

Katja Eman · Gorazd Meško
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Water, Governance, and Crime Issues

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Foreword

Discussion about Water, Governance and Crime Issues

Water is found almost everywhere on Earth. Approximately 70% of our planet's surface is covered by water in the form of oceans, seas, lakes, rivers and streams, canals and ponds, waterfalls and underground water caves, thermal springs, icy Arctic and Antarctic areas, as well as lesser-known underground reservoirs. Water is considered the second most important natural element for the survival of the human (and almost every other) species, preceded only by air. Furthermore, approximately 75% of the human body is composed of water. Therefore, water is a crucial element of our planet that cannot be bartered with. The fact that more than two-thirds of our planet's surface are covered by water leads to the conclusion that water often represents an ecosystem—a living environment—for numerous species, thus acting as the cradle of biodiversity, which is particularly important for the creation and preservation of ecosystems' sustainability. Indeed, every species contributes to the equilibrium of its ecosystem. Sometimes, it seems that all other living species, except humans, acknowledge and fulfil their role. Only human beings seem to forget where they come from and what is indispensable for their existence on the planet Earth. In this context, we are faced with an increasing problem of drinking water scarcity and the threat it poses to areas and countries that are naturally rich in water.

In the past 100 years, the consumption of drinking water has increased sixfold. The main reasons arise from population growth and the loss of water resources due to climate change. Furthermore, the volume of toxic emissions released into the water has been increasing and making many water sources useless. Karnani (2014) emphasises that the world is already facing a water crisis because data reveal that today, one in seven persons does not have adequate access to safe drinking water. Thus, drinking water represents the second major problem of this millennium after global warming.

Nowadays, we are witnessing two extremes: on the one hand, there is the lack of water, the consequences of which are reflected in poverty, starvation and death. On the other hand, we are observing unforeseeably large amounts of water (flooding, tsunamis, etc.), which cause pollution of drinking water sources and consequently give rise to various diseases and death. Brisman and South (2012) note that climate change caused by global warming and human interference with the environment is

the reason for such extremes. Approximately four billion people (two-thirds of the world's population) struggle due to severe water shortages for at least one month every year. The most affected countries include China, India, Bangladesh, Pakistan, Nigeria, Mexico and parts of the USA. In other words, the "levels of groundwater are falling, lakes are drying up, less water is flowing in rivers, and water supplies for industry and farmers are threatened" (Gonzalez Rivas, 2014). This poses a tremendous threat to the availability of freshwater at the global level. Moreover, access to clean water is an additional problem faced by some countries across the world. Clean water is one of the basic requirements for health and development, although according to the World Health Organization, only half (54%) of the world's population can access water through a household connection to a piped system. The scarcity of drinking water and the difficulties related to access to water are merely two of the various reasons why people are leaving their homes (i.e. migration due to environmental issues), although the most terrible reason for moving stems from the prohibited access to always-available water sources that were sold to a corporation.

Water is an extremely unevenly supplied public good, where major differences occur between rural and urban areas. However, many goods provided as a public utility, such as clean water, are not public goods in the strict sense of the term. Clean water, for example, is subject both to rivalry and excludability. Since the quantities of clean water are limited, one individual's use of that water reduces its availability to others. Given the equipment and infrastructure required to transport clean water across distances and deliver it to households, it is certainly possible for governments to exclude certain people from accessing water or to privilege others. For example, the study of water access in the Mexico City Metropolitan Area revealed significant variations between societal groups, which can be attributed to differences in the political power of those groups (Gonzalez Rivas, 2014). Similar cases include unequal distribution of freshwater in Brasilia, where indigenous people were forced to leave the land on which their cattle has been drinking water daily for decades before a private company bought the land, or the almost dried out Aral and Chad lakes, as well as the Ogallala Aquifer in the USA. The severity of such violations of environmental (i.e. water) protection legislation is on the rise, while similar unlawful acts are also observed in Europe (e.g. Greece, France, Romania, etc.).

The fact that the human race is dependent on water is undeniable. Not only do we drink it and need it for our survival, but we also use it in energy production, industrial production and farming. Nowadays, although we live on a "blue planet", the amount of freshwater is decreasing and its preservation is therefore ever more important. Furthermore, any form of pollution or theft or other illegal activity against water resources is thereby a much more serious type of crime. Any violation of water protection legislation is defined as a crime against water. Against this background, the present book aims to present different forms and cases of violations, or "crimes", against water resources.

While the awareness of environmental crimes is gaining momentum at the international level, crimes against water are an emerging issue. Such crimes have significant impacts, although intelligence is scarce and information fragmented.

Understanding what types of violations may be committed, how they are perpetrated and what impacts they may have on water resources, as well as delineating the crime-trends foreseen in the near future and the factors contributing to the risk of such violations occurring, is a fundamental step to deal with the challenge of protecting water in the coming years. This first step has been taken by discussing water, governance and related crime issues in this book.

The idea for this book emerged from the international research project entitled Water Crimes funded with support from the European Commission (Directorate-General Home Affairs—HOME/2014/ISFP/AG/EFCE/7241). Water Crimes was a research project aimed at providing an inventory of water-related crimes in Europe, the first report on water crimes in Europe and the first strategic analysis in Europe on crimes against water resources. The organisations working on the project originate from four countries: Italy, Hungary, Spain and Slovenia. SiTI—Istituto Superiore sui Sistemi Territoriali per l’Innovazione (Italy) was the partner responsible for coordinating the Water Crimes Project. Other partners included RiSSC—Centro Ricerche e Studi su Sicurezza e Criminalità (Italy), REC—Regional Environmental Centre for Central and Eastern Europe (Hungary), UDC—University of Coruña (Spain) and FJCS-UM—Faculty of Criminal Justice and Security of the University of Maribor (Slovenia). More information about the project is available at <http://www.watercrimes.eu/>. The authors from Cyprus, Canary Islands (Spain), South Africa, Australia, UK, the USA and other Slovenian universities joined us later.

The present book is divided into two major parts: The first part presents theoretical perspectives on crimes against water, known also as water crimes, while the second part focuses on geographic and practical perspectives on water crimes.

The chapter authored by *Rob White* and *Katja Eman* introduces a green criminology perspective on water crimes as a global issue. The authors note that water is worth more than all gold stocks and oil prices, as it represents the source of (human) life. The existence of all living creatures is simply impossible without water. However, the fact that freshwater reserves are limited gives rise to serious problems. Having this in mind, the authors try to highlight the importance of freshwater preservation. They analyse and compare different types of water crimes. In conclusion, the authors attempt to provide an answer to the question as to how to successfully protect freshwater resources.

Avi Brisman, *Bill McClanahan*, *Nigel South* and *Reece Walters* discuss the politics of water rights, emphasising the issues of scarcity, sovereignty and security. The chapter thus explores the ways in which corporate power, supported and sponsored by government initiatives and legal frameworks, monopolises an essential global resource with devastating environmental and human consequences. The authors emphasise that the unsustainable and exploitative use of scarce global resources of freshwater continues to create conflict and human dislocation on a grand scale. Instead of witnessing nation-states adopting more equitable and efficient conservation strategies, powerful corporations are permitted to privatise and monopolise diminishing water reservoirs based on flawed neoliberal assumptions and market models based on “global goods”. The commodification of water has enabled

corporate monopolies and corrupt states to exploit a fundamental human right while, in the process, creating new forms of criminality.

Lorenzo Segato, Walter Mattioli and Nicola Capello try to define the position of water crimes in the environmental crime structure. Unlike any other crime, environmental crimes are aggravated through their additional cost and impact on the environment, as well as their cost to future generations. In this framework, crimes against water have been considered as an emerging global issue, while “water crimes” have only been deemed as an emerging environmental crime recently. The authors emphasise that water does not have a unique position and cannot be isolated from environmental crimes: it may be the environmental resource damaged by a crime (e.g. surface water pollution or fraudulent water quality reporting); the object of a crime (e.g. drinking water theft) or the means of the crime (e.g. intentional flooding or deliberate poisoning of a water supply). The chapter reveals that the analysis of “water crimes” is hampered because offences against water are often recorded under other crimes, such as fraud, corruption, trafficking, etc. The main cause of these issues stems from the absence of a common definition of “water crimes”, which consequently leads to the absence of systematic data collection. The authors conclude that giving relevance to water crimes in the scope of environmental crimes is an important turning point that led to a systematic collection of information useful for the criminological analysis of the phenomenon and for assessing, detecting and prosecuting such crimes.

Katja Eman and Rob White tackle the issue of water as a new high-profit low-risk activity of organised crime. Water is one of the last “profitable niches”, where organised crime groups count on large profits, particularly due to its scarcity, and transform it into a tradeable commodity. The re-conceptualisation of water as a tradeable commodity opened a new way of making profit not only for legal but also for illegal stakeholders. Although organised crime groups have been involved in environmental crime for many years, these activities remain relatively unexplored. In order to tackle organised environmental crime effectively, the second part of this chapter describes several methods and modes, such as environmental enforcement sweeps, National Environmental Security Task Force (NEST), the “method of disruption” and harmed-focused policing, which were already proven to be successful in responding to (organised) environmental crime. Finally, the authors discuss the usefulness of such methods in the water sector.

Walter Mattioli, Nicola Capello and Lorenzo Segato note that different data, different formats, different classifications and different assessment processes lead to the lack of interoperability among police forces and to the recording of water crimes under other offences. Moreover, without an adequate inventory, there cannot be any understanding of the number and impact of offences against water. With the aim of solving this problem, approaches to crime classification systems were analysed to understand the capacity for identifying and collecting information on water crimes and, eventually, understand how to overcome the existing limits. Furthermore, the International Classification of Crime for Statistical Purposes (ICCS) was used and tested. The results of the test revealed that the information about “water” is lost in the data collection process and that the information about the type of water, the

service stage involved or the intended use are not accounted into the ICCS system. Finally, the authors divide water crime cases into seven main categories (threats): 1. Water Corruption; 2. Water Organised Crime; 3. Water Pollution; 4. Water Theft; 5. Water Fraud; 6. Water Terrorism and 7. Water Cyberattacks.

In the last chapter of the first part of the book, *Gorazd Meško* and *Katja Eman* focus on policing water crimes. Water crimes include various types of crimes ranging from the pilfering of water from pipelines and water pollution to fraud and illegal trafficking of water, etc. Therefore, they sometimes represent a real challenge for police investigators. Undoubtedly, water crimes are a type of crime that is difficult to detect, investigate, prosecute and study. It is thus necessary for law enforcement officers to have the necessary knowledge related to water crimes, which should include the knowledge of natural and social sciences, as well as a grasp of other disciplines, such as biology and chemistry. Furthermore, they must have a well-organised coordination and cooperation with other formal social control entities, such as inspectorates, institutes, etc. The authors suggest that policing water crimes should go beyond the classic methods and also include specialised forms of policing, such as problem-oriented policing, community-oriented policing and, where necessary, even intelligence-led policing.

The second part of the book is a snapshot of the evolution of water crimes in different contexts and countries. Based on the scarce data available, the authors analyse water offences in their respective countries and try to devise recurring patterns of criminal behaviours.

The chapter authored by *Luis Javier Capote Pérez* discusses the legal protection of water in the Canary Islands. The author notes that in a world populated by an ever-growing number of people and characterised by a proportionally increasing preoccupation about the demand for natural resources, access to water is being conceived as a fundamental right, related to other similarly important rights, such as health, quality of life or the previously mentioned environment. From the legal perspective, Water Law is now a special discipline of legal science, which combines private and public aspects. Civil Law, Criminal Law and Administrative Law are combined in the regulation of water, which is considered both as a resource and as a product. The chapter provides a brief overview of water regulation in the Canary Islands, a Spanish archipelago where this resource is deeply linked to its geographic configuration and its geological nature and is consequently reflected in its history and its specific legal management.

Ioanna Hadjiyianni, *Andreas Kapardis* and *Nicos Pavlides* studied water crimes in Cyprus at different levels of governance, from the international to the European and local levels. The authors identified the progress made at the EU level in improving enforcement through the criminalisation of infringements of the key environmental law directives, including the Water Framework Directive. The observed progress, however, does not necessarily translate into effective enforcement through criminal law at the national level, given the discretion granted to the Member States in determining the severity of offences and ensuring their enforcement. Finally, the authors emphasise the institutional weaknesses of authorities responsible for enforcement and suggest the necessary improvements.

Iztok Rakar, Bojan Tičar and Tina Sever present legal water protection in Slovenia. Since Slovenia boasts rich water resources, their legal regulation, protection and governance are important and (unfortunately) also complex. This chapter presents selected constitutional and administrative law perspectives on water protection in Slovenia. This is a very important issue, as Slovenia is one of the few countries in the world, which regulates the right to drinking water at the constitutional level. The legislation analysis shows that part of the water protection regulation lacks clarity and the new sector-specific legislation has yet to be adopted and harmonised. The authors emphasise that legislation implementation, and particularly its supervision, is faced with challenges related to human resources management and regulatory activities. They conclude this chapter by discussing possible solutions.

Saša Kuhar and Gorazd Meško present the water crimes situation in the Republic of Slovenia. Slovenia is one of the smallest countries in Europe, but one of the richest in terms of its water resources. Unfortunately, they are not uniformly distributed across the entire territory. A study of statistics, reports and documentation revealed that water crimes are not very frequent in Slovenia. The water pollution offences accounted for 85 per cent of all cases. In most cases, such offences targeted drinking water and sources of freely available natural water, such as rivers, lakes and ponds. Potential dangers for the water sector included the pollution of groundwater, pollution of streams and rivers by factories and theft of water from the pipeline system. In most water pollution cases, the perpetrators remained unknown. According to police statistics, most suspects of water-related crimes were male (82%), while female suspects and legal persons accounted for 8 and 10% of all recorded water, respectively. Suspects were between 34 and 44 years of age. The most significant issue stems from the dark figure of crime against water, since many cases remain undetected and unreported.

Luz María Puente Aba and Eva María Souto García present water crimes in Spain and discuss the protection of water from a criminal perspective. The results of their study reveal that two issues are particularly relevant: the frequent cases of negligence and the involvement of public authorities in the commission of water crimes. The latter is related to corruption, a crime which can also affect the water sector. Apart from water pollution, cases of water poisoning are also relevant within the realm of environmental crimes. The authors note that water accessibility and availability can also be affected not only in terms of human health but also from an economic perspective, as fraudulent behaviour or theft during the process of water distribution can endanger universal access to water. Finally, it is relevant to analyse how water can be used to commit other types of crimes, which can affect human life, such as terrorist attacks, whereby water is manipulated to spread a terrorist threat, regardless of its realistic or fictional nature.

A chapter authored by *Anthony Minnaar* presents the case of water pollution and contamination from acid mine drainage in the Gauteng Province in South Africa. The contaminated water that flows out of mines, termed Acid Mine Drainage (AMD), is dangerous for people's health, as well as for plants, animals and aquatic

life. By the mid-2000s, Acid Mine Drainage had reached a crisis point in the Gauteng Province of South Africa. This crisis occurred simply because some mining companies had abandoned mines without rehabilitating them underground nor neutralising the above-ground mine dumps and slime dams, which subsequently caused the acid mine water to flow into streams, dams and groundwater sources across the province. Despite government efforts to persuade mining companies to take responsibility for “cleaning up” mine water seepage, mine dumps and slime dams, outflows of acid mine water continue to pollute water systems throughout Gauteng. The author examines the tardy efforts of the central government to enforce the mine rehabilitation and acid mine water neutralisation regulations on mining houses, which have in turn conveniently ignored them for many years in pursuit of maximising their profits.

At last, *Katarina Zajc* discusses water privatisation issues based on past examples from the European Union Member States. Firstly, the chapter focuses on empirical evidence, particularly the rule of law, where special emphasis is placed on water crimes and the efficiency of private sector privatisation options (concession agreements or outright sales of water utilities) in transition economies. Secondly, a one-sided prisoner dilemma model, developed and described in the scope of a publication entitled “Privatization and Water Infrastructure” (Zajc, 2004), was used, which predicted that in economies with a high degree of the rule of law, *ceteris paribus*, privatisation options do not matter, since both are efficient. When the rule of law is absent or diminished, outright sales of water utilities are more efficient. Finally, the author discusses the collection of the 15 years’ worth of empirical evidence on the rule of law and privatisation options in water utilities and tests the proposed hypothesis set in 2004.

Water crime issues represent a relatively new and still unknown (i.e. unresearched) field of criminology, law, criminal investigation and other sciences. Findings of the Water Crimes Project and data from the authors’ chapters reveal that we have been tackling the growing issues faced by the studied countries. Nevertheless, they require more in-depth studies and proper training of professionals, particularly police officers, prosecutors and judges. Water crimes can have significant impacts on people’s lives (including on their survival). Thus, understanding which violations can be committed and how, in what forms they can be perpetrated and what impacts they may have on water resources, is a fundamental step in dealing with the challenge of protecting water in the coming years. We also hope that the message of this book will be loud enough to reach those responsible for the governance of water resources and water protection. We believe it is extremely important to refine knowledge-generation tools, promote broad and systematic cooperation with national and international law enforcement agencies and push for the establishment of a standard approach to building and diffusing knowledge applied for assessing the risks of crimes against water.

This publication is not merely a collection of country reports but also an essential reading about water crimes and related issues. A transfer of ideas, research results, practice, policies and legislation can contribute to the understanding of water crime consequences (and victims) and the development of water resource protection tools.

As mentioned at the beginning of this preface, this book is merely a small part of the water crime mosaic; however, we hope to have succeeded in raising the main topics for further discussion and development in this field of research.

The (green) criminological research presented in this book is mainly based on the authors' ambition and dedication to develop responses to water crimes and to promote water protection policies and practices in their respective countries. It is the editors' and authors' belief that water crime issues deserve further scientific study, either as a part of the green criminology or in the scope of other scientific disciplines. We appreciate the effort of all those who contributed to this publication to inform readers about water regulation, water governance and water crime issues in their respective countries.

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Anthony Minnaar, Ph.D., from January 2009 to June 2014 was the Programme Head: Security Management and Postgraduate Coordinator in the Department of Criminology and Security Science in the School of Criminal Justice of the College of Law at the University of South Africa in Pretoria. He was appointed a full Professor (Criminal Justice Studies) in July 2003. In January 2013, he was appointed as a Research Professor at UNISA. A National Research Foundation (NRF) rated Researcher (2003–2007 (C3); 2008–2012 (C2)) and in 2012 received an NRF re-rating of C1 (2013–2018). He is a recipient in 2006 and 2017 of the University of South Africa (UNISA) Chancellor's Prize for Research Excellence (College of Law). He has published widely and presented at numerous international conferences on a wide variety of topics and issues in criminal justice, criminology and policing. In the early 1990s, he published largely on issues of political violence and conflict inter alia migrant labour hostel violence (Goldstone Commission Report); warlordism; massacres and the proliferation of firearms and self-defence units. In the mid-1990s, his research interests turned to other forms of violence such as land disputes; informal settlements; illegal squatting and evictions; minibus taxi industry conflicts; violence around witchcraft accusations; xenophobia and undocumented migrants and vigilantism. More recently, he has researched border controls; migrants'/refugees' rights; motor vehicle hijackings; use of force by police; the murder of police officers; use of informers and witness protection programmes; the struggle to legislate for stricter gun controls and the declarations of persons to be unfit to possess a firearm and security measures at ports-of-entry. His current research interests are in the broad field of applied criminal justice dealing with the specific issues of corruption prevention, border controls and undocumented migrants; xenophobia and refugees; use of firearms in violent crime; use of force by police/security officers and issues of militarisation vs demilitarisation of law enforcement; civilian oversight of public and private policing; private security industry issues (specifically crime prevention and private policing; community policing and community safety initiatives); regulating and monitoring the Private Security Industry in South Africa; security measures at sea/air ports-of-entry; cyber-attacks, cybersecurity, information protection and cybercrime; ransomware; privacy issues and cyber-surveillance; the use of CCTV surveillance systems for security and neighbourhood safety/crime prevention and issues of rural crime in South Africa. He was Editor-in-Chief (2012–2016) and Co-Editor-in-Chief (2017–2018) of the journal: *Acta Criminologica: Southern African Journal of Criminology*. He retired from UNISA in December 2018. Currently, he is a Research Associate in the Department of Criminology and Criminal Justice at the University of Limpopo, Sovenga, South Africa.

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Part I
Criminological Perspectives of Water
Crimes

Chapter 1

Green Criminology, Water Issues, Human Rights and Private Profit



Rob White and Katja Eman

1 Introduction

Fresh water is a basic essential of life. It is fundamental to the wellbeing of humans, to ecosystems and to flora and fauna. It constitutes the lifeblood of many industries, from tourism to mining, agriculture to aquaculture. Activities and events that threaten the quantity and quality of fresh water therefore have major negative consequences for health, business success and national security. What is more, water is “one of the world’s greatest renewable resources and is a natural monopoly essential to health and wellbeing” (Whelan & White, 2005, p. 135). In other words, clean safe water presents as a biological, social, economic, and spiritual necessity for contemporary society (Archer, 1998, p. 30).

While essential to life, there are presently a number of threats to fresh water supply on a world scale. The scarcity of water is itself part of the problems. As this chapter demonstrates, water issues have a number of dimensions and from the point of view of human rights can be analysed in relation to notions of crime, criminality and social and ecological justice. Who owns and controls water, and how they do so, is of major concern.

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2 Current State of Play

Today, we are witnessing two extremes. On the one hand, in many parts of the world there is a lack of fresh water, the consequences of which are reflected in impoverished communities, starvation and death. The over-exploitation of water resources is a major problem worldwide. An example of this is the Aral Sea which is 'disappearing' due to the irrigation used in agriculture which has greatly reduced the main river tributaries flowing into that sea (Karnani, 2014). Spoor (1998) stressed almost two decades ago that with no appropriate changes in how we manage them, there is the threat that water resources will run out by 2050. On the other hand, many existing water sources are subject to contamination. This may be due to industrial pollution of waterways or to climate-related events that periodically affect water supplies. Water quality is affected, for example, by floods and tsunamis that taint drinking water and subsequently foster disease. Brisman and South (2014) emphasize that global warming and human interference with the natural environment creates the conditions for drought and flood alike. Economic growth and technological development have reached a critical environmental limit, ultimately threatening the destruction of civilization as we currently know it (Meško & Eman, 2012).

Over past century water has been consumed at astonishing rates (Crank & Jacoby, 2015). In this period, for instance, the consumption of drinking water worldwide has increased six-fold. The main reasons for this are population growth. Simultaneously, there has been loss of water resources due to contamination and climate change (Eman & Meško, 2020). A scarcity of clean drinking water has become one of the crucial problems of the twenty-first century. As already emphasized, humans are dependent upon water. Yet, the amount of fresh water is decreasing, making its preservation even more important. As Karnani (2014) points out, that the world is already facing a water crisis, because daily one of seven persons does not have appropriate access to safe drinking water.

The harms and risks to water supply are associated with multiple causes that include industrial pollution and water theft, through to global warming. Its importance to personal, social and economic health and wellbeing has recently generated increasing criminological interest (White, 2003; Bricknell, 2010; Johnston, South, & Walters, 2015; Brisman, McClanahan, & South, 2016; Eman & Meško, 2013; Eman, Kuhar, & Meško, 2017, 2018). Especially in the light of environmental drivers such as land use, climate change and infrastructure, there is an urgent need to consider the nature, dynamics and impacts of water crimes. In order to do this, new typologies of crime have to be developed, new methodologies for research instigated, and new modes of social control devised if we are to adequately address present and future issues. White and Perrone (2015, p. 306) emphasize that questions pertaining specifically to environmental justice have been of longstanding interest and water is one of the crucial items in this discussion.

Studies on water have variously focused on water scarcity (Bennett & Lynch, 1990; White, 1998; González Rivas, 2014); water pollution (Pečar, 1981; White & Heckenberg, 2014; Barclay & Bartel, 2015; Eman, Kuhar & Meško, 2016), the