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Introduction

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Fresh water is crucial for human survival. Also, it is necessary for the health of a properly functioning ecosystem on Earth, and therefore both directly and indirectly it gives life to humans. Access to water is essential for life and it has been recognized as a human right.[1] On 28 July 2010 the United Nations General Assembly recognized the right to safe drinking water and safe and clean sanitation as an essential human right for the full enjoyment of life.[2] The General Assembly noted with deep concern

[1] For a comprehensive discussion of the evolution of the human right to safe drinking water and sanitation in its historical context, see Murthy S.L., 'The Human Right(s) to Water and Sanitation: History, Meaning, and the Controversy Over Privatization' (2013) 31 *Berkeley Journal of International Law* 89. See also Ulrich M.R., 'The Impact of Law on the Right to Water and Adding Normative Change to the Global Agenda' (2015) 48 *George Washington International Law Review* 43; Meshel T., 'Human Rights in Investor-State Arbitration: The Human Right to Water and Beyond' (2015) *Journal of International Dispute Settlement* 8; De Vido S., 'The Right to Water: From an Inchoate Right to an Emerging International Norm' (2012) 45 *Belgian Review of International Law* 517; Hardberger A., 'Life, Liberty, and the Pursuit of Water: Evaluating Water as a Human Right and the Duties and Obligations It Creates' (2005) 4 *Northwestern University Journal of International Human Rights* 331; Gleick P., 'The Human Right to Water' (1999) 1 Water Pol'y 487; Churchill R., 'Environmental Rights in Existing Human Rights Treaties' in Boyle A.E. and M.R. Anderson (eds), *Human Rights Approaches to Environmental Protection* (1996) 89; McCaffrey S.C., 'A Human Right to Water: Domestic and International Implications' (1992) 5 *Georgetown International Environmental Law Review* 1.

[2] Resolution 64/292 from the United Nations General Assembly, approved in July 2010, affirms water and sanitation rights as 'essential for the full enjoyment of life and all human rights'. The resolution references the UN's resolution declaring the right to development (54/175) and various UN efforts to improve water and sanitation conditions, such as the International Decade for Action, 'Water for Life' (58/217). It recalls the Universal Declaration of Human Rights and several international agreements regarding human rights. The resolution recognizes the commitment of the Human Rights Council to water and sanitation and reiterates the commitment of nations to halving the proportion of people who do not have access to water and sanitation by 2015 as part of the Millennium Development Goals. It urges states and organizations to dedicate resources and efforts to overcoming the widespread deprivation of these rights. See GA Res 64/292, UN Doc A/RES/64/292 (3 August 2010); GA Res 64/PV108, UN Doc A/RES/64/PV108 (28 July 2010); Press

that around 884 million people lack access to safe drinking water.[3] The United Nations General Assembly urged its member states and international organizations to provide the financial resources, general resources and skills needed to help the poorest countries to provide clean water and sanitation accessible and affordable to all. In addition to the still-insufficient access to improved sources of drinking water, 2.6 billion people lack access to basic sanitation.[4] Approximately 1.5 million children under five years of age die each year from diseases related to inadequate access to safe drinking water and sanitation.[5] In October 2010, the Council of the United Nations Human Rights asserted that the right to water and sanitation derives from the right to an adequate standard of living.[6] This statement has led the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation, Catarina de Albuquerque, to declare that 'this means that for the UN, the right to water and sanitation is one of the existing legally binding instruments on human rights'.[7]

Simultaneously, the discussion surrounding water investment is growing as the global population swells and water becomes an increasingly scarce commodity.[8] Services will need to alleviate water stress (in areas where population growth is booming while water supplies dwindle).[9] The rapid increase of the hydraulic fracturing industry is also stimulating a huge demand for water and water services. All these developments further reinforce the possible privatization of water services.[10] The growing economic interests concerning water and water services are

Release, General Assembly, General Assembly Adopts Resolution Recognizing Access to Clean Water, Sanitation as Human Right, By Recorded Vote of 122 in Favour, None Against, 41 Abstentions, UN Press Release GA/10967 (28 July 2010).

[3] Res 64/292, UN Doc A/RES/64/292 (3 August 2010) 2.

[4] Res 64/292, UN Doc A/RES/64/292 (3 August 2010) 2.

[5] Res 64/292, UN Doc A/RES/64/292 (3 August 2010) 2.

[6] Human Rights Council Res 15/9, UN Doc A/HRC/RES/15/9 (6 October 2010).

[7] See Office of the United Nations High Commissioner for Human Rights (OHCHR), 'UN united to make the right to water and sanitation legally binding' *Press Report* (2010) www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=10403&LangID=E

[8] See, e.g. International Water Association, 'International Statistics for Water Services, Specialist Group/Statistics and Economics' (2014).

[9] See Henri Smets, 'Economics of Water Services and the Right to Water' in Edith Brown Weiss and others (eds), *Freshwater and International Economic Law* (OUP 2005).

[10] See Murthy S.L., 'The Human Right(s) to Water and Sanitation: History, Meaning, and the Controversy Over Privatization' (2010) 31 *Berkeley Journal of International Law* 118 (explaining that the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation noted in her 2009 report on non-state actors, which was also cited in the

generating tension with the recent recognition of the human right(s) to water and sanitation.[11] This tension should, however, not be limited to an opposition or a Manichean distinction of business and human rights interests. In fact, the very notion of water has a multifaceted nature: it is a commodity, a public good, a human right, and a common heritage of mankind. At the same time, water is facing many pressing challenges such as the problem of water pollution and the need to access improved water sources.[12] In terms of international law, the groundbreaking work of Laurence Boisson de Chazournes allows us to distinguish three strands with regard to international water law: 'economization'; 'humanization'; and 'environmentalization'.[13] The goal for scholars and lawyers is to accept the complexity of water and to then pursue coherence between the three strands and to achieve sustainability.

This volume focuses on the 'economization' of water;[14] not to merely accept it but to advance our understanding of the trend towards the globalization of water services, the role of the law and institutions in this process, the policy rationales supporting or discouraging various approaches towards the liberalization of water services, and the potential

Human Rights Council resolution, '[t]he right to water (less so the right to sanitation) and opposition to private sector participation are frequently linked to each other.. . . Yet, the two issues are separate. Human rights are neutral as to economic models in general, and models of service provision more specifically.' [Indep. Expert on the Issue of Human Rights Obligations Related to Access to Safe Drinking Water & Sanitation, Rep. of the Indep. Expert on the Issue of Human Rights Obligations Related to Access to Safe Drinking Water and Sanitation, United Nations Human Rights Council, 7, UN Doc A/HRC/15/31 (29 June 2010)].

[11] See, e.g. Emma Truswell, 'Thirst for Profit: Water Privatization, Investment Law and a Human Right to Water' in Brown C. and K. Miles (eds), *Evolution in Investment Treaty Law and Arbitration* (Cambridge University Press 2011) 572.

[12] See, e.g. Dan Tarlock A., 'Four Challenges for International Water Law' (2009) 23 *Tulane Environmental Law Journal 369*.

[13] The 'economization' strand develops into two directions, namely, international trade and international investment law. The 'humanization' strand concerns the access to safe drinking water and sanitation. and there are an increasing number of international conventions that define the right to water. On the 'environmentalization', Laurence Boisson de Chazournes focuses on the role of international environmental law (a number of multilateral environmental agreements) and its key areas, such as: (a) the precautionary principle; (b) the polluter pays principle; and (c) the environmental impact assessments which play an important role in the protection and management of water. See Laurence Boisson de Chazournes, *Fresh Water in International Law* (London, Oxford University Press 2013) 288.

[14] See Laurence Boisson de Chazournes, *Fresh Water in International Law* (London, Oxford University Press 2013) Chapter 3, 'Economization of the Law Applicable to Fresh Water'.

for greater coherence between the three strands, and to achieve sustainability which includes the possibility of reshaping the rules of international economic law.[15] This introduction sets the scene, providing a crucial introduction to the main concepts and definitions with regard to the regulation of the global water services market.

The water industry provides drinking water and wastewater services (including sewage treatment) to the residential, commercial, and industrial sectors of the economy. The water industry includes manufacturers and suppliers of bottled water. Water privatization by companies in the water industry is becoming an issue because water security threatens local communities. The drinking water and wastewater services must be provided to a number of sectors of a nation's economy, including its industrial sectors, commercial sectors, and residential sectors.[16] This forms the scope of the water industry's activities and it explains why the privatization of water sanitation and water services has become a huge market and a much-debated issue in a number of jurisdictions.[17] Although historically the water industry, as a monopoly, has been run as a public service which is owned by local or national government, the recent trends suggest that the role of the private sector (including foreign investors) is increasing.[18] In an increasing number of countries, the water industry is regulated but services are largely operated by private companies with exclusive rights for a limited period and a well-defined geographical space.[19]

The water services are undoubtedly a set of activities conducive to the analysis of economic and legal regulation.[20] Indeed, the opening-up of

[15] See, e.g. Acconci P., 'The Integration of Non-Investment Concerns as an Opportunity for the Modernization of International Investment Law: Is a Multilateral Approach Desirable?' in Sacerdoti G. and others (eds), *General Interests of Host States in International Investment Law* (Cambridge University Press 2014) 181. See also Vinuales J.E., *Foreign Investment and the Environment in International Law* (Cambridge University Press 2012) 187.

[16] See International Water Association, 'International Statistics for Water Services, Specialist Group Statistics and Economics' (2014).

[17] See Vinuales J.E., 'Access to Water in Foreign Investment Disputes' (2009) 21 *Georgetown International Environmental Law Review* 733.

[18] See Thielborger P., 'The Human Right to Water Versus Investor Rights: Double-Dilemma or Pseudo-Conflict?' in Dupuy P.-M. and others (eds), *Human Rights in International Investment Law and Arbitration* (OUP 2009) 490.

[19] See generally Chaisse J. and M. Polo, 'Globalization of Water Privatization – Ramifications of Investor-State Disputes in the "Blue Gold" Economy' (2015) 38 *Boston College International & Comparative Law Review* 1.

[20] See generally Carpenter D., 'Confidence Games: How Does Regulation Constitute Markets?' in Balleisen E.J. and Moss D.A. (eds), *Government and Markets: Toward a New Theory of Regulation* (2010) 164.

competition in this sector has resulted in a profound global change in the role of the public authorities in matters of surveillance and protection of the interests involved. If previously the monopolies that were controlled by the governments were supposed to enable them to ensure the proper functioning of the market, the abolition of this particular monopoly, led by international agencies and international policies, could not be conceived without the setting up of various safeguards; this is intended to ensure that all players in the market (historical operators, new entrants, consumers, etc.) are not adversely affected by liberalization.[21] This rather disparate set of safeguards is well captured by the concept of 'regulation'.[22] If it is difficult to offer an authoritative definition of regulation, it is nevertheless possible to agree at least on the objectives assigned to it in the field of water services: these objectives are to take into account the multiplicity of the interests present in the liberalized markets and to ensure that a balance is established between, on the one hand, the economic concerns that govern some of these interests (e.g. those of the historical operator and new entrants) and, on the other hand, the non-economic requirements that already preside over the operation of the former monopoly, and continue to be present after the liberalization phase (and the concern for social justice, which leads to preserving a minimum of services which benefit the entire population, including the disadvantaged social categories).[23] It is this need to ensure the sustainability of such a balance which, in parallel with the liberalization of water services, has generated a complex and evolving system of regulation in this sector. In short, what the public monopoly claimed to achieve directly, the regulation is said to achieve in other ways, subtler perhaps,

[21] See, e.g. Chaisse J. and Polo M., 'Globalization of Water Privatization – Ramifications of Investor-State Disputes in the "Blue Gold" Economy' (2015) 38 *Boston College International & Comparative Law Review* 1.

[22] For a general account see: Baldwin R. and M. Cave, *Understanding Regulation* (Oxford, 1999); Posner R., 'Theories of Economic Regulation' (1974) 5 *The Bell Journal of Economics and Management Science* 335; Viscusi K. and others, *Economics of Regulation and Antitrust* (2nd edn, MIT 1995); Aranson P., 'Theories of Economic Regulation: From Clarity to Confusion' (1990) 6 *Journal of Law and Politics* 247; Hankte-Domas M., 'The Public Interest Theory of Regulation: Non-Existence or Misinterpretation?' (2003) 15 *European Journal of Law and Economics* 165; Maks H. and N. Phillipsen, 'An Economic Analysis of the Regulation of Professions' in Vereeck L. (ed.), *Regulation of Architects* (Intersentia 2002); Sunstein C.R., *After the Rights Revolution: Reconceiving the Regulatory State* (University of Chicago Press 1990).

[23] See generally Carpenter D., 'Confidence Games: How Does Regulation Constitute Markets?' in Balleisen E.J. and Moss D.A. (eds), *Government and Markets: Toward a New Theory of Regulation* (2010) 164. See also Stigler G.J., 'The Economic Theory of Regulation' (1971) 2 *Bell Journal of Economics* 3.

but which attest to the sizeable share that public power continues to have in the evolution of the field water services.

The present volume aims to shed light on this feature of regulation as an instrument of public policy. In this logic, the advent of a regulatory system appears not to be the testimony of a withdrawal of public power, as traditionally taught, but, on the contrary, as the development of intervention in the water services market. In short, far from signalling a radical decline of public power of the market, the regulation attests to both the sustainability and the protean character of the role of the state. After a detailed analysis of the regulation in water services, one perceives that they are essentially dominated by three concerns: first, the will to create and preserve effective competition in the markets concerned (with a link to trade and investment treaties which provide for conditions of competition); second, the need to retain some control over the production and the evolution of this (with a link with the states' technological and industrial policies); and, third, the concern to ensure a certain redistribution in favour of certain categories of populations or territories (with a link with the human rights and distribution policy). If the first concern fits quite well with the phenomena of liberalization-regulation, dominated by the idea of substituting a competitive monopolistic logic configuration, the two others emphasize instead the will of the public authorities to continue intervening in a binding manner on the water services market, contrary to what the erroneous interpretation of the abolition of monopolies might make one believe. It is precisely what this volume reveals: there is an emerging international regulation of water services based on, on the one hand, an increased competition between water services supplies (through trade and investment liberalization), and, on the other hand, a wish by the states to remain in control of this key sector which now also requires them to take positive action because it has become a human right (to water).

The book is structured as follows. Part I gives a global overview of the international economic law applicable to cross-border water services. Part II provides a more focused analysis of the regulatory developments at regional levels, in the context of regional integrations. Part III focuses on current and potential solutions to achieve a better balance between the economic dimension of water services and the equally important environmental and human dimensions. Chapter 15 synthesizes some of the main conclusions of the book and highlights the need for further research and collaborative dialogue in order to optimize the regulation of the global water services market.

International Economic Law in Motion: Rules, Issues and Disputes

In the absence of specialized international rules for water services, a variety of rules have gained in importance and filled the gaps, but they nevertheless constitute a fragmented regulatory structure.[24] World Trade Organization (WTO) law and investment treaties have a significant impact on the way in which cross-border water services are supplied.[25] Foreign investors have filed a number of investment claims in less than two decades.[26] These filed claims have invited the tribunals to interpret foreign investments in the water industry. The tribunals' interpretations have generated the embryonic international regulatory and *jurisprudential* regime on water services, and these are analysed in Part I hereof.

In Chapter 2, Jansen Calamita focuses on the existing investment case law in water services and the treaty-making issues. He classifies the sources of dispute into three main categories: (a) the inability of governments and contracts to address external shocks; (b) the governmental misadministration of contracts; and (c) the regulatory mismanagement and change of policy on privatization. He ascertains that these disputes are handled through the uniform mechanisms leading to investor–state arbitration and that the tribunals lack specialization. On the treaty-making perspective he calls for the drafting of specialized chapters for water and water services, such as the NAFTA chapter 14 on financial services, and the use of non-investor–state dispute mechanisms. He assesses the role which the 'essential security' provisions can play.

In Chapter 3, Fernando Dias Simões focuses his analysis on concession contracts and discusses the erosion of the concept of public service in water concessions. The provision of water services has historically been considered to be a 'public service' whereas the situation has been changed by the marketization of water services with the increasing recognition of water as an economic good. Water provision requires significant input

[24] See Dupuy P.-M., 'Unification Rather than Fragmentation of International Law? The Case of International Investment Law and Human Rights Law' in Dupuy P.-M. and others (eds), *Human Rights in International Investment Law and Arbitration* (OUP 2009) 46.

[25] See Dupuy P.-M., 'Unification Rather than Fragmentation of International Law? The Case of International Investment Law and Human Rights Law' in Dupuy P.-M. and others (eds), *Human Rights in International Investment Law and Arbitration* (OUP 2009) 46.

[26] See Vinuales J.E., 'Access to Water in Foreign Investment Disputes' (2009) 21 *Georgetown International Environmental Law Review* 733.

and governments are facing the difficulties of how to acquire advanced technology, how to fund the projects, and how to maintain the facilities. In these circumstances, Public-Private Partnerships are widely applied within the privatization of water supply, and sewage services are characterized by the contractual arrangements between the host states and foreign investors, amongst which the concession contract is the most widespread form of private participation in water services provision. In other words, the marketization of water services has shaped the role of the host states in the provision of public services. Due to the lack of an international regulatory body relating to water services, arbitrators are crafting the international water service regime in the context of the cases advanced by the foreign investors alleging that the host states have breached the international investment agreements (IIAs) before the International Center for the Settlement of Investment Disputes (ICSID). This chapter analyses the main cases which have been initiated by foreign investors. These cases involve clashes between investment protection and public interests in order to demonstrate the erosion concept of public service in the area of water services and the possible tools which can be used to mitigate this tension. The core of the disputes lies mainly in the water price or the quality of the water supply; this creates a conflict between the obligation to protect the foreign investments of water companies and the obligation to adopt the regulations needed to protect the host state's own citizens, even though such states also have the right and obligation to regulate. In reality, the host states are more likely to be unable to justify their measures based on the human rights argument; this is because there is insufficient clarity about the status of the right to water and whether or to what extent the tribunal will look at the non-economic issues. In addition, the question of applicability can also be problematic in the proceedings of international arbitration; international law assumes prominence rather than the national law and the concession contracts which had been made clear in water concession disputes. Another remaining aspect about the case law on water concession disputes is the lack of references to the sources of the relationship between the parties: the concession contract. The author believes that water concession contracts are not ordinary commercial contracts on the basis that they have different goals associated with the promotion and protection of public interests. He also points out the paradoxical situation where the tribunal acknowledges that the contract and the legal framework reflect in detail the investors' 'legitimate expectations', but it ignores the same contractual and legal framework when it analyses the host

states' legitimate expectation that the investor would respect its public service obligations. Therefore, new mechanisms should be developed by the public authorities to readjust to the new situation created by privatization. This will ensure both the protection of the investment and the citizens' rights, such as to expressly include adequate provisions in the concession contracts and the careful drafting of investment treaties with reference to public interests.

In Chapter 4, Aline Baillat discusses the interaction between international investment agreements and water resources management. Private investors increasingly perceive the water sector as offering good business opportunities and they seek to secure their capital by investing in water resources when possible. Countries like Australia offer new kinds of opportunities in the area of water trading systems. Beyond the water market, the questions surrounding the investment regime and water resources management are potentially very large. The object of this chapter is to illustrate the various ways in which the international investment regime can interfere with domestic water governance through the study of three recent investor–state disputes, namely, the *Peter Allard v Barbados* case, the *Vattenfall v Germany* case, and the *Bayview Irrigation District v Mexico* case. By doing so, it presents how the globalization of payment for ecosystem services, the internationalization of the Energy Charter Treaty, or the introduction of tradable water rights, such as those in the Murray Darling Basin in Australia, will increase the interference between the international investment regimes and water resources regulations and (more generally) between the various bodies of international law. The interferences of international trade law and international water law, as observed especially in the American Great Lakes region, rest on the lack of clear rules and the lack of explicit property rights regimes which govern the international water systems. It is herein argued that the international investment regime potentially represents an important threat to the management of water resources, precisely because it simplifies or even schematizes the concept of 'property'. In addition, the degree of interference by the international investment regime with water regulation depends on the strength of the institutional framework governing water resources and how clearly property rights are defined and enforced. When the property regime layers which enforce the different levels of public interest in connection with the natural resource are missing, it is then easier for foreign investors to call upon investment rules to advance their interests. And because international investment tribunals tend to overlook the complexities

attached to a property rights regime when making their decisions, it is important to provide specific, powerful, and binding dispute settlement mechanisms to solve disputes involving water resources entitlements. Moreover, it is precisely because these 'environmental' dispute resolution forums are missing (either at the domestic or the international level) that some investors seem to use the investment dispute settlement mechanisms which are much stronger than the former whenever they exist. As the author finally suggests, hopefully, in the context of the post-2015 development agenda discussions, UNCTAD will crystalize the efforts to reform the international investment agreements system by proposing, for example, the exhaustion of local remedies before a complaint is filed with an arbitral tribunal, the appointment of an ombudsman, or the creation of focal points or a joint committee composed of government representatives of both parties to promote amicable resolutions; the 2013 UNCITRAL rules should lead to more transparency in investor–state arbitration.

The tension between access to water and intellectual property rights in the area of water technologies is another key issue under international law, and it is explored in Chapter 5 by Bryan Mercurio and Antoine Martin. Over recent years, technological innovations in the area of water services have developed to increase access to clean water. Many of the innovations are protected by intellectual property rights (IPRs) in the form of patents that grant the innovator exclusive rights for a period of time and which also provide a reward to the innovators and inventors to continue research and development (R&D). However, we can see the tension between the need of IPR holders for recovery from investment and further encouragement of R&D and the impact on access to water. Additionally, the issues relating to IPRs and access to water share many similarities with the long-term debate on IPRs and access to medicine. Both are, on the one hand, recognized as human rights, and, on the other hand, they require significant amounts of monetary and human resources in order to develop the advanced technologies to access the necessary good. Unlike the abundant literature on IPRs and the right to medicine, there are few studies on the interaction between the IPRs and the right to water. Therefore, this chapter makes a contribution to fill the gap and to point out the interaction and substantial differences in the case of water and medicine; it also provides a legal perspective on the contribution which IPRs can make to the worldwide fight against water scarcity through the case study of water desalination technology, which itself reflects key issues surrounding technological developments.