European water law and hydropolitics: an inquiry into the resilience of transboundary water governance in the European Union

Summary of Ph.D. dissertation

by

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I. The broader context of the dissertation: the problem of transboundary river basins in international relations

While the amount of accessible freshwater in the world is limited and remains constant, it has to satisfy the ever growing demands of an ever growing number of users, be it human beings, the economy or the natural environment. Moreover, the various human-induced pressures of our era – population growth, urbanisation, climate change to name a few – are leading to a massive degradation of the quality of freshwater resources worldwide. As a result, by 2030, the world is projected to face a 40% water deficit, if current trends remain unchanged. Consequently, water security in the broadest sense of the term will be one of the critical questions of development, peace and stability in the 21st century. Not surprisingly the World Economic Forum has repeatedly identified water as one of the top global sources of risk. The US National Intelligence Council in a recent report also concluded that "water may become a more significant source of contention than energy or minerals out to 2030 at both the intrastate and interstate levels".

Changing hydrological conditions are further complicated by the geography of water: around 47% of the Earth's surface waters lie in basins shared by at least two countries. These basins are home to some 40% of the world's population and account for about 60% of the global river flow. Thus, the bulk of world's unfolding water crisis will have to be solved in an international context.

In view of the conflict potential of shared waters, the 1980s and early 1990s saw the emergence, in mainstream political discourse and scientific literature, of a widely held conviction that wars for water were both inevitable and imminent. The rise of the water wars thesis, however, inspired not only political speculation, but also gave impetus to a new wave of empirical research into the drivers of interstate conflicts over shared river basins. Such research has laid the foundations of a new discipline coined hydropolitics that is concerned with the study of the resilience of co-riparian relations in transboundary basins. The basic findings of the various schools of hydropolitics are probably best summarised by Aaron T. Wolf, a leading authority in the field, as follows:

- in recent history shared water resources have been a driving force of cooperation, rather than conflict. Thus water tends to connect nations more than it divides them;
- the stability of co-riparian relations, in other words: hydropolitical resilience, is not determined by one single hydrological or political factor, such as scarcity in the basin or the ambitions of a downstream hegemon. Rather, it is defined by the legal and institutional arrangements riparian states have put in place to manage the shared resource;
- if a given legal and institutional arrangement is sufficiently robust and flexible, it may absorb even very significant changes in the basin without negatively affecting the efficiency of cooperation among riparian states;
- the chance of serious conflict emerges, if the magnitude and/or the speed of change (be it physical or political or both) in the basin exceeds the absorption capacity of a given governance regime. The absorption capacity of a governance scheme is thus not a stationary condition, riparian states can always adapt it to changing hydrological or political circumstances.

II. Hydropolitics in the European Union: a cause for complacency or concern?

The fact that the stability of co-riparian relations is, to a large extent, a function of certain legal and institutional variables makes it possible to subject it to systematic measurement. Consequently, an impressive array of hydopolitical assessments has been conducted in the past decade at various depths and geographical scales. Most of these studies seem to suggest that Europe, and most prominently the European Union (EU) is a true paradise of water cooperation. The intricate web of multi- and bilateral water conventions and, most importantly, the crown jewel of the EU's indigenous water policy: the Water Framework Directive, create a comprehensive transboundary water governance regime that will save Europe from the evil of inter-state water conflicts.

Not surprisingly, these positive, but somewhat unsophisticated conclusions seem to have led to a loss of political and scientific interest in the study of the EU's own affairs. While EU institutions, governments, think tanks and NGOs travel the world to preach the European model of prudent transboundary water cooperation elsewhere, very little attention is being paid to the future political stability of shared river basins inside the European Union.

This complacency seems grossly unjustified on several grounds. Although the relevant hydropolitical assessments confirm the relative stability of the cooperation frameworks in the EU, many of them also pinpoint to emerging risks. These risks are of multiple origins. The most obvious is the fact that much of EU's relevant legal and institutional apparatus was laid down in the well-watered, densely populated and heavily industrialised north-western Europe in the 1980s and early 1990s. Naturally, these frameworks reflect the hydrological challenges prevailing at the time and place of their births. Also, existing governance regimes are based on a dominant technocratic water management paradigm that presumes the stationarity of the underlying hydrological conditions. Yet, the multiple megatrends of the Anthropocene (climate change, urbanisation, economic progress) brings about new challenges that are likely to alter the natural hydrological cycle beyond recognition. With stationarity being declared dead by science, the policy and governance frameworks must move on too.

All the more so, as the relevant forecasts by the EU's environmental monitoring centre, the European Environment Agency project that the most important changes in hydrology in Europe will be manifested through increased fluctuations in river flow, a rise in hydrological extremes and, in many parts of the continent, loss of precipitation and prolonged droughts. This is in sharp contrast with the dominance of water quality considerations and the (almost) complete ignorance of water quantity management under contemporary European water law. In other words, the focus of collective action problems in shared EU basins is gradually shifting from transboundary pollution towards cross-border water quantity management. If, however, interstate competition for the shared, but limited resource becomes the main challenge in the numerous European watersheds, the one-sided ecological programme of today's EU water policy is likely to prove inadequate to prevent differences, disputes or even serious conflicts in co-riparian relations.

III. The research questions

This study aims to investigate the nature and the magnitude of the growing misfit between the objectives and tools of contemporary European water law and policy and the emerging hydrological realities. Challenges to the adequacy of the actual transboundary water governance

regime may emerge not only as a result of the misfit between the regime in place and the hydrological conditions they are supposed to handle. They may also develop as a result of the inability of the governance system to adapt to new circumstances. These represent two interconnected, yet autonomous aspects that can be expressed through the following questions:

- is the existing governance regime fit to handle current and emerging hydrological and political challenges in a transboundary context?
- is the existing regime capable to dynamically adapt to new hydrological and the ensuing political challenges or its evolution is blocked by systemic legal, institutional or political obstacles?

The first question represents the static dimension of the issue. In this narrower sense the stability or resilience (and its antonym: vulnerability) of transboundary water governance is understood as the presence (or the lack) of risks of political dispute over shared water systems in the European Union. This condition can be best analysed through the various legal and institutional indicators developed by different schools of hydropolitics. The second question relates to the dynamic dimension of resilience that can be evaluated by various indicators developed to measure the adaptive capacity of socio-economic systems by resilience science.

IV. Scope and methodology

As already mentioned, the stability of co-riparian relations is very much determined by a number of legal and institutional factors. Therefore, this main focus of this study is the analysis of the *legal frameworks* that govern the interaction of basin states in shared river basins within the European Union. As, however, the behaviour of states is influenced by a range of factors other than legal norms, additional aspects of co-riparian interactions such as *administrative structures*, *political circumstances*, *cultural conditions*, etc. will also be taken into consideration to arrive at a more nuanced assessment. Following the established terminology of the relevant literature these legal and non-legal factors will be referred to collectively as "water governance". Given the inter-disciplinary character of the research questions, this study will also borrow the applicable terminology of other disciplines such as international relations, resilience or system science.

The geographical focus of this study is the territory of the European Union and the international river systems shared between EU member states and third countries. The analysis will therefore not cover European rivers basins that lay entirely outside the European Union (Volga, Dnepr, Dniester, etc.). Thus, the term "Europe" and "European Union" will not be used interchangeably: Europe will mean the European continent, while the European Union will denote the territory of the European Union or the EU as supranational legal and political entity. In turn, "European water law" will be used to encompass four regulatory layers of transboundary water governance: (i) the treaty framework of the United Nations Economic Commission for Europe (UNECE), (ii) the European Union's *sui generis* legislative framework as well as (iii) multilateral and (iv) bilateral water treaties to which at least one EU member state is a party. Although these regulatory regimes do not form a comprehensive corpus of law, they nonetheless have to be applied by national water managers even against occasional internal collisions.

The methodology employed by this study is twofold. The first research question will be answered through the application of a number of formal legal and, to a lesser extent, institutional indicators to the four layers of European water law. This implies a detailed analysis of UNECE and EU water law as well as multilateral basin and bilateral water treaties. Given

the straight-forward character and the wide use of these indicators, their application to the EU situation provides clear-cut and easily comparable results. The second research question will be answered through three indicators relating to the adaptive capacity of governance systems as developed by resilience science. Here, the more fluid nature of the topic does not permit to draw unambiguous conclusions. Yet, by way of identifying certain critical legal, institutional and political obstacles the resilience indicators may nonetheless provide useful information about the capacity of EU water governance to adapt to emerging hydrological and political challenges.

V. Structure of the dissertation

The study comprises four parts.

Part I provides a summary of the general questions of transboundary water governance, including the geography, the theories, the laws and institutions of transboundary water cooperation. Part I closes with a detailed analysis of the challenges posed by the Antrophocene to co-riparian relations and introduces the notions of water security and hydropolitical resilience.

Following an exposition of the geography and hydrology of shared river basins in the European Union, Part II contains an introduction to the specific European model of transboundary water governance. This includes the detailed description of all four layers of European water law as well as a critical analysis of the interaction among them.

Part III contains the bulk of the research underpinning this study. The first research question is analysed along the following indicators: management of water quantity, management of water quality, cooperation over planned measures, the management of hydrological variability in shared river basins as well as dispute settlement within the European Union. It is followed by a qualitative assessment of the adaptive capacity of the European system of transboundary water governance along three additional indicators: coordination among the different levels and actors of governance, transfer of information and feedback and the authority and flexibility in decision-making and problem-solving.

Part IV summarises the main findings of the study and formulates recommendations to EU and national decision-makers with a view to eliminating the hydropolitical vulnerabilities identified.

VI. Main conclusions

The main conclusions of the assessment of the resilience of the transboundary water governance regime in the European Union are as follows:

- The European Union and its member states maintain one of the most extensive and elaborate system of transboundary water governance in global comparison. The regional UNECE regime, the basin and bilateral treaties of member states as well as the EU's *sui generis* legal framework stand out as regards their comprehensive geographical coverage, strong ecological focus, cooperation over planned projects.
- Despite such positive overall picture, however, significant structural deficiencies have been identified that may give rise to critical vulnerabilities should the fundamental hydrological conditions of transboundary cooperation change as projected due to increased climate variability.

- As regards the key legal and institutional indicators of hydropolitical resilience the following gaps must be highlighted:
    - *the absence of water quantity management:* EU water law and the European treaty framework (apart from occasional bilateral water treaties) almost comprehensively ignore the quantitative aspects of transboundary water management. While the one-sided ecological focus of these governance regimes can be explained by the relative abundance of freshwater resources in Western Europe and the dominance of environmental quality considerations in the 1980 and 1990s, this lacuna means that the EU and its member states cannot rely on a solid legal framework to address the transboundary implications of the most important hydrological impact of climate change: increased variability of river flows;
    - *the absence of water allocation mechanisms:* a direct consequence of the absence of water quantity management is that – apart from a small number of bilateral treaties and the basic principles of equitable and reasonable utilisation or the no-harm rule – there are no rules and mechanisms in place in the EU to govern water allocation between riparian states. Given that water allocation disputes are the most common source of inter-state tensions in hydro-diplomacy, this omission may turn into a major vulnerability gap in several parts of Europe, if water stress or scarcity continues to increase as projected. The dominance of water quality and ecological requirements at UNECE, EU and basin level results in a gross regulatory asymmetry at member states level. Basin states they have to comply, individually and collectively, with uniform and precise water quality requirements whose implementation is closely linked to the availability of water. Yet, the same countries are almost completely deprived of legal rights and mechanisms to demand that the necessary amount of water is made available to them. As a result, riparian states with high exposure to exogenous water sources may infringe their EU and international water quality obligations for the lack of sufficient volumes despite their best intentions and efforts;
    - *limited management of hydrological variability in a transboundary context:* an additional consequence of the foregoing is the one-sided approach to the transboundary management of hydrological extremes. While the four layers of European water law regulate flood prevention and protection at an exemplary level of sophistication, less positive is the picture when it comes to long term adaptation to hydrological extremes, especially prolonged droughts. The systematic review of the main characteristics of each basin required by the Water Framework Directive ensures that riparian states address changing hydrological conditions on regular and substantive basis. Yet, neither EU and UNECE law, nor basin treaties call for real adaptation interventions. The various climate change adaptation strategies developed by the river basin organisations only provide general guidance as to future measures and do not address the potential of political risks prolonged droughts are likely to pose in transboundary relations. Finally, European water law addresses the short term consequences of prolonged low river flows only marginally. Undoubtedly, the basic principles of transboundary water cooperation (equitable and reasonable utilisation and the no-harm rule) together with the various information exchange and notification procedures provide a basic framework to address such critical situations. These, however, do not provide any operative guidance to riparian states as to the immediate adaptation measures to be taken, including adjustments in transboundary flow allocation. This shortcoming can largely be attributed to the

complacent approach of EU law and decision-makers vis-à-vis the question of transboundary water allocation. This regulatory lacuna and political timidity may in the future prove a critical hydropolitical risk, if droughts and scarcity continue to intensify in a transboundary context as projected;

- *inadequate mechanisms of dispute settlement:* the dispute settlement mechanisms available to EU member states are inadequate to channelize and resolve significant transboundary water disputes. The EU's own legal system places the European Commission at the centre of law enforcement, which, however, investigates parallel violations of member states and avoids any engagement in bilateral disputes. Consequently, there are no readily available, easy-to-access platforms in place to handle co-riparian differences. Moreover, EU law generally prohibits arbitration or recourse to the International Court of Justice in the context of most transboundary water issues. Instead, it allows member states to sue each other before the European Court of Justice. This option, however, does not offer a viable alternative due to a series of political and institutional constraints. European water law therefore displays an important hydropolitical gap as it fails to provide effective mechanisms for the resolution of a potentially very wide spectrum of transboundary legal disputes between EU member states.

- The analysis of the adaptive capacity of the EU's water governance systems has shown that the above vulnerabilities are likely to persist in the long term for the following reasons:
  - *weak coordination among the different levels and actors of transboundary water governance:* horizontal coordination and flow of information between the two major multilateral blocks of transboundary governance – the UNECE and the EU – is insufficient, preventing the mutually beneficial optimisation of the two regimes. In fact, the EU's relevant legal instruments, in particular the Water Framework Directive, dominate contemporary co-riparian relations in the Union to such extent that it has the tendency to side-line all other issues. This legal-political asymmetry is also reflected in the attitude of the relevant supervisory institutions, especially that of the European Commission, vis-à-vis other water governance regimes;
  - *fragmented flow of information and feedback:* the shortcomings of coordination imply that the horizontal flow of information between the UNECE and the EU remain remains fragmented, unbalanced and somewhat occasional. The European Union, although a party to the UNECE Water Convention, remains exempt from the reporting obligations to the Convention bodies. The same applies in the opposite direction: the UNECE has no access to any established formal channels of information exchange with the EU institutions;
  - *limited authority and flexibility in decision-making and problem-solving:* the rigid legal framework of the EU, coupled with a number of political and cultural obstacles, does not allow the flexible adaptation of the EU water policy to changes in the hydrology and politics of shared basins. This applies particularly to the quantitative aspects of transboundary water management that is not only absent from contemporary EU water policy, but powerful legal constrains suggest that it is likely to remain so in the foreseeable future. Even more limited is the EU's adaptive capacity to properly handle bilateral water disputes, an important precondition of hydropolitical stability. Here, it is the EU's constitutional system that bars member states to submit their case to established international forums. Given the sacrosanct status of the jurisdictional monopoly of the European Court of Justice in the Union legal order, the impossibility of recourse to international

tribunals to adjudicate bilateral water issues is likely to remain in place indefinitely.

VII. List of relevant publications

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Managing Upstream-Downstream Dichotomy in European Rivers: A Critical Analysis of the Law and Politics of Transboundary Water Cooperation in the European Union. In: Conference Proceedings, 7th EDSI Conference: The Water Footprint in Decision Sciences, 2009

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