communities." Or "stakeholders widely agreed that indigenous knowledge must be integrated into decision and policymaking on water." However, achieving these goals necessarily requires **including the respective stakeholders, which continue to be underrepresented. Instead of making them a recipient of *solutions*, these actors should be in the driving seat of respective processes**. To assume that when an online, global "consultation" space is created, anyone can participate dismisses the reality(ies) that those whose voices are not represented, and who are usually marginalised, lack access at times to ways of being present in these spaces (i.e online connections, time, resources, etc.), or a trusted relationship with the organisers or platform. Alternatively, it is possible that these actors are reclaiming autonomy and resisting these spaces by governing in other (more decolonised) spaces.

As a doctoral research and training network situated in and funded in global north universities, **we acknowledge that our own position also reflects these trends, causing reflection about our privileged access to spaces and platforms for influencing water governance paradigms and practices.** We therefore see this briefing as contributing to calls for action and ongoing struggles initiated and advanced by southern led networks and Indigenous peoples.

Limited reflection on dominant approaches in water governance:

Given these shortcomings, it is timely to start a reflexive process questioning existing paradigms and approaches, **to avoid finding solutions for** marginalised and underrepresented groups **but to rather co-create** appropriate means of fostering agency and empowerment and challenging dominant views (Chambers et al., 2021[12]).   When done with care and intention, co-produced research on water governance can serve to empower voices, broker and reframe power, and navigate agency (ibid). Water governance discourses, practices, and panaceas continue to be promoted by actors from the Global North (IWRM, Water-Energy-Food-Nexus, etc.), not necessarily fitting the specific political, social, cultural or institutional contexts in which they are meant to *perform* or solve problems (Meinzen-Dick, 2007). While we acknowledge the challenges of achieving true diversity in these global policy processes we emphasise the need to **change dominant ways of governing and knowing water** to overcome recurrent patterns of providing quick, technology-focused, scalable fixes to a complex, wicked problem arena (Fallon et al. 2021[13]; Allouche et al. 2019[14]).

Limited inter- & trans-disciplinarity in research:

This lack of diversity in perspectives is closely linked to dominant ways of doing water (governance) **research**, where critical social science perspectives (and methods) are generally underrepresented or overlooked (Whaley, 2022[15]). This is convincingly illustrated by the recent *Too much and not enough* Nature Sustainability (2021[16]) editorial, where the editors wonder why research in the water field became "stagnant" and seems to "ignore the messy institutions, norms and processes that underlie our relationship, as individuals and as a society, with water in the first place". In response, critical water researchers argued[17] that the water research field did not become stagnant; there simply are not enough mainstream outlets publishing various types of critical water research.

Limited accessibility to water data:

To advance meaningful water governance science, another barrier needs to be overcome: lack of information. Scientists conducting research on water governance are facing barriers when it comes to data on water not being collected, available, or, even worse, not being shared (i.e. by water utilities, irrigator associations, hydropower companies, or public administrations). We recognize that different water governance spaces are involved in different stages of this continuum: (1) gathering the data; (2) processing the data; (3) making data available; and (4) format of data availability (i.e. open source and

[12] Chambers, J.M., Wyborn, C., Ryan, M.E. et al. (2021). Six modes of co-production for sustainability. *Nature Sustainability 4*, pp. 983–996. https://doi.org/10.1038/s41893-021-00755-x

[13] Fallon, A., Lankford, B., Weston, D. (2021). Navigating wicked water governance in the "solutionscape" of science, policy, practice, and participation. *Ecology and Society, 26*. https://doi.org/10.5751/ES-12504-260237

[14] Allouche, J., Middleton, C. and Gyawali, D. (2019). *The water–food–energy nexus: power, politics, and justice.* Routledge: London.

[15] Whaley, L. (2022). Water Governance Research in a Messy World: A Review. *Water Alternatives 15*(2): pp. 218-250.

[16] Nature Editorial Board (2021). Too much and not enough. *Nature Sustainability, 4*, pp. 659–659.

[17] Venot, JP., Vos, J., Molle, F. *et al.* (2022). A bridge over troubled waters. *Nature Sustainability, 5*, p. 92. https://doi.org/10.1038/s41893-021-00835-y

accessible). To conduct actionable and transformative water governance research, disclosure and transparency on data collection methods and the data itself in accessible ways are crucial. This claim is not only relevant for science but of utmost importance for water policy, as the OECD recently argued, to push regulators "to collect and make data available, with a view to protect users' or customers' interest". On a similar note, and in the spirit of reflexivity, it is important to practise the same standards within academic research, in terms of in turn disclosing data and making it openly accessible.

The various examples highlighted in this section illustrate the limited reflexivity and diversity in water governance and the dominance of a managerial socio-technical approach in project implementation. Below we support these claims from insights that emerged from our own situated knowledge and experiences as Early Stage Researchers working in academia and with practitioners at the science-policy interface, pointing to factors triggering these problems.

Evidence and insights on the functioning of the science policy interface

Actors involved at the science-policy interface face some constraints in including reflexivity and critical approaches when engaging with water governance. From our experience in researching issues of water governance, we have come across certain challenges presented by boundary workers such as consultants, advisors, or international organisations. Detailed information on how we collected such evidence can be found in the Annex 1 of the Policy brief, in a table format. The essence of these reflections on the limitations of reflexivity in water governance is explained in the following of this section.

First, there are **structural limitations of the conditions of research**. Academic research is shaped by constraints of time, resources and expectations of institutions. There is limited scope for in-depth engagement or action research building on mutually empowering community based partnerships. 'Cases' are often viewed as remote laboratories in which conditions are studied from an insulated environment. However, we argue precisely for the need to engage with the complex everyday realities of water issues, which this form of research does not fully support. Progress is to be noted with the recent emphasis on ''living labs'', these real-life experimentation environments where co-creation with the community is made a priority. Currently supported by the Horizon 2020 programme, the European Network of Living Labs (ENoLL) has been supporting this multi-stakeholder approach by sustaining relationships between citizens, governments, companies and research organisations. The same reflection around the benefits of close partnerships applies for practitioners, for which examples of collaborations across networks, between local structures, have shown to improve policy innovation and resilience (Cisneros, 2019[18]), especially when they share the objective to reduce institutional and resource constraints (Nohrstedt, 2011[19]).

Second, there are **inherent biases towards what is considered 'useful', neutral and legitimate**. Research - typically from specific networks or disciplines - that either legitimise dominant paradigms,

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[18] Cisneros, P. (2019). What makes collaborative water governance partnerships resilient to policy change? A comparative study of two cases in Ecuador. *Ecology and Society, 24*(1), p. 29. https://doi.org/10.5751/ES-10667-240129

[19] Nohrstedt, D. 2011. Shifting resources and venues producing policy change in contested subsystems: a case study of Swedish signals intelligence policy. *Policy Studies Journal, 39*(3), pp. 461-484. http://dx.doi.org/10.1111/j.1541-0072.2011.00417.x

or provide convenient and scalable solutions is valued, whereas critical perspectives or accounting for contextual factors or power imbalances are highly resisted. In the course of doing research, engagement with respondents is also contingent upon the expectation of certain outcomes. In addition, researchers have to budget the time to build authentic relationships and partnerships, guided by ethical safeguards and norms of reciprocity. However, such safeguards can also create biases toward objective and positivist modes of research that are eligible for administrative processes used to grant permits, request information, and access participants for interviews. This is also layered with other forms of gatekeeping, which shape the information and access of researchers. Research practices then end up perpetuating existing paradigms, ways of knowing and ways of doing water governance. Some critical researchers have reflected on the 'messy, behind-closed-doors conversations' and ethical dilemmas in conducting fieldwork.[20] These concerns need to be emphasised and acknowledged more directly.

Third, there is **a need to critically engage with information practices**. Technological advances have made possible better collection, use and dissemination of information which can support transformative water governance. Local level participatory community practices can open up democratic spaces (Llano-Arias, 2015[21]) or challenge dominant discourses (Hernandez-Mora et. al. 2015[22]). However, that is conditional on a political and structural shift towards transparent, multi-level and participated governance approaches (Pedregal et al, 2015[23]). Information practices - including aspects of how information is collected, accessed and used - is shaped by the institutional contexts, social dynamics and power. In the experience of doing research on water governance, the ESRs have experienced that 'information' collected about water, or water services, is often on limited parameters and intended to meet specific purposes. The data collection practices are often questionable - being poorly monitored or manipulated. In addition, the data or information collected is not made available to stakeholders, or the broader public, or research communities. Further, information related to key policies, processes and financial arrangements are often kept deliberately hidden. This poses a further barrier in producing 'legitimate' critical research.

Fourth, there is **a need to explicitly recognize the challenges of working in difficult or sensitive contexts**. Water governance is inherently political - often involving conflicts, systemic challenges and challenging dominant and powerful interests. In these contexts, critical approaches or contexts can be difficult to include. Researchers have to contend with facing forms of active or passive hostility, similar to ones faced by any partners or participants they work with. There is an acutely perceived need for more support to address concerns of vulnerability, repression and unintended consequences.

We acknowledge that there are initiatives and counter-examples which have successfully addressed the challenges posed in this section - some of which we have tried to highlight. This is not a comprehensive review. However, from our own experience, we identify that the science-policy

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[20] See, for instance Special Issue - Participatory Ethics (Guest Edited by Caitlin Cahill, Farhana Sultana, and Rachel Pain, 2007). *ACME: An International E-Journal for Critical Geographies 6*(3).

[21] Llano-Arias, V. Community Knowledge Sharing and Co-Production of Water Services: Two Cases of Community Aqueduct Associations in Colombia. *Water Alternatives, 8*(2), pp. 99-124.

[22] Hernández-Mora, N. et al. (2015). Networked Water Citizen Organisations in Spain: Potential for Transformation of Existing Power Structures in Water Management. *Water Alternatives, 8*(2), pp. 77-98.

[23] Pedregal, B. et al. (2015). Information and Knowledge for Water Governance in the Networked Society. *Water Alternatives 8*(2), pp. 1-19.

interface needs to acknowledge more explicitly the conditions of power in water governance and in knowledge-production on water governance.

Actionable recommendations

This section is the result of a series of conversations and spaces of collective reflexivity among the 15 Early Stage Researchers that belong to NEWAVE. Such spaces have allowed us to share our experiences as researchers in very diverse contexts and geographies, as well as to thematise the limitations and obstacles that we have faced throughout the past two years.

In this section, we summarise clear actionable recommendations for increasing reflexivity, overcoming barriers in research and participation, and by proposing a way-forward for water governance.

How to increase reflexivity in water governance?

- Question the boundaries of water governance, and who gets to decide about the concept, its meaning, and implications.

- Examine our methodologies both in the natural and social sciences and aim at decolonising our thinking and research methodologies as a regular ongoing practice.

- Design **water governance programs that rethink projects/initiatives, from a perspective that allows for meaningful interactions between scientists (social and natural) which can be fostered by including social science expertise from the start**, already at the stage of problem definitions. This would avoid silo-talks and echo-chamber discussions.

- Create spaces for social and natural scientists to work together in water governance issues from early stages so they can learn how to overcome misunderstandings and facilitate dialogue between different "worlds" and worldviews. The closer these dialogues are to the people and practitioners involved in water governance, the greater chance for meaningful collective endeavours.

- Build platforms for knowledge exchange and meaningful collective endeavours: create spaces, capacities and practices for the diverse social actors (including the researchers) to integrate their ways of knowing, feeling, seeing and doing. Collectively reflect, construct dialogue and critically engage from this grounded place with water challenges.

- Ensure future doctoral graduates become game changers who, "while excelling in their own specialisation, can work across disciplines, drive innovation, engage with stakeholders and lead interdisciplinary teams" within, across and outside academia (Taka et al., 2021, p. 1). Include in curricula and programs, training on how to truly listen to and meaningfully talk to people coming from diverse backgrounds.

- Visibilize the work of critical water researchers in mainstream outlets, and create new outlets that will counter the gatekeeping and editorial filters on diverse voices.

- Ask why certain barriers to making data available exist, and challenge these limitations, where possible, with a view to protect users' or customers' interest.

How to overcome barriers for meaningful participation and the collective construction of knowledge in water governance?

- Ensure the creation of collective and transformative pathways and avoid treating participation as a checklist exercise. There is not a generalisable or unique way to foster meaningful inclusion and participation, instead we need to allow space and allocate resources for engendering the reflection around how, who, when and the limitations that any participatory setting would imply. That is, we need to create the space for situated, power aware and reflexive processes of participation that emphasise the strengthening of collective action initiatives and the capacities of local administration and civil societies. This will ensure systemic support for participation instead of making participation an additional burden or reproducing the inequalities and injustices it is supposed to tackle.

- Practise the collective construction of knowledge by giving space to the individual (each one of us has a different way of knowing and doing). The water challenges that we are facing today call for situated and locally driven initiatives, local voices have to be heard and actively included from the conception throughout the execution of the projects. Here some concrete actions that can be taken:

  o Go as local as possible by engaging people from the contexts from the design of the projects phase.

  o Prioritise the collective reflection and construction of knowledge in research and implementation instead of offering, imposing or receiving ready-made solutions.

  o Involve community voices in post-project social audits that are taken seriously.

  o Be mindful of who gets to participate (so that it is not limited to 'compliant voices' or being co-opted) and how.

How to move forward?

To finalise we would like to share with the wider network a series of prompts that have helped us to remain reflexive and critical throughout the research process. These are not a code of conduct or a recipe book, but rather the starting point for us to extend practices of collective reflection in the water governance arena. These are to:

- Remain humble and realistic when talking about "solutions" for water governance challenges and create awareness that potential responses are *situated* (Haraway, 1988)[24], unstable, and never final nor universal.

- Acknowledge institutional complexity and diversity, and leverage multiple perspectives to get a better understanding of the multiple causes of problems while *knowing* that there is no single best approach (see Fallon et al. 2021).

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[24] Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist studies, 14*(3), pp. 575-599.

- Move away from the optimization to a preferred single outcome (as is often the focus of governance studies), and move towards asking stakeholders to map out their "contestations and deliberations" (Fallon et al. 2021, p. 16).

- Be explicit about shortfalls in projects/interventions - and if/how those shortfalls are addressed; how it informs the policy/design of other projects by the agency/in the sector, state, etc.

Critical and reflexive research on hydrosocial realities are often faced with resistance, lack of access to information and abuse of power. The NEWAVE Network is well-positioned to promote spaces and capacities for meaningful and relevant research and practice in water governance - reflexivity starts with us as a network. As established and influential actors in the community of researchers and practitioners, the Network can create enabling conditions for meaningful research.

About NEWAVE

The NEWAVE Network provides a space for meaningful and relevant research in water governance. In addition to benefiting from the academic process and supervision, the Network is enriched by practice-based organisations - including international NGOs, private consultancies, river basin organisations, and influential research and policy networks. The NEWAVE Network can bridge the silos of academic research and the practice community, and highlight concerns that are traditionally and structurally overlooked.

Annex 1

From our various research experiences, we have come across certain factors which can lead to limited reflexivity in water governance research. Through a semi-structured questionnaire, we have gathered our individual research experiences. The table below synthesises obstacles specifically related to data availability, collecting information and feedback from participants and highlights challenges researchers have faced in including a critical and reflective approach. These of course do not exhaustively represent obstacles to reflexivity in water governance research. However, they give examples that we have drawn from to extract key **obstacles** that we as researchers have experienced during our interactions with actors (practitioners, experts, academics…) in the water field.

Obstacles related to data collection

Resistance to admitting biases / failures of current approaches	Some institutions are not welcoming a reflexive approach and bypass questions. State actors or lending institutions for instance are often reluctant to share information which could bring out implementation challenges. There is an implicit pressure to demonstrate 'successful' interventions, rather than admitting challenges. When entering a highly politicised debate, the researcher can experience resistance from participants who expect a ''neutral'' approach to the case. When studying water issues related to mining for instance, powerful extractive alliances are reluctant to accept interviews, or disseminate an institutional discourse only instead of a personal point of view[25]. This was observed also in the case of European institutions working with the Water Framework Directive[26]. Alternatively, ex-employees are sometimes worried to share sensitive information, which brings up ethical issues for the researcher (see below). Results can also be twisted when the researcher is in the obligation to change the formulation of questions[27].
Water governance reports and studies that are not public or accessible	Apart from academic work that is not made public through open access journals, there is an immense amount of knowledge that is kept within the walls of financial, governmental and private institutions. These are rarely made public or systematically shared with the interested stakeholders. Some researchers have experienced those sensitive issues (e.g. finances or large scale infrastructures) are sealed under state secrecy, even more so in countries where conflicts are taking place[28]. Others observe that some institutions produce data internally that is not made public, unless a specific report is published by their client (e.g. consultancy firms). Because the data stays within the walls of these institutions, it is necessary for the researcher to find other ways to surpass these gatekeepers[29], which can be

[25] ESR 8. Water and mining
[26] ESR 6. EU Water Law
[27] ESR 6. EU Water Law
[28] ESR 1. Conflict nexus
[29] ESR 9. Water consultancies

	highly contingent on whether the researcher can be recommended by a trusted source.[30]
Data collection ethics	Severe ethical considerations about the safety of participants and unforeseeable effects of research are at stake in violent regimes or political contexts (e.g. involving powerful economic or political actors, such as mining activities). In such situations, data collected through interviews is sometimes not even usable as evidence in academic papers, to avoid putting participants at risk. This results in a dilemma of collecting evidence that cannot expose power structures, and therefore does not allow for reflexive or critical approaches[31]. The situation does not need to be violent to be ethically problematic: in some cases, the evidence collected through interviews can undermine the participants themselves, creating an ethical dilemma for the researcher. In studying the Mar Menor site in Spain for instance, a researcher experienced such a dilemma when framing re-directing the project so her work with farmers does not translate into normative outputs that could be later used against them[32]. In both cases, we see that data collection does not appear as a priority, even when it could have implied a critical and reflexive contribution to the literature.
Data reliability	Even when all data is publicly available, the question of its reliability can be an obstacle for reflexivity, when the method for collecting the data is not publicly available for instance[33]. This can require a self-assessment approach and an extra effort of data collection to confirm the existing data. There can also be a bias when certain actors have interest in promoting certain conclusions (e.g. ''IWRM is associated with improvements in terms of water-related sustainability'')[34].
Lack of time and availability of specific actors	Key informants of various backgrounds (policy makers, consultants, civil servants, researchers, etc.) do not have time to read scientific reports and engage in long surveys and interviews. Therefore, researchers must design their research and use language that accommodates this context[35]. This issue of the lack of time is funnily enough also the curse of the researcher him/herself, who can experience a pressure of hyper production[36], sometimes at the expense of thorough and reflexive investigation.
Water related information is often	There is often no acknowledgement of complex realities (for example, water flow/ water use information by state authorities is contested by

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[30] ESR 14. Governance
[31] ESR 8. Water and mining
[32] ESR 7. Knowledge co-production
[33] ESR 11. Governance models
[34] ESR 11. Governance models
[35] ESR 9. Water consultancies
[36] ESR 10. Recommoning Water

narrowly defined by informants	actors who access water). Often, the information collected is purposive (to meet certain criteria- like project funding, claiming inter-state water, etc). For instance, information about governance structures, rights and responsibilities are vague and obfuscated by state/project implementation authorities (even when there are disclosure requirements)[37].

Obstacles related to the positionality of the researcher

Theoretical boundaries	Working within the boundaries of a theoretical framework means that a contribution should be about the theory. This limits more reflexive processes in research. Article structures and ways in which more are written also limit reflexivity[38].
Acknowledging that "solutions" need to be contextual while building in some aspect of scalability	Some researchers experience a gap between the discourse around a certain issue and the actual lived experiences at a local level, which requires a close involvement with the concerned actors[39]. The isolation of the researcher and impossibility to sometimes integrate a community of actors make it difficult to break this disconnection[40], which brings about questions of positionality especially in ''problem-driven'' research[41].
Distrust and conflicting positionalities between researcher and participants	It can be challenging to find common ground or shared understanding between practitioners' hopes or expectations and the insights research can bring to the table[42]. In some cases, participants are reluctant to collaborate with the researcher, because generally research has done little to support them, or/and has not changed anything about their lives although their situation has been in focus for years. This can lead to feelings of distrust and political abandonment. In other cases, the lack of common language and building a trust relationship with participants is challenging, partly due to conflicting positionalities[43]. Another situation can be related to conflicts of interest, when participants would like different conclusions to be drawn from the research and encourage certain conclusions[44]. Finally, certain actors (e.g. State actors/project implementation agencies) only accept to work with researchers who they think will be beneficial for them (to portray them in a positive light/provide inputs for making their work easier). Any research outside of this is viewed with suspicion and resistance[45]. Moreover, inconvenient 'information' can be discredited - as 'political' or 'motivated'.

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[37] ESR 14. Governance
[38] ESR 4. Rainwater harvesting
[39] ESR 1. Conflict nexus
[40] ESR 1, 10.
[41] ESR 15. Financing rural water services.
[42] ESR 8, 15.
[43] ESR 9. Water consultancies
[44] ESR 11. Governance models
[45] ESR 14. Governance

Lack of reflexivity on gender	The gendered aspect of transforming dominant water governance models when women are the ones carrying the load of work/ "free labour" in the citizen participatory model is often marginalised in higher level water "governance" research[46].

Obstacles related to Global North centred referencing

Conflict literature is focused on the Global South	Although this can be counterintuitive, the Global South is seen as the laboratory when looking at environmental conflicts, while Global North cases are hardly considered. It is important to make visible the injustices and oppressions that occur in the Global North, not only because of the oppressed but also because this can contribute to highlighting the dehumanisation that is taking place everywhere and that emanates from capitalism.
Global North cases are dominated by Global North authors	One example among many others is the literature in EU studies, which is dominated by authors from the Global North, which leads to a vicious circle of referencing exclusively within the Global North. This has a direct impact on reflexivity since there is no or little acknowledgment of other ways of knowing and researching within this field.

Obstacles related to dominant forms of knowing

Depoliticization of water governance and technical engineering knowledge domination	Funding towards natural science and engineering streams of water research evidently surpass the support that currently exists towards critical trans-disciplinary research. It can be a challenge to integrate and value social science perspectives in institutions which are mostly dominated by a technical managerial perspective[47]. Beyond research, this is also observed in the way that international cooperation projects are funded, designed and implemented: "where politics can be dealt with after infrastructure building".

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[46] ESR 10. Recommoning water
[47] ESR 9. Water consultancies

Challenging science as the main way of knowing	The scientific method has been challenged as a legacy of coloniality, imposing one way of gathering and processing knowledge, that requires fitting standardised boxes (McGregor, 2012; Querejazu, 2022). This marginalises other forms of knowing. For instance, much indigenous and local knowledges are processed through stories, narratives, rituals and engagement with the more-than-human world - these find limited acceptance in journals requiring "scientific" articles (and what this excludes). It remains a challenge how we can acknowledge other types of processes/outputs besides scientific papers as part of research, and as valid for pursuing an academic career.