



WATER LAW ENFORCEMENT

November 2021



Québec 



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- The examples were collected through the INBO networks and from case studies provided by INBO partner contributors.
- The list of contributors appears at the end of the manual.
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FOREWORD

Proper water resource management requires a broad yet precise and realistic legal and regulatory framework to be in place.

To date, most countries around the world have established this regulatory framework, often called the Water Code, which constitutes the foundation of water governance for a country, an infranational or cross-border basin or a region.

Nevertheless, there is a persistent and recurrent problem in this field around the world: the application of legal provisions, and their effective and efficient implementation – in other words, bringing about progress in the field of water resources and aquatic environments. Compliance with water legislation and in particular with rules outside the water sector that have an impact on the resource remains, in many places, an especially significant challenge as it affects all water users and covers parallel areas to the water sector, such as town planning, agriculture and energy.

Beyond this aspect, the actual application of established rules and therefore the actual compliance with these rules is a key element in guaranteeing progress in sustainable resource management.

Ensuring this compliance is impossible without a specific organisation that could be referred to as “water policing” in the sense of operational water law enforcement.

In other words, there is no chance of progress without organised and efficient “water policing”, or a system for controlling activities which, in a broad sense, have an impact on water resources and their associated ecosystems.

This inspection system should be organised by the state, under the responsibility of the relevant government administrations and be made operational in territories, districts or regions and for basins and sub-basins. Experience also tells us that water resource management at river basin level facilitates the efficient implementation of this inspection system and water policing.

Moreover, it is of the greatest importance that water policing is decentralised, acting at the most local level and as closely as possible with users and stakeholders, while retaining a scope of action developed at national level.

The importance of water policing is well known. However, the reality of its efficient implementation is a challenge in most situations around the world. In order to answer questions being raised by a host of water professionals, INBO has produced a manual on “water policing”, based on examples collected around the world, particularly thanks to the support of the INBO’s regional networks.

The document provides essential recommendations on the fundamental themes of water policing, which are also illustrated by practical case studies taken from contributions by INBO members.

The manual was launched at the World Water Forum in Dakar in March 2022. It is initially available in French, English and Spanish.

Mr Eric TARDIEU
GENERAL SECRETARY INTERNATIONAL NETWORK
OF BASIN ORGANISATIONS

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ABREVIATIONS AND ACRONYMS

■ ADASA	Regulatory Agency for Water, Energy, and Basic Sanitation of the Federal District of Brazil
■ ANA	National Water Agency of Brazil
■ ANAR	National Administration «Romanian Waters
■ ANC	Notice of Non-Compliance
■ APMD	Prefectoral Decree of Formal Notice
■ CCEQ	Quebec Environmental Control Centre
■ CH	Hydrographic Confederation
■ CN	National Constitution
■ CVRH	Centre of Human Resource Development
■ WFD	Water Framework Directive
■ DDTM	Departmental Directorate of Territories and the Sea
■ DGI	General Directorate of Irrigation
■ DPH	Public Hydraulic Domain
■ DREAL	Regional Directorates of Environment, Land Settlement and Housing
■ PE	Population Equivalent
■ ENAC	National Accreditation Body
■ ERU	Urban Waste Water (Directive)
■ IOTA	Facilities, Works and Activities
■ IPEC	Pedagogical and collaborative innovation sub-directorate from the French Ministry of Ecological Transition
■ LQE	Environmental Quality Act
■ MELCC	Ministry of the Environment and the Fight Against Climate Change

■ MEWF	Ministry of Environment, Water and Forests
■ NARW	National Administration of Romanian Waters
■ OFB	French Biodiversity Agency
■ ONCFS	National Office of Hunting and Wildlife
■ ONEMA	National Office for Water and Aquatic Environments
■ MENBO	Mediterranean Network of Basin Organisations
■ RDPH	Public Hydrographic Sector Legislation
■ INBO	International Network of Basin Organisations
■ RMA	Report of Administrative Non-Compliance
■ SAP	Administrative Pecuniary Sanction
■ SAGE	Water Development and Management Plan
■ SEPRONA	Guardia Civil Nature Protection Service
■ SDAGE	Water Development and Management Master Plan
■ SIA	Intercommunal Sanitation Syndicate
■ SR	Romanian Standard
■ STEU	Wastewater Treatment Plant
■ TRLA	Consolidated Text of the Water Act (Texto Refundido de la Ley de Aguas)
■ UTM	Universal Transverse Mercator coordinates
■ TGI	High Court (French Tribunal de Grande Instance)
■ EU	European Union

1 - SCOPE OF INTERVENTION FOR WATER POLICING

- The regulatory framework (law or act, decree and implementing provisions) must clearly define Water Policing and its foundations, on a national and local level, both for administrative and legal policing.
- Legislation on water must be brought together in a single document (water code, environmental code), in the knowledge that certain parts refer to other laws: town planning, agriculture, healthcare and industry.
- Links between the provisions of different legislation on water resources must be clearly established.
- On a national level, a single ministry must be in charge of coordinating water policing.
- The water management framework may influence water policing: organising water management by river basins may lead to a water policing organisation on that scale (as is the case in Spain) rather than on the scale of a district or department (as is the case in France).
- The operational service in charge of water policing must be situated locally (department, basin, etc.) and its stakeholders brought together in a single unit.
- The regulatory framework must precisely define the activities, works and facilities of which the administration must be aware and which require authorisation to be sought beyond a certain level (such as abstraction, discharge, river dredging, etc.).
- International legislation (agreements on water shared between several countries, EU cooperation framework) should be taken into account for national water policing.
- There must be an efficient relationship between administrative policing, which covers authorisations and inspections, and legal policing, which records offences and takes legal action.
- Legislation must specify which stakeholders and bodies are involved in water policing, at what level and with what responsibilities, with care taken to avoid any overlapping and facilitate coordination between these stakeholders.

In the general organisation of water policing, the principle of subsidiarity must apply: if the national framework is necessary, particularly with a view to the equality of all citizens before the law, any decision-making resulting from the application of water policing (authorisations, official reports, etc.) must be decentralised, or under the responsibility of local state services, as close as possible to the place where the activity requiring surveillance is taking place.

Cohesive water policing action is essential to its efficiency over time and in the field. To this end, the coordination of water policing and more widely of the application of legislation on water must be entrusted to a single ministry in charge of water management. This ministry is responsible for liaising with other ministries, including the ministry of justice, both in terms of defining legislation and implementing it.

The ministry in charge of water policing is tasked with formulating water policy and, within it, water policing legislation. It must also ensure the law is implemented, however, it may delegate the policing role to an independent and specialist establishment that is more local or able to decentralise its action, particularly for basins.

Given the significant interconnections between the water sector and other environment sectors (biodiversity or energy, for example), it may be advisable for water policing to be integrated into the wider sphere of environment policing.

As water resource management has multiple interconnections with other sectors (agriculture, town planning, industry, healthcare), a link should be established between water policing and other areas of administrative policing in order to avoid any redundancy and maintain cohesive action.

In many cases, on a local level, there are several police services tailored to each major type of use (irrigation, drinking water, industry). In order to ensure proper coordination, cohesive action and greater efficiency, it is recommended that all the mandates of these services are brought together into a single unit at a decentralised level, such as a basin with local branches, small region, district or department. This new administrative organisation will deal with all aspects of water policing within the chosen scope, in accordance with the law on water and associated laws.

According to emergencies and local priorities and in line with national guidelines, control indicators for water policing and the planning of inspection operations should be established.

The more detailed and precise the knowledge of water uses and users, the easier the work of water policing will be. As such, it would be salutary to draw up a register of users, as long as there is an effective procedure for keeping it up-to-date. Comparing data on users is also relevant to the efficiency of water policing.

Water policing must be organised in such a way as to maintain a close connection between water policing and water resource management. This relationship with basin organisations should therefore be facilitated.

The organisation of water policing varies a great deal depending on the administrative situation of the country. In certain cases, this organisation is based on basins, with water policing conducted by the basin organisation (in the case of Spain) or by a river-based body (river chief in China); in other cases it is separate from the river basin, based on a local administrative body (in the case of France), while maintaining close relations with the basin organisation.

Insert n° 1 - Framework for action in Water Law enforcement in Romania

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Ruxandra Balaet - Dr Hydrogéologue,

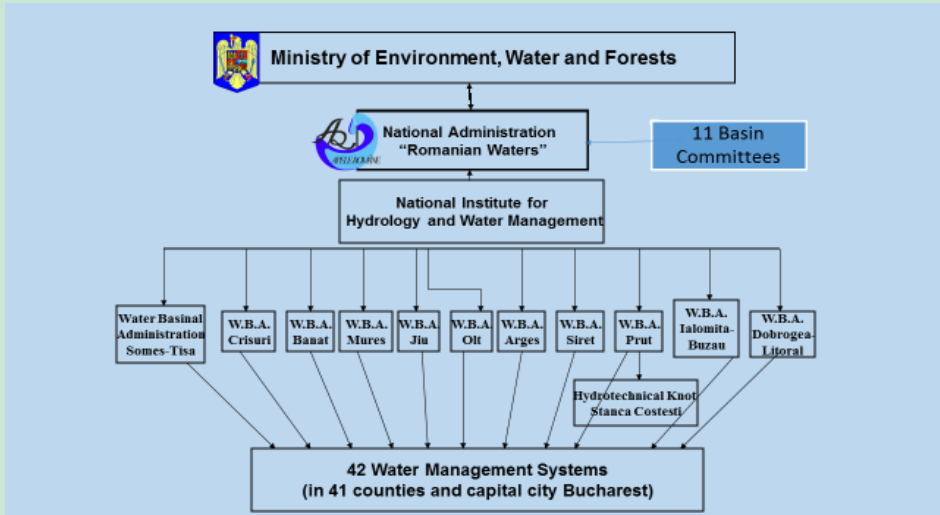
Senior Advisor, Ministry of Environment, Water and Forestry, Romania

In Romania, only one ministry, namely the Ministry of Environment, Water and Forests (MEWF) coordinates and surveys Water Law Enforcement. MEWF promotes a unitary, coherent water policy, having the following main targets:

- integration of Water Law requirements in the sectoral strategies;
- adaptation of the whole legal framework (Water Law no. 107/1996, as later amended and completed and derived legislation) in order to comply with European Water Framework Directive, Floods Directive, Marine Strategy Directive and other EU directives on water;

- risks management and prevention of the floods associated disasters;
- implementation of the “polluter pays” and water services “costs recovery” principles;
- development of projects on water, financed inclusively through the Environmental Fund;
- raising the public awareness on water issues.

MEWF closely cooperates with Ministry of Health concerning the drinking water quality and with the National Agency for Mineral Resources concerning the licences for mineral water exploitation, bottling and commercialisation.



Organisational Chart for Water Law enforcement in Romania

Under MEWF coordination, the National Administration “Romanian Waters”(NARW) and its subsidiaries (the Basinal Administrations, the Water Management Systems and the National Institute for Hydrology and Water Management) are the operational services in charge with enforcement of Water Law provisions concerning:

- research and planning of water resources;
- granting permits and authorizations for the works and activities on water or related to water;
- achievement of water infrastructure investments;
- qualitative and quantitative monitoring of inland surface and ground waters and of marine coastal waters;
- flood protection;
- basinal coordination of reservoirs exploitation;

- implementation of contributions, payments, tariffs and penalties system specific to the water management activity;
- inspection and control.

The people involved in Water Law enforcement are grouped in a single unit – NARW, with basinal and local branches under the public central authority in the water field – MEWF, but also cooperating with the local administrative authorities.



Water Basinal Administration Banat Headquarters in Timisoara City, historical and architectural monument named "Water Palace", built in 1901 in Secession Style

All water related activities of MEWF and NARW are carried out in accordance with the Water Law no. 107/1996 and the associated laws and regulations, as later amended and completed:

- Government Emergency Ordinance no. 107/2002 regarding the establishment of the National Administration «Romanian Waters», as later amended and completed;
- Government Emergency Ordinance no. 244/2000 regarding the safety of dams;
- Government Emergency Ordinance no. 138/2005 regarding the safe exploitation of the reservoirs with fishing, recreational or local use, from the C and D importance categories;
- Government Emergency Ordinance no. 19/2006 on the use of the Black Sea beach and the control of the activities carried out on the beaches;
- Government Emergency Ordinance no. 202/2002 regarding the integrated management of the coastal area;
- Government Decision no. 188/2002 for the approval of some norms regarding the conditions for discharging wastewater into the aquatic environment;
- Government Decision no. 930/2005 for the approval Special rules on the character and size of sanitary and hydrogeological protection areas;

- Government Decision no. 52/2009 for the approval of the National plan for groundwater protection against pollution and deterioration;
- Government Decision no. 570/2016 for the approval of the Program for the phase-out of discharges, emissions and losses of priority hazardous substances and other measures for main pollutants;
- Order no. 828/2019 of the minister of water and forests on the approval of the Procedure and competencies for issuing, modifying and withdrawing water management permits;
- Order no. 891/2019 of the minister of water and forests regarding the approval of the Procedure and competencies for issuing, modifying, withdrawing and temporarily suspending the water management authorizations;
- Standards SR EN ISO / CEI 17020: 2005, respectively SR EN/ISO 9001;
- The technical norms regarding the organization and development of the inspection and control activity in the field of water management, approved by ANAR Decision no. 356/2011;
- Other norms, technical prescriptions and standards in the field of water management.

Insert n° 2 - Ensuring compliance with water sector legislation: the French approach to Water Policing

Pascale Lagrabe - Deputy Director, French Biodiversity Agency

Water policing and aquatic environments in France is governed by successive laws that have been passed gradually, from water usage control to environmental protection and from national legislation to European legislation.

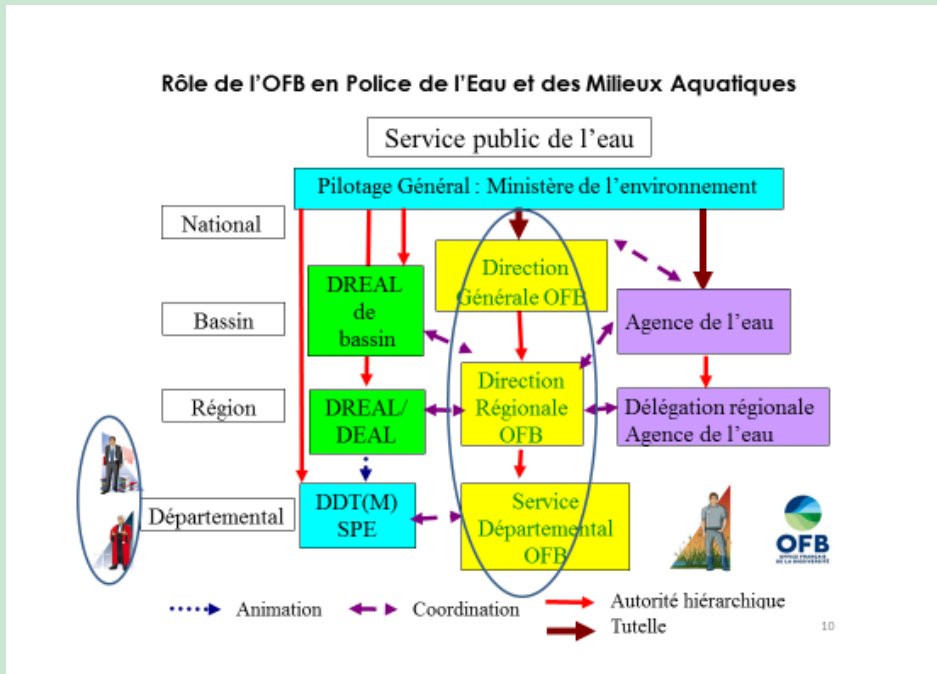
The 1964 law on water regulated user satisfaction as well as covering environmental protection. Prior to that, Napoleonic Code and the 1898 law covered the ownership of water under the state's inspection system. The 1992 law set a cohesive and detailed framework for checks on water resources and aquatic environments and the 2000 WFD set objectives based on the current inspection system.

The law (Environmental Code) establishes the following principles:

- water is part of the common heritage of the nation, which gives the state full legitimacy to act in the general interest of the country;
- water resource management must be balanced and sustainable, meeting the objectives of qualitative and quantitative resource protection, the preservation of aquatic ecosystems and the reconciliation of environmental and economic interests linked to the water resource;
- protective measures must be implemented for all types of water: surface water, groundwater and seawater (territorial waters).

The special police force known as the Water Police comprises administrative police under the authority of the Departmental Prefect (Ministry of the Interior) and the judiciary police under the authority of the Public Prosecutor (Ministry of Justice). The French Biodiversity Agency (environment ministry) provides operational and technical support to both these authorities, through the expertise of its environmental inspectors.

On a national level, water policing falls under the authority of the environment ministry (French Biodiversity Agency) and is conducted on a regional and local level through regional and departmental departments



Legislation on water policing adheres to the following principles.

- A system of individual authorisation or declaration, with national legislation (nomenclature) that establishes the list of facilities, works and activities that have an impact on the aquatic environment and which are therefore subject to authorisation or declaration, according to the severity of the damage they cause to the resource; this covers abstraction or discharge as well as development projects; based on a case containing an impact analysis on the environment and the resource, the Departmental Prefect (local government authority) decides whether or not to grant the authorisation or declaration and sets the terms for the project's execution.
- Specific regional rules set on a local level, covering the limitation or temporary suspension

of water use in the event of drought or flooding crises, and reinforced protective measures for a specific water resource, either in areas with a deficit of water in relation to requirements or in areas at risk of pollution; the Departmental Prefect establishes the content of this local legislation locally.

Water policing comprises two distinct regimes: administrative policing, under the authority of the Departmental Prefect, and judiciary policing, deployed by the Public Prosecutor. As such, there are two types of sanctions in the event of non-compliance with legislation: administrative sanctions, which do not involve the justice system, and criminal sanctions, which involve the justice system in support of the administrative police.

In total, 1,800 OFB environmental inspectors are involved in all stages of water policing:

- upstream, by providing technical support to the Preventive Administrative Police
- downstream, through Administrative Police checks and investigations alongside the Judiciary Police.

In their field of expertise, inspectors also provide support to the Departmental Prefect to implement preventive policing, writing technical opinions on authorisation requests submitted by users and establishing regional legislation.

Insert n° 3 - The “river chief and lake chief” system in China

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China Institute of Water Resources and Hydropower Research

The background for launching the Opinion

In 2007, a large-scale outbreak of algae bloom in Taihu Lake triggered a water crisis in Wuxi, Jiangsu province. The local government has realized that the root cause of the water crisis lies in the shore. To solve these problems, we need to take a holistic approach to manage the water and the shore, the upstream and the downstream, and the left and right banks. More importantly, we need the leadership of the Party and government, the linkage of various sectors, and the participation of the society. Wuxi has explored and implemented the River Chief System under the responsibility of local administrative heads, and fulfilled the principal responsibilities. As a result, the water quality of Taihu Lake has significantly improved. Jiangsu, Zhejiang, Jiangxi and other provinces have explored and implemented the River Chief System in light of local realities, constantly enriching and improving the connotations of the River Chief System.

The General Office of the CPC Central Committee and the General Office of the State Council promulgated the “Opinion on the All-around Implementation of the River Chief System” in November 2016, calling for the full establishment of this system by the end of 2018

The overall requirements and main tasks

1. “River Chief” structure.

A four-tier river chief system covering provinces, municipalities, counties and townships is established comprehensively. A general river chief is set up for all provinces, which is to be acted by a main principal of the government; a river chief is set up for main rivers within the administrative region of each province, which is to be acted by a provincial principal; a river chief is set up for each level and section of each river in the respective city, county and township, which is to be acted by a principal of the same level.

2. What are the responsibilities of the river chief?

River chiefs at every administrative level are responsible for organizing and leading corresponding river and lake management and protection work, including the water resources protection, the shoreline management, the water pollution prevention and control, and the water environment governance, etc.; taking the lead to rectify outstanding problems, such as the encroachment of river courses, reclamation of lakes, excessive discharge of pollutants, illegal sand mining, destruction of waterways, and fishing by the use of poisons, and explosives or electricity, and coordinating to solve major problems; clarifying the management responsibilities of rivers and lakes across administrative regions, and coordinating the implementation of joint prevention and control of upstream and downstream, and the left and right banks; supervising the performance of duties of relevant departments and river chiefs at the next lower level, assessing the achievement of goals and tasks, and strengthening the incentives and accountability.

3. What are the main tasks of the River Chief System?

Tasks of River Chiefs can be divided into 6 main categories:

- Strengthen water resources protection: Implement the strictest water resources management system, implement the dual control of the total amount and intensity of the water resources consumption, strengthen management and supervision of water function areas, and strictly control the total pollutant discharge into rivers and lakes.
- Strengthen shoreline management and protection: strictly control the water ecological space along the river shorelines, strengthen the protection and the economical and intensive utilization of river shorelines, and prohibit encroachment of river courses, reclamation of lakes or illegal sand mining, so as to restore the ecological functions of river and lake shorelines.
- Strengthen the prevention and control of water pollution: make overall planning for the treatment of pollution on water and shore, investigate the pollution sources into rivers and lakes, optimize the layout of sewage outfalls of rivers and lakes, and regulate such outfalls.
- Strengthen the water environment governance: Protect the safety of drinking water source effectively, strengthen the comprehensive governance of the water environment of rivers and lakes, regulate the rural water environment comprehensively, and push forward the construction of beautiful countryside.
- Strengthen the water ecology restoration: steadily implement “Return Farmland to Lakes and

Wetlands” and “Stop Fishing to Restore Lakes” to restore the natural connection of water systems of rivers and lakes and strengthen conservation of aquatic biological resources, carry out the health assessment of rivers and lakes, strengthen the comprehensive governance of mountains, rivers, forests, farmlands, lakes and grasslands, and actively promote the establishment of an ecological protection compensation mechanism.

- Strengthen the law enforcement and regulation: establish and improve a regulatory system and an inter-agency joint law enforcement mechanism, establish a daily supervision and inspection system for rivers and lakes, and crack down on illegal behaviors related to rivers and lakes.

Implementation Status

At the end of 2018, the River Chief System was fully established across the country, and river chiefs started to play their role since then. General river chiefs of the Party and government have been set up in 31 provinces (autonomous regions and municipalities directly under the central government), with over 300,000 river and lake chiefs at the provincial, municipal, county and township levels and over 900,000 river and lake chiefs (including river inspectors and river guardians) at the village levels, thus ensuring the full coverage of river and lake management responsibilities.

In 2018 and 2019, the accumulative number of river inspections conducted by river chiefs at the provincial, municipal, county and township levels exceeded 7.1 million persons times. River chiefs coordinated to solve practical problems, formulated and implemented “specific policies for each river respectively”, and promoted the implementation of various tasks under the River Chief System.

Local governments also established the joint prevention and control mechanism and the inter-agency coordination mechanism for trunks and tributaries, upstream and downstream, and left and right banks, set up river police chiefs and river procurators, fostered and expanded the team of non-governmental river and lake chiefs and volunteers, and continuously enriched the responsibility system of river and lake management and protection.

The Ministry of Water Resources launched a nationwide campaign to rectify 137,000 “four-chaos” problems (illegal occupation, illegal mining, illegal piling, and illegal construction) of rivers and lakes. As a result, rivers and lakes have been significantly improved and their flood storage capacity has been further enhanced. As for the Yangtze River, the Yellow River and other major river basins, special actions including the shoreline utilization projects and solid waste cleaning and management measures were carried out, solving a large number of “long-lasting and difficult” problems in rivers and lakes. Local governments took a comprehensive approach to tackling the chronic water pollution, continued to restore the water ecological environment, and strived to create a happy river for the benefit of the people, which won the praises of the people.

The comprehensive implementation of the River Chief System is a pioneering work, which requires the accumulation of experience through constant exploration and practices, as well as continuous and lasting efforts. In the next step, the legal responsibilities of river chiefs and relevant departments for performing their duties will be detailed and clarified, the ability to perform their duties will be improved, the assessment accountability, incentives and constraints will be strengthened, and the River Chief System will be promoted in terms of name and reality.

Case: Wuxi City

Wuxi City in Jiangsu Province is the birthplace of the river chief system. In the summer of 2007, due to deterioration of water quality in Taihu Lake as well as adverse meteorological conditions, blue algae bloom broke out in large areas in Taihu Lake, giving rise to water crisis in Wuxi. With this painful experience, the local government came to realize that the blue algae bloom caused by water quality deterioration showed symptoms in water but its root cause was on the shore.

To resolve these problems, they should not only work in water but also work on the shores; not only control pollution in local areas, but also coordinate the joint control and treatment of upstream and downstream, left and right banks of rivers; not only rely on such departments as water resources, environmental protection and urban construction for effective fulfillment of responsibilities, but also require government leading, departmental coordinated efforts and social participation.

In August 2007, Wuxi took the lead to implement the River Chief System. Government leaders at various levels acted as river chiefs of 64 rivers to strengthen the treatment of pollutant sources and are responsible for supervising the improvement of river water quality. Since the implementation of the River Chief System, obvious effects have been achieved. The water qualification rate of water functional areas within Wuxi improved from 7.1% in 2007 to 97.8% in 2018, and the water quality in Taihu Lake has also been significantly improved.

Insert n° 4 - Development of water policing in France

*Claude Miqueu - Member of the Adour-Garonne Basin Committee and scientific council
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Step one: establishing MISEs (Inter-Service Water Missions)

Prior to the first law on water of 1992, water policing was conducted by each French department by a large number of different services depending on the place (urban/rural, coastal area), type of resource (surface or groundwater) and usage type. Certain services had up to eight different services, themselves under the authority of different ministries.

Under pressure from the population arising from government failings during a series of drought crises in the 80s, water symposia were organised, first on a local and regional level, then on a national level in the 90s, the result of which was the obligation under the 1992 law to bring water policing services together in a single unit.

The process was intentionally progressive, beginning with the implementation of a MISE (Inter-Service Water Mission) in each department, which obliged the relevant administrations to work together in this sector. The MISEs subsequently led to the establishment of a single point of contact, a water policing service overseen by a single departmental administration.

Step two: the reforms of 2013 and 2017

Before the reform of July 2013, water policing was conducted by three specialist police forces:

- The water and aquatic environment police, which implemented state water policy on a departmental level, in particular the application of the European Water Framework Directive (WFD) and the law on water and aquatic environments (LEMA);
- The fishing police, which oversaw compliance with freshwater fishing legislation, protection of the aquatic environment and fish resource management;
- La police des installations classées, pour l'application de la législation relative aux installations classées (usines, ateliers, dépôts, chantiers - 500 000 installations classées en France).

These 3 specialist police forces were coordinated by the MISEN (Inter-Service Water and Nature Missions) under the authority of the Departmental Prefect. Elles regroupaient l'ensemble des services de l'Etat et des établissements publics intervenant dans le domaine de l'eau et de l'environnement, DDTDirection Départementale des TerritoiresM (Directions Départementales des Territoires et de la Mer), ONEMAOffice national de l'eau et des milieux aquatiques (Office National de l'Eau et des Milieux Aquatiques), DREALdirection régionale de l'environnement de l'aménagement et du logement (Direction Régionale de l'Environnement, de l'Aménagement et du Logement), ARSAgence Régionale de Santé (Agence Régionale de Santé), Agence de l'eau...

These administrative or judiciary police forces were tasked with protecting or restoring the quality of environments and water resources, as well as reconciling the different and at times contradictory uses of water.

Since 1 March 2017, IOTA (Facilities, Works and Activities) and ICPE (Installation Classified for the Protection of the Environment) facilities that fall under the authorisation system now fall under an environmental authorisation system.

Authorisation requests are therefore assessed on the basis of a single case, which ultimately enables the government authority to rule with a single decision in accordance with more than one environmental regulation (clearing, protected species, etc.).

Since 1 January 2020. Institutional innovations: the establishment of the French Biodiversity Agency (OFB). The French Biodiversity Agency (AFB) and the National Office of Hunting and Wildlife (ONCFS) have merged into the new French Biodiversity Agency. A new force to meet the challenge of protecting and restoring biodiversity in Mainland France and the Overseas Territories. The OFB contributes to the work of administrative and judiciary policing on water (resource pollution, infringements on wetlands or coastal areas), natural areas, wild flora and fauna (game or protected species, anti-animal trafficking), hunting (anti-poaching, reinforcing hunting safety) and fishing. To prevent and suppress environmental infringements, the OFB's 1,800 environmental inspectors lend their technical expertise, monitor the land, raise awareness among users, seek out and record offences and perform anti-poaching operations. The police powers of the environmental inspectors have been reinforced and they are sworn in and commissioned by the public authority.

2 - TRAINING

- Water policing required advanced technical skills and legal knowledge.
- They must not only be trained on water resources but also aquatic environments and ecosystems, and how these work.
- It is important to have a suitable framework for training water police officers that draws on one or more accredited institutions to provide suitable training.
- The training pathway may involve basic training, in line with the recruitment programme for agents, and skills development sessions on the different aspects of water policing.
- These two types of training pathways focus on the necessary technical and legal skills.
- In-person training with water police officers and other relevant public servants (justice system and gendarmerie) should be promoted to facilitate discussion.
- Officers should be given all appropriate means to appropriate water policing legislation beyond the training itself.
- In addition to officers in charge of water policing, it is recommended that local elected representatives be offered suitable training as they are an important link in the water policing chain.

The skills to conduct all water policing missions cover a broad spectrum, from the numerous and varied technical aspects relating to water resource and aquatic environment management to administrative rules and the legal and judiciary sphere. Future inspectors or water police controllers must attend suitable training sessions before being appointed to their role.

This training should be undertaken soon after taking up a position (for example within 6 months).

The training content can be tailored to the skills already acquired by the officer (initial training or prior continued professional development). In this case, it may involve updating or recycling knowledge.

In any case, training should enable the officer to acquire the basic concepts of water policing in order to quickly become operational.

In general terms, the content should cover:

- The legislative context (national, local and international);
- The connection with different sector-specific legislation, for example on health, industry, town planning, agriculture, with regard to water management;
- Stakeholders and their roles in water resource management;
- Planning documents, particularly basin management plans, action programmes;
- Coordination methods for plans and programmes;

- Legislation on water, in particular the licence, authorisation or declaration system and its application in the field and jurisprudence;
- Conducting inspection operations and the administrative or judiciary repressive measures.

Moreover, a continued professional development system must be organised by the ministry or authority in charge of water policing to ensure knowledge in these fields is kept up-to-date.

Another way to improve the knowledge of the officers in question is to facilitate their access to forums and conferences organised by professional sectors connected to water (such as the irrigation symposium, the general meeting of quarry companies, the conference on drinking and sanitation water services).

The ministry in charge of water policing should facilitate meetings held on a decentralised basis – region, basin – to enable water police officers to discuss regulatory framework implementation practices.

Moreover, the ministry should produce training tools, for example in the form of guides, collections of practical experiences, didactic tools that can be used at any point by officers in charge of water policing. These tools should give inspectors an immediate answer to the questions of “how to record an observation”, “how to write a legally watertight official report”, “how should an official report be followed up” or “how to implement an inspection plan”, in any given situation.

It is important that inspectors are given a training module and in-depth knowledge on legal aspects, an understanding of the legal structure in the sector of water and aquatic environments, and criminal punishment versus administrative punishment.

Insert n° 5 - Task-based training of inspectors from the Ministry of the Environment and the Fight Against Climate Change in Quebec

Daniel Labrecque - Regional Director and Director of the Operational Support Bureau and Pecuniary Administrative Sanctions, Ministry of the Environment and the Fight Against Climate Change.

In Quebec, inspectors responsible for ensuring that environmental legislation is followed are grouped together within the Quebec Environmental Control Centre (CCEQ). This unit reports to the Ministry of the Environment and the Fight Against Climate Change (MELCC). As the profession of environmental inspector is not something that is taught academically through the education system, the CCEQ has established a compulsory training programme for its environmental inspectors and its Environmental Emergency operators.

Compulsory training programme for new inspectors

This programme comprises five major recurring training modules:

■ Handbook

This document aims to include the relevant information and training on the administrative and operational aspects of welcoming new inspectors.

■ **Module 1 – Basic classes and theory**

Module 1 is a theory-based module, after which participants read documents and watch training clips. With over 40 classes, it provides an understanding of the ministry and the basic skills required for the role of environmental inspector. This module covers the following aspects:

- General information (introduction to the ministry, values, mission, ethics, confidentiality, etc.);
- General basic knowledge (the key environmental issues in the sectors of water, air, soil, environmental emergency activities, health and safety in the workplace, etc.);
- Legal knowledge (powers of inspection, implementation principles for environmental legislation);
- The working process and dealing with non-compliance (inspection process, writing reports, coercive measures, etc.);
- Environmental sampling (resources, tracers, the directive on sample submission, etc.).

■ **Basic practical classes**

Module 2, which lasts 35 hours, comprises interactive classes directly linked to the work of inspectors, as well as simulations of inspections in different situations encountered at work.

■ **Sector-specific classes (training programme in development)**

These sector-specific training sessions provide the particular knowledge and skills required for inspection work in each of the four main business sectors subject to Quebec's environmental legislation (agricultural, water, industrial and municipal). Several formats are used depending on the subjects covered in order to optimise learning. These programmes therefore offer theory classes in the form of video clips, webinar training sessions and practical classes in large groups or with multiplying agents.

■ **Environmental sampling (in development)**

Environmental sampling is required for implementing legislation. Taking samples for laboratory analysis is important, as it enables inspectors to check compliance with environmental standards and, as a result, to prove any breaches of these standards.

Based on a sampling guide for environmental analysis purposes, training clips cover all the guidelines specific to each different sampling situation. It explains the sampling of water (surface, ground, drinking and recreational), soil, air (ambient and air emissions) and residual substances including dangerous substances.

■ **Compulsory training programme for Environmental Emergency operators**

In addition to their inspection work, some of the CCEQ inspectors also work for the Environmental Emergency service, which intervenes 24/7, 365 days a year. This role monitors compliance with the provisions of environmental legislation on accidental discharge situations. As part of this role, these inspectors ensure that, in the event of an accidental emission of contaminants into the environment, those responsible implement measures to minimise the consequences on the environment and public health.

To provide the abilities, knowledge and skills required, the CCEQ has established a compulsory training programme lasting a total of 3 weeks for new Environmental Emergency operators. In order to ensure the acquired knowledge is constantly up-to-date, this training must be repeated every five years by emergency operators.

The classes are as follows:

- Introduction to environmental emergencies (basic class);
- Emergency intervention in the event of oil spills;
- Emergency intervention in the event of dangerous substance spills;
- Practical training on environmental emergencies

Insert n° 6 - Training water police officers in France

Daniel Valensuela – INBO Secretariat

Agents who take up their position in a water police service obtain de-facto “legitimacy” to intervene in the assessment and administrative processing of cases.

However, in the majority of cases, they must acquire additional technical and legal skills depending on their previous career path.

Moreover, to carry out their judiciary policing role, they must be commissioned and sworn in. This procedure is contingent on undertaking a specific training course offered to the officers in question.

This course includes a basic curriculum, which is essential to officers not familiar with water policing, and additional training which provides more in-depth knowledge on specific technical aspects.

In order to be commissioned and sworn in, the officer must have taken the basic training course which covers the role of water policing. This week-long course is aimed at all officers from services tasked with water policing and must be undertaken within 6 months of taking up the position. It enables them to learn the basic concepts of water policing or update their knowledge.

The training explains the legislative context (European directives, Environmental Code), the connections between different sector-specific legislations (health, industry, town planning, etc.) and that of the water sector, stakeholders and their institutional role, planning documents and programmes of measures, contractual tools and water policing action plans. Legislation is examined through practical case studies and jurisprudence, both in terms of inspections and administrative or judiciary repressive measures.

At the end of the training, participants have the necessary knowledge to enable them to become

quickly operational in carrying out their water and aquatic environment policing missions.

The week-long intensive course must be undertaken within a year of taking up the position. The aim is for participants to understand the organisation and legal functioning of the water and aquatic environment sector, and to be able to record a breach of water and fishing legislation and establish the action to be taken following an official report.

A large number of skills development training course are also available to officers. As an example, they may cover:

- water policing practices in the case of collective and non-collective sanitation, stormwater harvesting, catchment protection, small hydroelectric facilities or in wetland situations;
- inspection practices regarding diffuse pollution and the various facilities, works and activities subject to legislation;
- help with using various support tools for water policing;
- general knowledge on hydrology, hydromorphology, ecological continuity and the way that aquatic ecosystems function;

These training courses are developed by the IPEC (the ministry's Interprofessional Education Collaborative) in partnership with specialist higher education establishments and various national and regional institutions.

Insert n° 7 - Training manual on water policing procedures in Senegal

Oumar Kane - Directorate of Water Resources Management and Planning, Senegal
Daniel Valensuela – INBO

In 2020, the Directorate of Water Resources Management and Planning of Senegal's Ministry of Water and Sanitation commissioned Mr Abdou Diouf, a legal expert on the environment, to produce a training manual on water policing procedures.

The aim was to improve the implementation of the Water Code and all the legal texts relating to water resource management, such as those on the environment, hygiene and sanitation, as well as those on criminal procedures.

This manual helps put together suitable training sessions in order to best train officers in charge of water policing before they are sworn in before the courts, and provides solid technical and legal foundations for the officers of ministries responsible for water and sanitation, the environment, health and other administrations, in particular the gendarmerie, police and justice system involved in water policing.

More specifically, it aims to build officers' skills in terms of investigation techniques, writing official reports and recording observations in the field.

The manual is used in support of training sessions for officers on the administrative and legal procedures of water policing.

Designed as a summary of different legal texts in force, as well as principles and best practice for integrated water resource management, the manual draws on information from document review and a situational analysis of officers' profiles and their strengths and weaknesses when it comes to water policing.

The manual is structured into three modules:

The introductory module is a bridging module on the elementary concepts of law. It is designed to make it easier for water police officers and any readers to use certain legal terms.

It places an emphasis on the definition and understanding of the law and its related concepts in society.

The module is divided into five sessions:

- Session I: definitions of law;
- Session II: hierarchic principle of standards in law;
- Session III: functions of law;
- Session IV: sources of law;
- Session V: branches of law.

The second module presents a summary of the provisions of the legal texts specific to water policing in Senegal.

It brings together all the relevant legal texts in force in Senegal, taken from the sectors of water, the environment, health, hygiene and criminal procedure, which water police officers can cite when performing their role, regardless of which administration they work for.

The module is divided into three sessions:

- Session I covers the definition and issues of water policing in Senegal;
- Session II covers the systems of use for the water resource;
- Session III covers the quantitative and qualitative protection of the water resource.
- The third module relates to the practical implementation of water policing.

It features three sessions:

- a session on the criminal framework for water policing in Senegal;
- a session on the roles and responsibilities of stakeholders;

- a session covering the techniques for writing and following up administrative documents relating to water policing.

Insert n° 8 - Educational tool in France: practical case study of a water policing administrative inspection

Daniel Valensuela

INBO Secretariat (as told by Jean-Baptiste Butlen, Office of Water Policing, France)

Practical case study: the “Blue Lagon”

You, Richard Lenoir, environmental inspector at the DDTM (Departmental Directorate of Territories and the Sea) in the Gironde, read in the media that visitor numbers to a leisure centre in your department have double this summer since the opening of a small water sports centre.

You decide to visit in order to check the conformity of the facility, as the owner has not recently filed an application under the “law on water”.

You intervene as a member of the administrative police, under the authority of the Prefect. This spot check is in line with the objectives of the inspection plan that has targeted the issue of a rising number of artificial lakes in the department, which are having an impact on the local environment and on the quantitative management of the resource.

Site Visit

There is a fence around the site. The owner of the “Blue Lagon”, Mrs Eléonor Vincent, refuses to grant you entry.

De retour au bureau, vous saisissez par courrier le Juge des Libertés et de la Détention (JLD) du TGI dans le ressort duquel est situé le « Blue Lagon » pour obtenir une ordonnance autorisant la visite.

Armed with this order from the JLD, you return to the site, on 30 September 2013, to conduct a visit. You observe that the lake is not compliant: the works were governed by the law on water under sections 1.3.1.0 (abstraction in a ZRE or water distribution zone) and 3.2.3.0 (Creation of a body of water). You seize the original documents required for the inspection after drawing up a list, countersigned by the owner. You will return them within one month.

Vous dressez sur le champ un PV de visite signé par vous-même et par le mis en cause. The original copy of the report is sent to the judge who authorised the visit as soon as it has been written. A copy of this document is given to the occupier of the premises. The report mentions the time frame and the avenues of recourse.

Writing the joint report of administrative non-compliance

De retour au bureau, vous rédigez le rapport de manquement administratif, transmis, sous couvert hiérarchique, simultanément au Préfet et à l'intéressée le 15 octobre 2013. You specify the case of non-compliance (conducting works without the authorisation required under the law on water) and give formal notice to remedy the situation under article L. 171-7 C.envir [L.216-1-1 C.envir].

Remember to respect the joint principle!

The forwarding letter, sent recorded delivery with acknowledgement of receipt, explains to Mrs Vincent that she can send her comments to the Prefect (for the attention of the head of the environment department at the DDT-M) within 15 days.

You also write an official inspection report, as conducting work without the authorisation required under the law on water is a crime under article L. 173-1 C.envir. This report is sent within 5 days of the close of the procedure to the Public Prosecutor. You mention in the liaison form that administrative action has been taken.

Signing the formal order for regularisation (AMD)

Mrs Vincent has not sent any comments on the report of non-compliance within the 15-day time frame that you have set.

The Prefect therefore has the power to formally order Mrs Vincent to remedy her situation. The situation does not require precautionary measures to be ordered.

The formal order for regularisation is signed by the Prefect on 1 November 2013.

It provides justification based on legal (non-compliance body of water in a ZRE) and factual elements (summary of the documents taken).

It reminds the individual that the administrative report of non-compliance has been the subject of an independent expert opinion;

It sets a deadline of compliance: Mrs Vincent must file an application (to comply or restore the site to its former state) within 3 months of the AMD notification to the concerned party;

It provides an informative reminder of the sanctions that apply in the event of refusal to comply;

It details the deadlines and avenues of recourse.

In the event of refusal to comply, the Prefect can impose a sanction

By 1 February 2014, Mrs Vincent has not filed an application in compliance and refuses to answer your telephone calls. As the deadline set by the AMD has expired, you assume that she is refusing to comply.

You propose that the Prefect impose an administrative sanction, a fine, along with a penalty.

The order imposing the fine and the penalty on Mrs Vincent:

■ est motivé : élément de droit (sanctions prévue au L.171-8) et de fait (refus d'obtempérer à l'AMD du 1er novembre 2013)

■ must be the subject of a joint exchange: you send it by recorded delivery with acknowledgement of receipt to the concerned party, inviting her to share her comments within a reasonable time frame (15 days);

The sanction must be proportionate: you justify the amount of the fine and the penalty according to the financial gain resulting from the non-compliant situation;

It details the deadlines and avenues of recourse. After the joint exchange, the order is signed by the Prefect on 1 March 2014. This order makes the demand for payment of the fine legally enforceable. The notification date of the order enacts the penalty. The court order taxing the partial or total payment of the penalty will come with a second order that will make a demand for payment legally enforceable.

3 - COMMISSIONING AND SWEARING-IN

- In order to carry out their duties effectively, water police officers must be authorised to seek out and record offences targeted by legislation.
- The terms of their authorisation to record breaches of legislation on water must be defined by legal texts.
- Officers must be commissioned by the government authority with a precise delimitation of the territory in which they can carry out their water policing mission.
- Commissioning should take place after verifying the experience and qualifications of the officer in question, and ensure that their skills are reinforced if required.
- Officers must be authorised by the judicial authority and sworn in, meaning they must take an oath before the judicial authority (such as the high court), a procedure that guarantees loyalty of action and the confidentiality of information.
- Inspectors and controllers must be authorised, meaning they receive official authorisation to conduct all inspection work and particularly to be able to enter private property and conduct the necessary investigations for water policing, such as taking samples, checking how facilities function and inspecting documents.
- In order to be valid, this authorisation must be covered by the country's judicial power.
- Given the interrelation between the field of water resources and the environment sectors, it may be prudent to have a single body of officials for environmental police (environmental inspectors) to improve coordination.

Insert n° 9 - Powers of inspection and investigation at the Quebec Environmental Control Centre

Daniel Labrecque - Regional Director and Director of the Operational Support Bureau and Pecuniary Administrative Sanctions, Ministry of the Environment and the Fight Against Climate Change

Legislative and administrative provisions authorising the inspectors and investigators of the Quebec MELCC to implement the Environmental Quality Act

Powers of inspection

In Quebec, inspectors responsible for ensuring that environmental legislation is followed are grouped together within the Quebec Environmental Control Centre (CCEQ), which reports to the Ministry of the Environment and the Fight Against Climate Change (MELCC).

These inspectors are officials designated for this purpose by the minister. Inspectors' powers are governed mainly by the Environmental Quality Act (LQE). To summarise, these inspectors can, at any reasonable time, enter a piece of land, a building, a vehicle or boat to consult

books, registers and files or examine the premises for the purposes of applying the Act and its legislation. The power to enter a place at any reasonable time includes impromptu powers of inspection, without making a prior appointment. They can also access houses, but under specific conditions and with specific restrictions given the issues surrounding the private lives of citizens.

By definition, inspections consist of actions in order to verify compliance with environmental legislation, without necessarily requiring any prior reason to believe that breaches of legislation have or are taking place. In order to carry out their inspection work, the law enables inspectors to perform various actions. For example, they can take samples, conduct excavation and drilling, photograph premises, take video recordings with sound or images, and save or copy a document or data, in any form. In performing these duties, each inspector must present on request a card signed by the minister's representative confirming that the person has been appointed to the role of inspector.

Aside from inspections of premises governed by the law, inspectors can also conduct inspections off site, which consists mainly of examining different kinds of documents and information in order to verify compliance with environmental obligations. For example, they may check the self-monitoring data of the concerned party in order to check that discharge standards are being complied with.

Failure or refusal to allow an inspector to conduct an inspection and interfering with their work permitted by law constitutes illegal interference under law and such acts can lead to administrative or criminal sanctions.

Powers of investigation

The main objective of investigators' work is to establish a person's criminal responsibility for an environmental offence and to collect evidence to this effect. As such, according to the environmental inspection process in Quebec, investigators' work generally begins from the moment when their inspection work gives them fair reason to believe in the existence of a breach of environmental legislation, the nature of which leads a regional director to direct the case in question to the criminal justice system.

Investigators for the MELCC service are grouped together in one unit, the Department of Investigations, which in turn is attached to the CCEQ. The powers of investigators are partially governed by the LQE. In particular, this specifies that as part of their work, investigators must call upon a judge to obtain authorisation to enter a site and carry out the actions required in order to collect evidence of an offence. The LQE also requires that the seizure of evidence, such as samples, be authorised in advance by a judge.

The work of investigators is also governed by the Code of Penal Procedure, which applies to the entire criminal process in Quebec. Moreover, as with the entire criminal process in Quebec, the work of investigators must be carried out in accordance with the Canadian Charter of Rights and Freedoms. As such, the Charter protects citizens' right to life, among other things, and limits the risks of unreasonable search and seizure by investigators.

Insert n° 10 - Commissioning water police officers in France

Daniel Valensuela – INBO Secretariat (based on documents provided by Michel Vignaud, Policy Officer, OFB Regional Directorate, Nouvelle Aquitaine)

The decree of 17 December 2019 on measures relating to the inspections and sanctions involved in water policing establishes the procedure for the commissioning and swearing-in of public officials or officers of local authorities tasked with protecting natural areas, in accordance with the provisions applicable to environmental inspectors, coastguards and nature reserve officers.

It also redefines provisions on the commissioning and swearing-in of officials and officers tasked with judiciary policing duties.

Commissioning is an act by which the government authority (environment minister) delegates to an officer, under terms strictly defined by the law, the mission of seeking out and recording offences committed in the water and aquatic ecosystem sector.

An officer is commissioned after their necessary technical and legal skills are verified and at the end of a compulsory training period, known as “training prior to commissioning”, which comprises two training modules delivered by CVRHs (Centres of Human Resource Development), one of which covers the repressive measures of the Environmental Code, and the other the scope of water and environmental policing. Officers must pass a final exam in order to be commissioned.

The commissioning is then made official by a commissioning decree produced by the Department of Water and Biodiversity.

In France, officers in charge of water policing are part of the corps of environmental inspectors. These environmental inspectors are mainly engineers, technicians and technical officers working for state departments and their public establishments such as the French Biodiversity Agency (OFB).

The government authority issues each of them with a commissioning card in their name, complete with their photograph and their mandate.

The commissioning delimits the area in which the water police officer will practise.

To carry out the duties of judiciary police, the commissioned official or officer must take an oath before the high court of their administrative residence, a process known as swearing-in. This oath is a solemn commitment by the official to carry out their duties to the best of their abilities and to remain objective in raising their observations.

A record of oath is produced by the court, a copy of which is given to the individual in question. The officer does not have to take another oath if they change their post, administrative residence, corps, rank or job title or their specialism.

The swearing-in is also recorded on the commissioning card. A record of this card is kept at the court that has jurisdiction over the inspector’s area of work.

4 - NON-STATE-OWNED RIVERS

- Legislation must make a distinction between state-owned and non-state-owned bodies of water in order to have suitable legislation depending on the water ownership system. Non-state-owned rivers are those that are not classed as belonging to the public domain; as such, they belong to the private domain, which imposes obligations on their riverside residents.
- In the case of non-state-owned rivers, the law must establish rights and obligations such as the obligation of regular maintenance, the provision of the water and riverbed materials, the structures located there, the conservation of the water to ensure it can flow freely, the circulation of crafts and boats, residents' fishing rights and works on the river.
- Legislation should provide for reconciliation of the interests of different owners and water usage rights holders.
- The scenario of an abandoned river or a re-routed river must be included in the regulations, particularly with regard to the owners of the former riverbed and those of the new one.
- Works to restore rivers must be codified, particularly with regard to the conditions.
- The case of rights of way for the execution of works must be provided for, specifying the procedure and the role of the government authority in charge of water policing.
- In certain circumstances, the state must be able to exercise its policing power by modifying authorisations or permissions granted in relation to structures built on rivers; for example, this may be the case in order to prevent floods, or in the interest of public hygiene (drinking water).
- It is advisable for local authorities to be able to act on behalf of residents, for the purposes of the general interest, to carry out maintenance operations, in accordance with the law.
- Depending on the country's legislation, rivers can be classed as state-owned (meaning they belong to the public domain or the state) and non-state-owned (meaning they belong to private owners).
- In the latter case, the country's law must establish the rights and obligations relating to these non-state-owned rivers, such as the limits of the resident's property, the responsibility to maintain the riverbed and banks, the free flow and availability of the water, the maintenance of materials that make up the riverbed, the rules regarding structures located on the riverbed, the circulation of crafts and boats and residents' fishing rights.

Insert n° 11 - Legislation on non-state-owned rivers in France

Daniel Valensuela – INBO Secretariat

Regarding non-state-owned rivers, French law governs the rights and obligations of residents, water conservation, the maintenance and restoration of the environments.

Residents' rights

Residents only have the right to use the running water that borders or runs through their property within the limits of the law.

The riverbed belongs to the owners on both banks, and in the event of different owners on both banks, each of them has half ownership of the bed.

Each resident has the right to take all the natural products (silt, sand, stones, etc.) from their half of the riverbed as long as they do not affect the water regime and carry out maintenance in accordance with the regulations in force.

When the river abandons its bed, the owners of the new riverbed are obliged to accept the course of the water without indemnity and the owners of the former or new bed can, within the following year, take measures to restore the former course. These restoration works can only be carried out if these measures do not obstruct operations to manage this river in order to implement a declaration of general interest.

The government can establish rights of way for the execution of works, and the operating and maintenance of structures on this river.

Water conservation

The policing of non-state-owned rivers conducted by the government should ensure that the waters flow freely.

The prefect can issue a decree, after a public interest investigation, to reconcile the interests of the water's various owners and usage rights holders, by approving a document known as the general river regime.

The resident landowners of a non-state-owned river can only conduct works if the works conducted cause no damage to the river flow or to neighbouring property.

The state can exercise its policing powers by revoking or modifying the authorisations or permissions granted for the establishment of structures or factories on these rivers in the following cases and without indemnity:

- in the interest of public hygiene, and particularly when this revocation or modification is necessary for the drinking water supply,
- to prevent or stop flooding,
- in the event of structures establishing or regulating a body of water or an establishment that has not been maintained for over 20 years; any interested public authority or public establishment can, upon default by the authorisation holder, and on their behalf, following formal notice by the prefect, conduct works resulting from the revocation or modification of the permission or authorisation and pursue reimbursement for these works from the permission or authorisation holder,
- to implement the objectives and strategies of the SDAGE, on certain classified rivers, when the structures or factories are run in such a way as to prevent the preservation of migratory species that live alternately in fresh water and salt water.

Farmers or owners of mills and factories, even those with authorisation and a legal existence, are responsible for the damage caused to the paths and properties that surround them.

With the authority of the prefects, mayors can take all necessary measures to police rivers.

Finally, the diversion of water from a non-state-owned river, spring or groundwater, undertaken for general interest purposes by a public authority or any other public establishment, is authorised by a deed declaring the public utility of these works.

Maintenance and restoration of aquatic environments

The resident landowner is obliged to conduct regular maintenance of the river with a view to maintaining the free and balance flow of the water, the allow the water to flow naturally and to contribute to its good ecological state or its ecological potential, in particular by removing log-jams, debris and siltation, by pruning or cutting back vegetation growing on the riverbanks; the localised moving or removal of sediment is permitted as long as this does not alter the longitudinal and transversal profiles of the flood stage.

In certain circumstances, regular maintenance can be carried out in accordance with former regulations and local uses (particularly waterweed cutting).

Local authorities can stand in for residents and, after a declaration of general interest, organise grouped maintenance operations, which require an authorisation request as part of a multi-year management plan.

These operations are scheduled as part of a hydrographic unit. They must comply with the law, and in particular be compatible with the SAGE (water development and management scheme),

The request must include:

- demonstration of the hydrographic cohesion of the response unit,
- if applicable, the list or natural or artificial obstacles, excluding permanent structures, that are detrimental to the safety of non-motorised watersports,
- the multi-year maintenance programme,
- if applicable, the means for processing any sediment moved, removed or re-suspended in the river.

These regular grouped maintenance operations may be designed to maintain a specific use of the river, canal or lake (boating, etc.).

The multi-year execution authorisation for the plan is granted by the prefect for a minimum duration of 5 years.

Circulation of crafts and boats

In the absence of a SAGE, non-motorised leisure watercraft can circulate freely as long as residents' rights are respected.

After consulting with the concerned parties, the prefect can regulate the circulation of non-motorised leisure watercraft or the practice of water-based tourism, leisure activities and sports on non-state-owned rivers in order to protect them.

In this case, the civil liability of residents cannot be invoked in the event of damage caused by the circulation of non-motorised leisure watercraft or the practice of water-based tourism, leisure activities and sports.

The circulation of motorboats can be prohibited or regulated on non-state-owned rivers for reasons of safety, hygiene or at the request of residents.

Inspections

If resident landowners do not fulfil their maintenance obligations, the municipality, group of municipalities or responsible syndicate can, after issuing formal notice without response, conduct this maintenance at the expense of the individual in question.

The water police can exercise their powers to demand the maintenance of non-state-owned rivers.

5 - AUTHORISATION AND DECLARATION

- A system of authorisation for operations with a potential impact on the water and the aquatic environment must be established by law and implemented effectively. The system can function on three levels: for a low or negligible impact, no agreement required; for a medium impact, declaration required; above a certain level of impact, authorisation required.
- The operations in question must relate to facilities, structures, works and activities that can alter rivers, lakes and aquifers or have an impact on the aquatic environment.
- For operations with a significant impact on the water resource, an impact study is recommended.
- Operations governed by this system and therefore by the water police must be listed in detail through specific regulations, which must specify the following conditions: volumes in question, thresholds, surface areas, length, etc.
- At the same time, it is advisable to provide detail of the procedures implemented to obtain the authorisation or submit a declaration.

The authorisation system or regime – also known as the permit system – is necessary for several reasons:

- To precisely understand the activities that impact the water resource, both quantitatively and qualitatively, as well as the type of resource affected;
- To determine the overall pressure on the water resource within a given area;
- To have the legal means to monitor any abstraction, polluting discharge and activities “with an impact”;
- To be able to limit abstraction, polluting discharge and activities “with an impact” according to the qualitative and quantitative conditions of the resource and the likely development of these conditions;
- To be able to prohibit excessive use and an excessive number of developments and facilities with a significant impact on the water resource.

As each catchment basin has its own characteristics, it is advisable that the authorisation system function on a local level (basin, sub-basin, local government entity, etc.) and draws on local hydrological monitoring centres, all governed by national legislation.

Naturally, the authorisation system must cover all uses, meaning all types of abstraction of the resource, both surface and groundwater. It must also cover discharge into the environment. Moreover, the system must also cover developments, works and facilities, either in the aquatic environment or nearby, which are likely to cause alterations to this aquatic environment. For example, agricultural drainage work, a vast deforestation operation in the basin, the construction of a large building/s or infrastructure that renders a large surface impervious, and dragging and dredging work in a river are some of the situations to be analysed as part of an authorisation system.

To take the levels of impact into account, it is advisable to have three levels of action: the level of authorisation itself, an intermediary declaration level when the impact is judged to be tenable

and, for negligible impact, no declaration. Consequently, the authorisation system should include a detailed description of the administrative process (authorisation file, declaration file) and the range of declaration or authorisation thresholds to apply to each type of activity and use.

The declaration system thereby enables everything happening on the water resource in question to be more precisely monitored, without having to limit minor activity.

Insert n° 12 - Authorising the clearing of deadwood and plant waste from riverbeds and combating invasive vegetation

*Javier Díaz-Pegañón Jiménez
Water Commissioner, Tagus Hydrographic Confederation, Spain*

In a large number of Mediterranean rivers, the flow during the summer months is significantly reduced, even non-existent. The vegetation that grows naturally on the riverbed during periods with low water levels or very low flow proliferates more than usual due to different man-made reasons, including water abstraction which further reduces the flow, water pollution by fertilizer from agricultural activity or urban centres, as well as the lack of shade over the rivers coupled with the sunshine on the riverbed and the growth of heliophilic species, etc.

Residents believe this to be a dangerous situation as they feel that the river will be unable to take the flow in the event of a rise in the water level and that there is a flood risk for the surrounding land. They therefore pull up the vegetation with the aim of restoring the riverbed to its former state.

The risk of these actions is that, far from solving the problem, it can exacerbate the consequences and cause serious damage to the public water domain if conducted improperly (dragging, heavy machinery, pulling up vegetation).

As such, and given the high number of requests (nearly 300 a year), a system of authorisations has been implemented for this type of work, establishing a list of conditions that must be met in order to minimise structural damage to the riverbed.

These authorisations are processed quickly as they do not require any specific study to be submitted or intermediary procedures to be implemented, which could delay their being granted.

The authorisations granted are as follows:

Determination of the request

- The planned actions, as described in the documentation provided, are as follows:
- Clearing annual herbaceous and shrubby vegetation, pulling up dead trees or those in a poor state, maintenance pruning for trees, pulling up invasive vegetation and removing waste on the beds and banks of different rivers where they run through the municipality of xxx (or indicate the sector with UTM coordinates or by polygon and parcel).

- These activities are governed in the context of special common uses that require prior administrative authorisation, given that they mainly cover the public water domain, and are regulated by articles 72 et seq. of the RDPH (Public Water Domain Regulation).

Considerations

- In accordance with article 53 of the RDPH, the criteria for granting this authorisation are directly linked to environmental protection.
- As such, given the requirement established in article 72 of the RDPH, it is considered that the proposed actions do not carry any risks for the environment or are unlikely to damage it, insofar as they will not have any significant impact on the ecosystems linked to the river and its banks, and on the condition that they are conducted in compliance with the requirements set out in the subsequent paragraphs.
- Consequently, it is not necessary to submit a specific study to assess these effects, in accordance with the provisions of article 236 of the RDPH, as long as these actions meet the request criteria and in no way exceed that which has been authorised by the public water domain.

Processing the request

- Given that the definition of the proposed actions does not require any plans to be submitted and the activity does not involve the use of the public water domain or its property, which require the principle of competition to be implemented in accordance with the provisions of article 53 of the RDPH, a public consultation procedure is not necessary.

Decision

- In view of the request and in accordance with its powers, the Tagus Hydrographic Confederation has decided to authorise xxx to conduct the following actions:
- Clearing annual herbaceous and shrubby vegetation, pulling up dead trees or those in a poor state, maintenance pruning for trees, pulling up invasive vegetation and removing waste on the beds and banks of different rivers where they run through the municipality of xxx

Terms

- This authorisation is granted for a period of 12 MONRHS from the day after the notification of this decision, on the condition that the Tagus Hydrographic Confederation be informed of the start and completion dates of the works with one week's notice for the start of the works and one week after the completion of the works.
- The works will be executed in line with the documentation supplied, as long as this is not modified by these terms. Nevertheless, the Tagus Hydrographic Confederation can authorise minor modifications in order to improve the works, without involving any change to the content of the authorisation itself.
- These actions will be implemented using manual means. In the event of the use of mechanical means to conduct certain work, on an exceptional basis, these must not affect the riverbed or its structure, nor must they cause alterations to the river system. If these mechanical means include the use of heavy machinery, access to the riverbed must be avoided and the works must be

conducted from the banks, taking special care not to cause any erosion or alteration to the land that forms the banks.

- In any case, the vegetation on the riverbed and its banks should not be removed in its entirety. The works shall be limited to the selective pulling-up of annual herbaceous or shrubby plants that can hinder water flow, invasive species or dead tree stumps and branches.
- The use of herbicides or any other type of chemical substance to remove or control vegetation is prohibited. The use of any other materials, structures or substances that those already present on the riverbed is also prohibited.
- Under no circumstances can levelling work, which could alter the section of the riverbed or its configuration be carried out, such as the removal of sediment or its distribution on the riverbed itself. As such, the morphology of the river must be maintained in its entirety and no alterations must be made to its bed or the slopes of its banks. Consequently, no sheet piles or embankments may be created.
- Once the works are complete and even in the event of early completion, the authorised individual is obliged to leave the riverbed with a normal state of flow. As such, the area must be cleared of any remaining products and the plant waste resulting from the work must not be left in the public water domain or in the policing area of its banks (100-metre-wide strip adjacent to the riverbed). This must be removed in order to be processed appropriately.
- This authorisation is granted solely and exclusively for the execution of the aforementioned works and does not entitle the holder to use the water, discharge effluent or conduct any activity of any nature that is not expressly mentioned in this document.
- The Tagus Hydrographic Confederation is responsible for the inspection and supervision of authorised works and can invoice the authorised individual with any costs incurred to this end.
- Under no circumstances will the administration be responsible for any damage to the works caused by increased water levels, whether ordinary or extraordinary.
- This authorisation does not grant right of passage over private roads or property, nor does it entitle the holder to deposit rubble or any other kind of material on this property.
- In accordance with legislation on water, this authorisation refers to criteria and terms strictly specified in the revised text of the law on water and the regulations governing the public hydraulic domain, to the exclusion of other issues relating to other areas of jurisdiction such as forests, the environment or species control, which fall under other administrations.
- As such, this authorisation is independent from any other authorisation that may be granted by the central, regional or local administration.
- This authorisation is contingent on the procurement of any necessary authorisation that must be granted by the environmental agencies of other relevant administrations, where applicable.
- The authorised individual is obliged to comply with the provisions of the law on freshwater fishing for the conservation of species, as well as the applicable environmental legislation.
- This authorisation is granted without prejudice to third parties and property rights.

- The authorised individual shall be liable for any damage that may be caused due to the execution of the works.
- This authorisation may be revoked in the event of the breach of any of these terms and in the cases provided for by the applicable legislation, in accordance with applicable procedures and provisions.

Insert n° 13 - Authorising water use in the Federal District, Brazil

Jorge Enoch Furquim Werneck Lima - Director of the ADASA, Brazil

Vinicius Fuzeira de Sá e Benevides – Head Administrator of Water Resources at the ADASA

Gustavo Antonio Carneiro – Head Administrator of Water Resources at the ADASA

The Regulatory Agency for Water, Energy, and Basic Sanitation of the Federal District of Brazil (ADASA) has the core mission of regulating and promoting both sustainable management of water resources and universal access to good-quality public sanitation services. ADASA has a comprehensive agenda in the water sector, managing all water resources in the Federal District. The Agency is responsible for granting water permits for surface and groundwater uses, with the aim to balance demand with availability in all watersheds within its jurisdiction.

The Federal District is situated in a high plateau with roughly 5.800 km² of surface area and a population of almost three million. Although with generous rainfall volumes, the natural drainage network is composed mostly of streams and small rivers. The ever-growing population (both vegetative and migration-driven growth) has put a lot of pressure in the management of the water resources. More than 30 thousand irrigated hectares also compete with human supply for securing their water demand. Industrial activity is quite small and do not play a relevant role in the total water demand.

Under Brazilian legislation, all water bodies are owned either by the Union (transboundary rivers) or the States and the Federal District (non-transboundary surface water bodies and groundwater). Due to a formal agreement with the National Water Agency (ANA), ADASA manages all water bodies within the Federal District and authorizes their uses, regardless of their legal jurisdiction (owned by the Union or the Federal District). Law enforcement activities in transboundary rivers within the Federal District, though, are carried out jointly by the two agencies.

ADASA has enacted several regulations to discipline the process of granting water permits to all uses and activities that may cause qualitative or quantitative variations in the Federal District water bodies. According to Resolution n° 350/2006, ADASA grants water permits to surface and groundwater abstractions, which can be used to human supply, crop irrigation, livestock farming, industry, mining, commercial activities, and other uses. Surface water abstraction by water tankers, diversion canals for irrigation, wastewater and stormwater discharges are also subject to water permits. Finally, other interventions that are not related to consumptive water use, nor to water quality degradation, but affect the water flow regime, such as dredging activities and dam

construction, are subject to water permits as well. All water balances are made on the watershed level, for each one of the 41 hydrographic units that form the Federal District.

Some uses are deemed insignificant and therefore are exempt from a water permit, however they must still be registered. In the Federal District, the thresholds for insignificant uses are up to 1 L/s (one liter per second) for surface water, and 5 m³/day (five cubic meters per day) for groundwater.

Larger dams, new residential areas, major irrigation projects, and other important interventions may be granted a provisional water permit, with the intent to guarantee and reserve water availability, for a limited time, while the project is developed. It must be noted, however, that a provisional water permit does not grant the permittee the right to develop the project, which might be subject to other licenses and permits, but only secures the requested water availability within the basin water balance.

As per the water permit request procedure, ADASA provides all forms online and gives the applicant both the options to fill out the forms in person at the Agency headquarters, or to send them by e-mail. The request will first go through a stage of document screening, and then will be sent to technical analysis.

According to the current resolutions, permits for surface water use are capped by 80% of the reference low-flow statistic (Q7,10, Q90, Q95, or other). Exceptions are made in watersheds that are used for human supply, in which permits are capped by 90% of the low-flow statistic. On the other hand, when dams are present, permits are capped by 80% of the regulated flow.

In critical watersheds, where higher demands might trigger conflicts over water use, permits for single users cannot exceed 20% of the grantable flow. This rule might be flexed though, according to the land area of the applicant. When the total demand in a watershed is close to or even surpasses the total grantable flow, water allocation measures are put in place. All water users are engaged early in the negotiation process of water allocation, prior to the dry season, when the usage rules are fixed to be later overseen by Adasa during the low-flow months. The early process of water allocation is supported by hydrological simulations, which allow the water users to anticipate their investments and adjust their crop plantation planning, thus minimizing potential losses due to water scarcity.

Regarding groundwater use authorization, ADASA has enacted key resolutions, based on robust hydrogeologic studies, that identify groundwater reserves and aquifers throughout all the Federal District territory and establish the renewable reserves and the percentage of the permanent reserves that may be extracted under safe limits.

It should be highlighted that the Federal District is, assuredly, the Brazilian federative unit with the densest hydrological monitoring network, even for international standards, which include rainfall, waterflow, dam levels, water quality, and groundwater variables.

In summary, the water use authorization system of the Federal District was constructed over a very detailed scale and is supported by a dense network of hydrological monitoring stations. When compared to other authorization frameworks in Brazil, ADASA's water permit system stands out mainly due to the following aspects:

- water permits are granted in a seasonal basis, according to monthly water balances and respecting the necessities of each user;

- ahead of other States, ADASA already authorizes the operation and oversees the performance of stormwater discharges into receiving water bodies;
- the Federal District has a complete map of groundwater reserves and aquifers that orients the estimation of grantable water either by hydrological unit or by aquifer extension;
- in critical watersheds, where water use conflicts are more likely to happen, surface and groundwater water permits are assessed in an integrated way;
- permits for wastewater discharge are granted based on the target water quality established for the receiving bodies for 10 years ahead;
- by implementing a Project called ADASA 4.0, the Agency has been achieving significant progress in the transition to geotechnologies, Internet of Things (IoT), Machine Learning, Big Data, Cloud Programming, Analytics and other tools;
- all these achievements have enabled ADASA to host and operate one of the best Water Resources Information Systems in Brazil, which in turn provides more consistency to the process of water use authorization in the Federal District.

Figure 1 shows ADASA's Water Permit and Registration Map, updated in the first semester of 2020, comprising roughly 2.321 records of surface water uses and 7.123 records of groundwater uses.

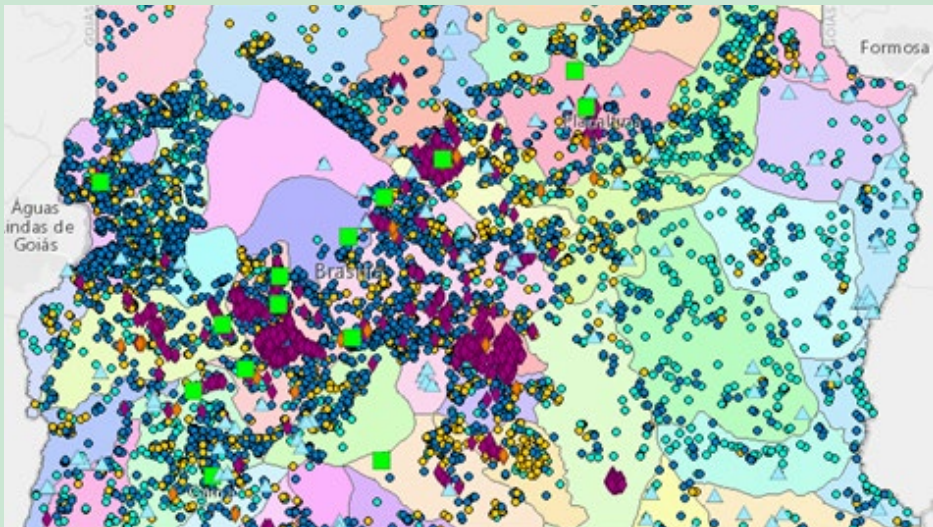


Fig.1 - Water Permit and Registration Map of the Federal District, Adasa, 2020 Carte des permis relatifs à l'eau et des enregistrements du District fédéral, Adasa, 2020 (<https://gis.adasa.df.gov.br/>)

Insert n° 14 - List of facilities, works and activities that have an impact on water and aquatic environments and fall under the water policing declaration/authorisation system, France

Daniel Valensuela – INBO Secretariat

To ensure balanced and sustainable water resource management, as provided for in the Environment Code, the legislator has submitted the facilities, works and activities (IOTA) for environmental authorisation (Art. L.214-3) for operations liable to:

- Pose dangers to public health and safety,
- Damage the free flow of water,
- Reduce the water resource,
- Considerably increase the risk of flooding,
- Severely alter the quality or diversity of the aquatic environment.

IOTAs that do not pose these dangers are subject to declaration. They must nevertheless comply with general rules for preserving the quality and distribution of surface, ground and sea water within the limits of territorial waters, issued pursuant to article L. 211-2.

Legislation defines the operations (categories) subject to declaration or authorisation, according to their impact, as well as the trigger points for the declaration and authorisation systems, which are set according to the degree of impact. Each category refers to a type of operation with an impact on water and refers to decrees with general or specific directives. The categories cover all the activities, facilities or operations that have an impact on the water resource. A total of 42 categories are defined covering abstraction, discharge and impacts on the aquatic or marine environment.

A few examples of the categories listed in the “Law on water” (article R214-1 of the Environment Code)

D: declaration – A: authorisation

Category	Title	A or D
1110	Sounding, drilling including pumping tests, creating wells or underground structures, not intended for domestic use, created for the purposes of research or surveillance of groundwater or to conduct temporary or permanent abstraction of groundwater, including in the accompanying groundwater	D

Category	Title	A or D
1120	<p>Permanent or temporary abstraction resulting from a drilling site, well or underground structure in an aquifer system, to the exclusion of accompanying groundwater, by pumping, draining, diversion or any other procedure, the total volume abstracted being:</p> <p>Greater than or equal to 200,000 m³/year:</p> <p>Greater than 10,000 m³/year but less than 200,000 m³/year:</p>	<p>A</p> <p>D</p>
1210	<p>With the exception of abstraction agreed upon with the beneficiary of the flow affected under article L. 214-9 of the Environment Code, abstraction and facilities and structures that enable abstraction, including by deviation, in a river, its accompanying groundwater or in a lake or canal served by this river or groundwater</p> <p>With a maximum total capacity greater than or equal to 1,000 m³/h or 5% of the flow of the river or, failing that, the overall flow rate to the canal or lake:</p> <p>With a maximum total capacity between 400 and 1,000 m³/h or between 2 and 5% of the flow of the river or, failing that, the overall flow rate to the canal or lake:</p>	<p>A</p> <p>D</p>
2110	<p>Treatment plants in conurbations with non-collective sanitation that have to treat a gross load of organic pollution under article R. 2224-6 of the General Code of Territorial Collectivities</p> <p>Greater than 600 kg of BOD₅:</p> <p>Greater than 12 kg of BOD₅, but less than or equal to 600 kg of BOD₅:</p>	<p>A</p> <p>D</p>
2150	<p>Discharge of rainwater into fresh surface water or onto the soil or subsoil, the total surface area of the project, increased by the surface area corresponding to the part of the natural basin where flow is intercepted by the project, that is:</p> <p>Greater than or equal to 20 ha:</p> <p>Greater than 1 ha but less than 20 ha:</p>	<p>A</p> <p>D</p>

Category	Title	A or D
3240	<p>Drawdowns of bodies of water upstream from dams, where the height is greater than 10 m or the volume of the reservoir is greater than 5,000,000 m³:</p> <p>Other drawdowns of bodies of water with a surface area greater than 0.1 ha, excluding closure operations for waterways, excluding fish farms mentioned in article L.431-6 of the Environment Code, excluding bodies of water mentioned in article L.431-7 of the same code:</p> <p>Periodical drawdowns of bodies of water mentioned in the latter are subject to a single declaration.</p>	<p>A</p> <p>D</p>
3310	<p>Draining, impounding, creating impervious surfaces, backfilling wetlands or marshlands, the drained or impounded area being:</p> <p>Greater than or equal to 1 ha:</p> <p>Greater than 0.1 ha but less than 1 ha:</p>	<p>A</p> <p>D</p>
5110	<p>Reinjecting water abstracted for geothermal energy into the same groundwater, pumping out mines and quarries or for civil engineering works, the total reinjection capacity being:</p> <p>Greater than or equal to 80 m³/h:</p> <p>Greater than 8 m³/h but less than 80 m³/h:</p>	<p>A</p> <p>D</p>

6 - INTERVENTION IN THE EVENT OF AN ACCIDENT OR INCIDENT

- The law must provide for accidents or incidents, particularly in the event of a pollution accident. The chain of intervention, starting from first knowledge of the accident, must be clearly established and implementation drills should enable it to be tested.
- Legislation must specify the responsibilities of the person, operator or owner behind the incident or accident.
- It must specify the role of the public authorities in the event of an incident or accident, such as setting out the measures to be taken in order to stop the damage ascertained.
- The water police service must be able to ensure all possible measures are taken to put an end to the cause of danger or damage to the aquatic environment, assess the consequences of the incident or accident and remedy it.
- It must have the legal power to act in an obligatory or even restrictive way with the support of law enforcement if necessary.
- It must be able to take appropriate legal action (official report if an offence has been committed).
- The population's right to information should be provided for using appropriate means and at the responsibility of the relevant public authority and elected officials.
- An accident or incident in the water sector may mean accidental pollution, or be linked to an extraordinary climate event leading to extreme drought or flooding.
- The management of accidents and crisis cannot be improvised. It must be organised in crisis-free time by establishing crisis plans and action protocols developed in coordination with water stakeholders and user representatives. Virtual exercises should enable these plans to be tested and their efficiency to be improved.
- Once drawn up, the plans must be widely publicised or even taught, so that once an accident or crisis happens, actions are implemented as efficiently and quickly as possible in a coordinated framework.

Insert n° 15 - Intervention in the case of an accident or incident: The example of the Environmental Emergency Service in Quebec

Daniel Labrecque - Regional Director and Director of the Operational Support Bureau and Pecuniary Administrative Sanctions, Ministry of the Environment and the Fight Against Climate Change

Managing intervention in an environmental emergency relies on several factors. Environmental incident response planning plays a key role in the efficiency and speed of action when faced with such an event. In accordance with its mission, the Ministry of the Environment and the Fight Against Climate Change (MELCC) has set up an operational unit to manage environmental emergencies and a legislative framework, the key objectives of which are prevention, protection, improvement, restoration, development and management of the environment.

Context and legislative definitions

The concept of environmental emergency is defined as “any situation that jeopardises, affects or is on the verge of deteriorating the quality of the water, air, soil, wildlife, wildlife habitats or environment in which human beings live and which requires immediate intervention”. The Environmental Quality Act (LQE) presents the provisions for protecting the environment and safeguarding the living species that inhabit it. Among its general provisions, section 20 of the LQE states that “No one may release or allow the release into the environment of a contaminant in a quantity or concentration greater than that determined in accordance with this Act. [...]”.

Moreover, anyone “responsible for the accidental release into the environment of a contaminant referred to in section 20 must, without delay, stop the release and notify the Minister” as well as collect the released contaminant “without delay and remove any contaminated matter that is not cleaned or treated in situ”.

The Ministry has a Ministerial Emergency Plan (PUM) which allows the authorities to establish an entity dedicated to environmental emergency management, the Environmental Emergency service. As such, the Ministry is able to ensure that all possible measures are taken to put an end to the cause of danger, to minimise damage to the environment and to quickly restore compliance. With a view to governmental transparency, means of communication are in place, namely the publication of registers of environmental emergency intervention and press releases.

Quebec Environmental Emergency

Environmental Emergency falls under the Quebec Environmental Control Centre (CCEQ) and includes 17 regional teams featuring 9 emergency measures regional coordinators and around one hundred operators across all of the regional directorates of the ministry. Using an alert system that operates 24/7, 365 days a year, Environmental Emergency is able to respond at any time to situations in which it is required. The team can also consult or send specialists from all the administrative units of the MELCC, particularly for more major interventions, in order to devise or implement solutions to the environmental problems resulting from the emergency

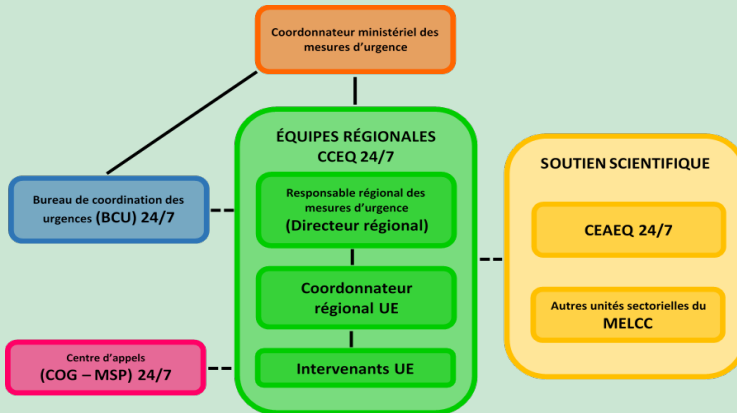


Figure 1. Organisational structure of Quebec Environmental Emergency
 CEAEQ : Centre d’expertise en analyse environnementale du Québec
 (Centre of Expertise in Environmental Analysis)
 COG : Centre des opérations gouvernementales (Government Operations Centre)
 MSP : Ministère de la Sécurité publique (Ministry of Public Safety)

Environmental emergency categories

In order to properly plan and organise emergency interventions, a classification system for emergency situations has been established, with 3 categories that reflect the severity or extent of the event.

- Category 1 covers the majority of Environmental Emergency interventions, meaning those for which the mechanisms of intervention are well known and established.
- Category 2 events are more complex and require specific means of intervention to be implemented.
- Category 3 environmental emergencies, meanwhile, are disasters.

In the event of a category 2 or 3 emergency, a press release is automatically produced and disseminated by the ministry.

The powers of Environmental Emergency operators

Like inspectors, operators have the power to visit or inspect a place in order to check that the LQE is being implemented. They can ask anyone responsible for an incident for the information they require to perform their duties.

In certain exceptional cases, the ministry carries out work required to protect the environment, for example when the person responsible for a spill is unknown.

The LQE allows the ministry to claim back the costs incurred by measures taken to limit the impacts of an environmental event.

7 - INSPECTIONS

- The time water police agents spend on inspections must be specified in relation to the administrative time spent processing requests.
- Inspections must cover not only water (quantity and quality), but also the facilities, structures and works relating to it.
- The programme must be approved by the local administrative authority, including the judiciary authority.
- There are two types of inspections: document inspections or physical inspections.
- When conducting inspections, coordination between different services should be prioritised and facilitated, particularly when the activity being inspected is governed by several regulations. Support from the gendarmerie or national police may be required for certain inspection operations.
- It is recommended that a water police inspection guide be produced and supplied to all relevant officers.
- All inspections must be followed by a report, a working document that enables the service to ascertain compliance with the provisions of the authorisation and/or declaration and keep a record of the inspection in its archives.
- All inspections must be followed by written information explaining the outcome of the inspection to the petitioner.
- In the event of an offence, the judicial procedure of an official report must be triggered according to the terms defined by law.

The inspection system must draw on precise rules and a clear organisation based on the operational plan in a local administration.

This latter point is a way to take local specificities into account when conducting the inspection and, consequently, to improve the efficiency of inspections, as they will target local priorities.

An annual inspection programme must be established jointly with all the relevant services (see chapter 8).

Surveillance and inspection officers (environment officers, river guardians, environment police) make up the local brigade that acts in the field to identify and record breaches of the water code through official reports, conducting any sealing required, record complaints and follow them up and take various readings (water meter, sampling for quality analysis) in strict accordance with the law.

Inspections must cover both the quantity and quality of the water. In terms of volumes, ways to measure the quantities used (water abstracted or pumped, surface and groundwater, discharged water, flow, stored water) must be installed; this is especially the case for water meters, which guarantee precise and reliable information on the volumes at stake, as long as these tools cannot be tampered with in any way. Basin organisations can determine the means of inspection for anything that falls within the public domain and establish inspection procedures.

Inspections must be conducted in the field in a suitable manner and with reliable and indisputable

readings and analyses. In many cases, inspections should lead to concrete action, such as actions to limit or reduce pollution, or reduce damage and its impact on the environment.

Conduction inspections and checks is always a delicate process that can cause tension with users. In order to provide support to the relevant officers, it is recommended that a water police inspection guide, or more generally an environmental inspection guide with advice, be produced.

This guide may be a useful tool for training inspection officers. It may also be used in communications with the public or target audiences.

Insert n° 16 - Inspection of the dams safety in the Tagus Basin in Spain

*Javier Díaz-Pegañón Jimenez
Water Commissioner, Tagus Hydrographic Confederation, Spain*

Dam safety

En 2015, la Confédération hydrographique du Tage a déployé des efforts importants pour réaliser un inventaire des barrages privés présents dans sa zone géographique. To this end, the information provided by the supply concessions in the basin was used as the point of departure, as well as data collected using satellite imagery during the identification process.

This task falls within the framework of the surveillance and inspection activities carried out by water police on private infrastructures (dams), in accordance with the applicable legislation on dam and reservoir safety.

Administrative status of dam safety

■ 1.- Inventoriable dams

In Spain, the legislation applicable to dam safety is based on Title VII of the legislation on the public water domain, as amended in 2008, which specifies that the central government has jurisdiction over the safety of dams, reservoirs and basins located in the public water domain in cross-community hydrographic districts, as well as when they represent infrastructures of general interest to the state, as long as it is responsible for operating them. It also states that owners of dams and basins that already exist, are under construction or due to be constructed, are obliged to request that they be classified according to the potential risk of failure or a major fault. The 2008 amendment also sets the minimum limits for classifying a dam: Owners of dams and basins higher than 5 metres or with a capacity greater than 100,000 m³, whether private or public, existing, under construction or due to be constructed, are obliged to request that they be classified and recorded, and will therefore be subject to priority surveillance and inspection.

■ 2.- Owners' obligations

According to the aforementioned amendment to the legislation on the public water domain, the

owners of a dam are responsible for its safety. Among their obligations are the following:

Owners must have the necessary human and material resources to guarantee that their safety obligations are fulfilled.

Owners must, if requested, supply the relevant government authority with all the information in their possession relating to the safety of the dam and the reservoir.

Owners authorise the representatives of the government authority and, where applicable, their partner entities, to access all facilities where necessary.

Owners must inform the government authority in charge of safety of any action liable to affect the safety level of the dam or the reservoir.

Owners must accept terms and adopt measures that, in the opinion of the relevant government authority, may be necessary during the different phases in the life of the dam for safety reasons.

The fulfilment of these obligations by owners is a key priority for the government authority in charge of dam safety, which will be achieved by the technicians assigned to this mission, with the support of environment officers and, where applicable, additional external resources.

In Spain, from an operational standpoint, the duties of inspection and surveillance are carried out in the first instance by environment officers, as well as the government's technical teams (internal or with external support), while the tasks of examining cases are conducted by specialist officials from the basin organisation, also with external support if necessary.

Possible action

■ 1.- Action in the field

■ 1.1.- Characterising a non-inventoried dam

An unregistered dam can be identified using a detailed digital map, an aerial photograph or an inspection on site by environment officers. In the latter case, their reports may or may not, if appropriate, include the regulating infrastructure in the category of inventoriable dams. If the dam is registered, technicians from the Tagus Hydrographic Confederation (in conjunction with the officers and, where necessary, the support of external technicians), make an appointment with the dam owner for an inspection visit in order to characterise the infrastructure in more detail.

■ 1.2.- Inspecting a dam

Similarly, technicians from the aforementioned Confederation, in conjunction with environment officers if necessary and, where required, with the support of external technicians, can conduct inspection visits to a dam and its facilities, be it to analyse specific problems or for a general examination, but always by sending an advance request to the owner of the infrastructure to facilitate the visit.

■ 2.- Administrative action

■ 2.1- Injunctions

The Confederation can use an official injunction to demand that the owner fulfil their obligations in terms of dam safety or, where applicable, that they adopt measures in this respect. It can also demand

the presentation and, if necessary, correction of the documents relating to dam safety required under legislation (classification proposal, emergency plan, operating rules, security reviews, etc.).



■ 2.2.- Sanctions in situ or in the event of a breach of obligations

During an inspection, the environment officers can record and report a breach of applicable legislation by the owner of the dam, which may incur an administrative sanction. Similarly, the deliberate or repeated breach of an injunction sent to the owner by the Confederation may initiate the appropriate disciplinary proceedings, in accordance with articles 116 and 117 of the law on water and articles 315 and 317 of the legislation on the public water domain.

Example 1.- Offence: installation of illegal cofferdams

An environment officer had given notification of the installation of illegal cofferdams in a dam intended for water conveyance. The aim of these steel plates, which obstructed the spillway, was to make it possible to store a larger volume of water during the summer months. After an inspection visit and an injunction along with a sanction notice, the owner dismantled the cofferdams.

Example 2.- Characterising a non-inventoried dam



Based on a prior questionnaire, a campaign of inspections was conducted by officers from the River Surveillance Service, at the request of the Department for Environmental Management and Hydrology, during which some 800 field cases were established containing data on non-inventoried regulating infrastructures, many of which had already been identified through studies, aerial photographs and the existing maps. An external technical assistance team selected those that could be inventoried, around 400 in total. One of the infrastructures visited by the external assistance and Confederation technicians, accompanied by a representative of the owner, was this 17-metre-high gravity dam built to irrigate a farm.

Insert n° 17 - Water inspection in Romania

Gheorghe Constantin
Director of Water, Ministry of Environment, Water and Forests, Romania

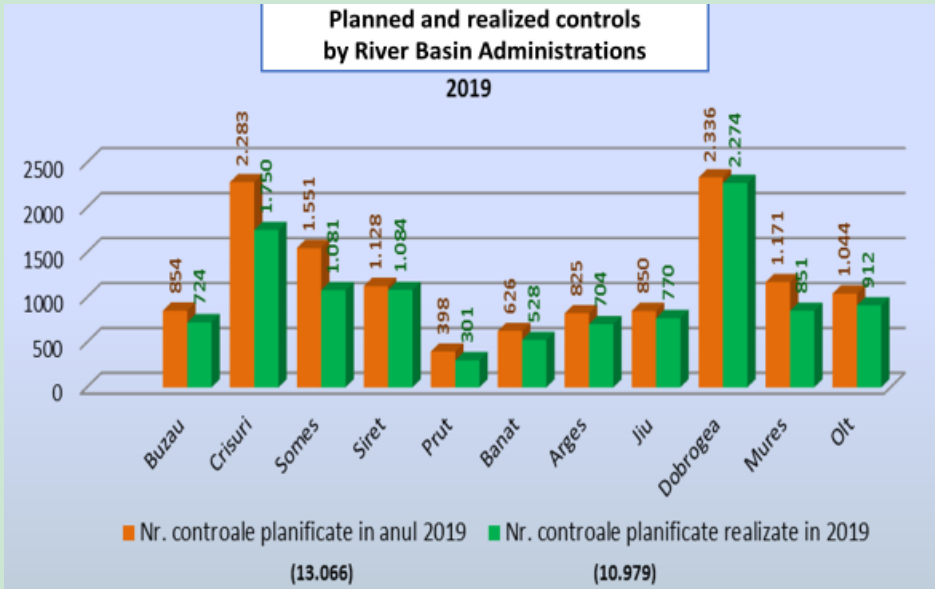
Ruxandra Balaet
Senior Adviser on Hydrogeology, Ministry of Environment, Water and Forests, Romania

In Romania, Water Inspection established within the National Administration “Romanian Waters” is the Water Law enforcement operational service. The water inspection and control activity is organized in accordance with the approved organizational charts of the National Administration “Romanian Waters” and its subsidiaries (the 11 Basinal Water Administrations on Romania’s territory).

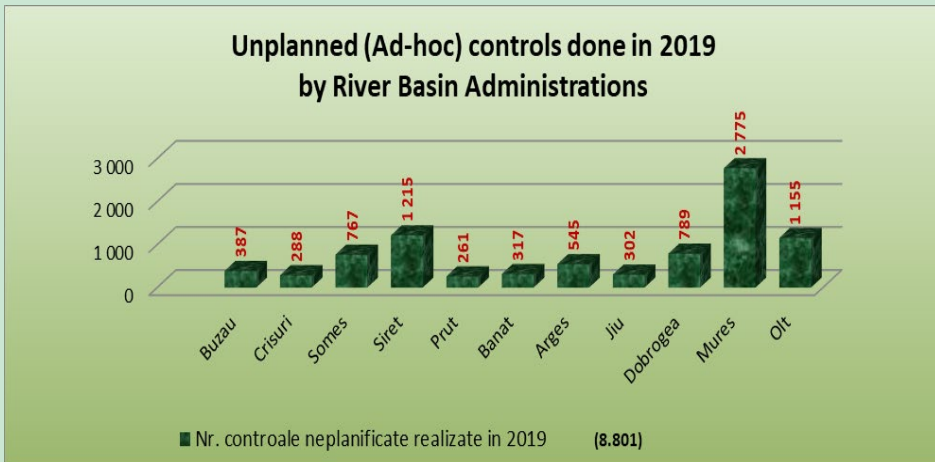
Water Inspection surveys works and activities that take place on water or related to water and permanently or periodically monitors their development in compliance with water legislation. Water Inspection activity implies the specialized technical control, which verifies the compliance of a process (water flow schemes) or of an installation, with the legal requirements in the field of water resources management. It also implies controlling and evaluating the impact of water uses on the environment. Other purposes of Water Inspection are:

- Finding deviations from Water Law provisions and derived legislation and non-compliance with the water management authorizations;
- Establishing/imposing measures and compliance deadlines for entry into legality;
- Enforcement of contraventional sanctions, in accordance with the legal requirements;
- Referral to the criminal investigation bodies, if appropriate.

Water Inspection activity is carried out according to a special schedule, namely the Annual Control Plan, established and approved in accordance with the Technical Rules on the organization and conduct of the inspection and control activity in the field of water management. The frequency and time allocated to control actions is differentiated from one water user to another, depending on their impact on the bodies of water.



At the level of 2019, the inspection activity in the field of water management has resulted in:



Inspection activity is considered as a priority in case of accidental pollution, hazards, damage in the operation of some constructions and hydrotechnical works, as well as in the case of those that can create significant pollution on water bodies and the environment respectively, having a special impact.

Water Inspection body applies an efficient quality system related to the field of activity and volume of work performed, with the necessary feedback and corrective actions whenever malfunctions are detected. Inspections are carried out in accordance with the internal procedures and working instructions on:

- Petitions solving;
- Improving water management activity through planned, thematic and joint controls;
- Management of emergency situations caused by accidental pollution on water courses and marine pollution in the coastal area and mode of action;
- Water management control and finding contraventions and crimes;
- How to complete the Water Contravention Form;
- Granting and withdrawal of the inspector's card.

The objectives set out in the Water Inspection Activity Plan are:

- Increase the efficiency in the inspection activity.
- Performing planned, thematic and joint controls.
- Compliance with the deadlines for petitioners' responses (30 days).
- Regular staff training.

The specific indicators :

- Number of planned and unplanned controls realized (including: verification of compliance with regulatory acts, new projects or activities, following self-referrals, resolution of complaints, investigation of accidents or incidents with impact on water, thematic, with other authorities);
- Number of controlled water users;
- Total number of sanctions, including warnings / fines.
- The value of the fines applied (according to Governmental Ordinance no. 2/2001).
- Number of warnings.

According to the Romanian Water Law, water inspection is compulsory for all the water users. Controls planning is based on 2 categories of risk assessment indicators for the water users: impact (emissions, amount of generated waste, incidence of a European directive, etc.) and performance (compliance with BAT, applied fines, etc.).

The inventory of water users in Romania is represented by the National Register of Controlled Objectives, which is updated annually. Based on it, water inspection controls in the following year are planned.

Each controlled objective has a record file that includes:

- previous water inspection reports;
- regulatory documents issued (mainly water management permit and authorization in force, but also conneted documents issued by other authorities);
- wastewater quality analysis bulletins;

- the plan for preventing and combating accidental pollution;
- the list of means and materials for intervention in case of accidental pollution;
- the technical documentation of hydrotechnical construction and the exploitation regulation.

For those users with significant impact on water resources, controls are done at least once a year.



1 - Water intake and fish pass—Micro Hydropower Plant Budac I, Bistrita-Nasaud County
2 - Wastewater Treatment Plant – Carei Town, Satu Mare County

Field verification is the mandatory stage in the water inspection activity. This involves the following activities:

- verification of the location, premises, endowments and existing installations owned by the controlled user;
- verification of the degree of compliance of the water user with the existing regulatory acts in the water field;
- checking the monitoring results of water resources according to the quality standards in the field;
- assessment of the data resulting from the environmental audit, as the case may be;
- checking the operation and maintenance of the endowment installations;
- verification of abilities and accreditations, as well as of the equipment used for monitoring the quality of water resources;
- checking the application of the water management system specific to the controlled objective;
- checking the compliance of the controlled water user with the legislation in the field of water management
- verification of the implementation of the previously imposed measures, following previous inspections

Insert n° 18 - Control of the use of water in critical river basins in central Brazil

Jorge Enoch Furquim Werneck Lima - Director of the ADASA, Brazil

Vinicius Fuzeira de Sá e Benevides – Head Administrator of Water Resources at the ADASA

Gustavo Antonio Carneiro – Head Administrator of Water Resources at the ADASA

The Regulatory Agency for Water, Energy, and Basic Sanitation of the Federal District of Brazil (ADASA) is the authority responsible for granting water permits for surface and groundwater uses in the Federal District and for controlling those uses. ADASA continuously seeks to balance demand with availability in the 41 hydrographic units (HU) in which its territory of 5.800 km² is divided for water management purposes.

The average annual precipitation is about 1300 mm, though it is mostly concentrated in half of the year (October to April), while the other half (May to September) endures seasonal drought. In those dry months, there is drastic reduction in the water flow of the small rivers and streams that are typical of the local high lands. Water shortages and potential conflicts over water use become a reality in some hydrographic units with significant water demand, especially for irrigated agriculture and urban supply.

ADASA issued a Resolution which establishes the general procedures for conduction of law enforcement activities related to water resources use.

According to this resolution, the following activities are considered water use infringements: (i) abstract or use water resources for any purpose without the respective water permit; (ii) implement or start the implementation of any activity that demands the abstraction or the usage of surface or ground water resources without the permission of the competent authorities; (iii) use water resources or execute works or services related to them in disagreement with the conditions established in the respective water permit; (iv) drill water wells or operate them without due permission; (v) defraud water volume abstraction metering or inform values different than the metered volumes; (vi) violate norms established in the regulations of the current and supervening legislation and in the administrative regulations, including resolutions, instructions and procedures established by competent authorities; (vii) hinder or hamper law enforcement activities conducted by competent authorities.

Due to practical limitations, policing the use of water at the abstraction point is not always possible, therefore other controlling strategies must be utilized. Controlling key water users as well as monitoring the HU outlet or intermediary river flow sections in critical water basins have proved to be successful approaches.

This article highlights two case studies in which ADASA has implemented appropriate strategies for controlling water use in critical watersheds: Pipiripau and Alto Jardim.

The Pipiripau Watershed is a rural basin that, although small (240 km²), is very relevant for environmental protection, for local food production and family farming, and for safe water supply. Water conflicts used to be quite common in the basin and were intensified by the construction of an irrigation canal in the 1980s, and the installation of a water withdrawal station, later in 2000, to supply freshwater to a nearby cluster of 180,000 inhabitants. Currently, more than 260 water withdrawals are registered in the basin, most of them for irrigation.

In 2020, Adasa and ANA, the National Water Agency, issued a joint regulation that establishes a set of rules and conditions necessary to enable an effective and equitable process of water allocation in the Pipiripau Watershed during the dry months: the Pipiripau Stream Regulation Act. The Act defines three hydrological states – HS (green, yellow, and red) and establishes conditions for water consumption according to each hydrological state. The allocation negotiation begins, every year, a few months before the dry season and the established rules last until the start of the rains.

The negotiation process is supported by simulations that forecast the water discharge during the dry season, which are realized according to stream flow and precipitation data measured during the previous rainy season.

ADASA utilizes a stream gauge station to define the current hydrological state. As the water flow diminishes during the dry season, the HS moves from green to yellow to red, and water use restrictions grow stricter accordingly. The simulations are used as reference to evaluate the current conditions and whether further restrictions are necessary to avoid reaching the red HS.

ADASA conducts field activities, by sampling, to check the compliance of the allocation rules. In addition, Adasa maintains an online hydrological bulletin that informs the current HS, the agreed upon allocation rules, and the evolution of the water level height at the gauging station (Fig.1).

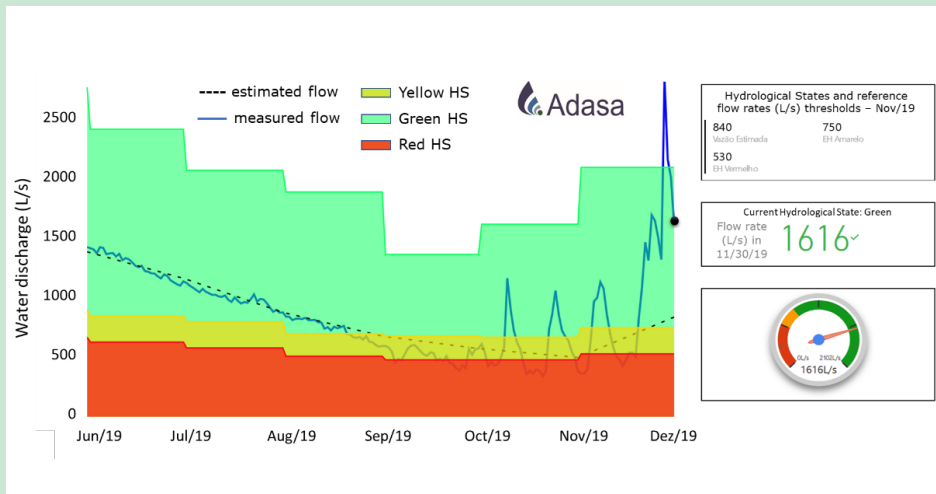


Fig.1 – Pipiripau Water Allocation Bulletin in December 05, 2019 (<https://gis.adasa.df.gov.br/>).

In another hydrological unit, known as the Alto Jardim Watershed, water allocation is necessary during the dry season to harmonize the use of water among agricultural irrigators. With the participation of the local Water Users Association, the controlling strategy is based on sheer engagement and reporting from the basin users. For this aim, the irrigators joined forces, under the guidance and supervision of ADASA, and implemented a low-cost real-time water use control system to enforce the compliance of the water allocation rules that are established prior to the dry season.

The monitoring technology consists of sensors installed on existing water pumps and center-pivot irrigation systems, which detect when the systems are in operation. Logged data with total operating

hours and the amount of water used are transmitted via satellite network to the cloud and become available for real-time display on interactive online dashboards with maps, tables and graphs for all registered users and for ADASA (Fig.2)

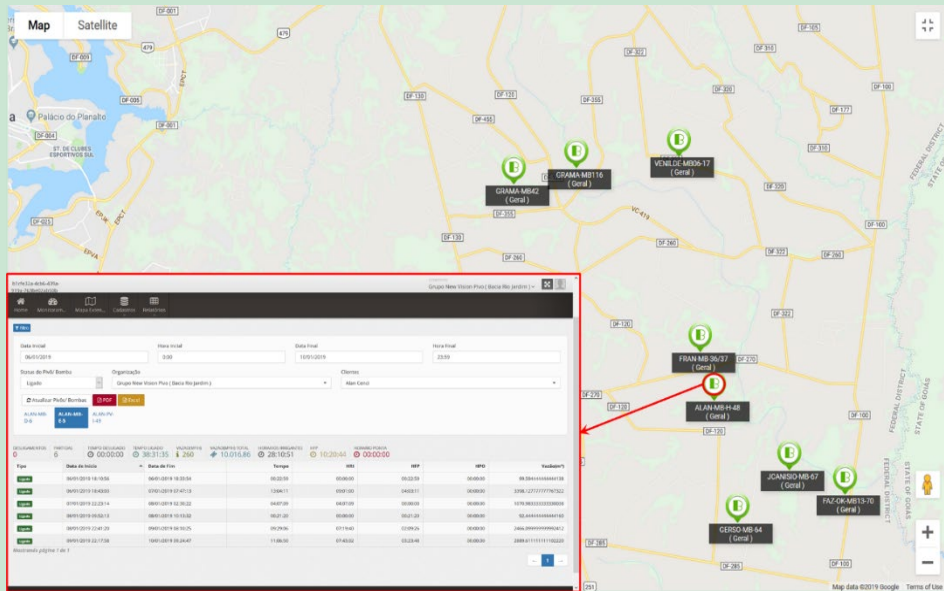


Fig.2 – Alto Jardim Watershed: real-time water use inspection dashboard.

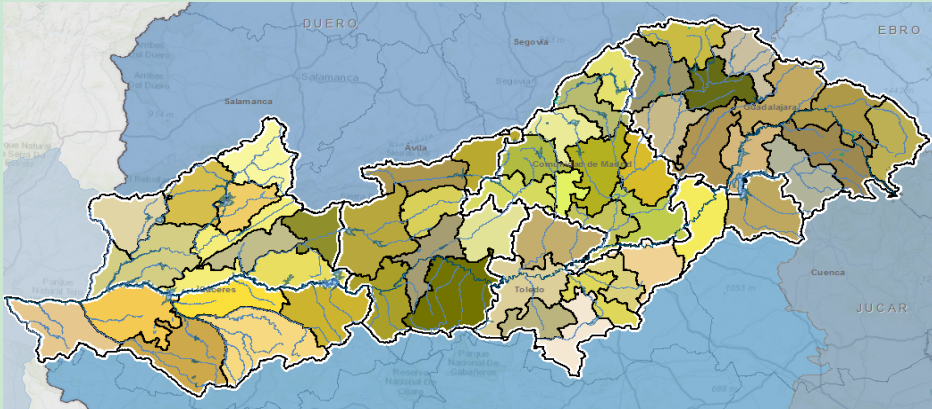
Since the implementation of the control app in the Jardim River watershed in 2018, the number of complaints about water conflicts in the basin went from dozens, before the app, to virtually none.

Insert n° 19 - Surveillance of the public water sector in the Tagus Basin in Spain

Javier Díaz-Pegañón Jimenez – Water Commissioner, Tagus Hydrographic Confederation, Spain

The public water domain surveillance service of the Tagus Hydrographic Confederation is in charge of inspecting and controlling the public water domain, inspecting and surveillance of compliance with the terms of concessions and authorisations relating to the public water domain, and the surveillance of any resulting works, in accordance with the powers attributed to it by Spanish water legislation.

In order to conduct these duties across the entirety of the Tagus river basin, the surveillance service is divided into 7 territorial districts. These districts are in turn divided into surveillance sectors run by an environment officer or river guardian. The river basin is currently divided into a total of 54 surveillance sectors.

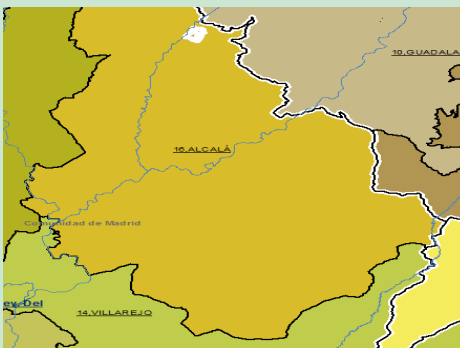


The river guardians and environment officers assigned to the surveillance service work in the field, writing official observation and complaint reports, sealing and taking meter readings, writing technical reports, etc., for which they need to constantly travel around each surveillance sector.

Not all sectors are identical. Each sector has its own specificities and working methods should be adapted as a result.

For example, we are located in sector 16, Alcalá de Henares, in the Community of Madrid, with significant industrial and urban establishments, where the most serious offences are those linked to wastewater discharge, the use of groundwater in residential and leisure areas and security at construction sites for many public or private infrastructures that affect the rivers or their legal protection zones.

Conversely, in sector 1, Molina de Aragón, located in the High Tagus or Alto Tajo and with a significant demographic decline, the most common offences are those relating to minor works in secondary rivers, the felling of trees in public rivers and the minor use of surface water for irrigation; in short, anything linked to the development of the economic sectors of agriculture, forestry and livestock rearing.



Sector 16. Alcalá de Henares



Sector 1. Molina de Aragón

Practical case studies

1. When conducting a surveillance mission, the sector 16 environment officer observed that town planning and construction works for a shopping centre in the municipality of Torrejón de Ardoz had begun, occupying the water policing zone of Arroyo Pelayo, covering 180 metres, without any authorisation from the basin organisation. A 2-metre-high metal fence was installed parallel to the stream on both banks, at a distance of 20 metres. Inside were numerous temporary housing units that had been installed, as well as construction material. On the left bank, construction of the main shopping centre building, which seemed to occupy some 0.6 hectares of the water policing zone, had begun. The environment officer wrote the relevant official report, including all the acts committed in violation of the law on water and affected areas, in order to quantify the damage caused.



2. It has been observed that trees have been felled without authorisation in the basin organisation, on the left bank of the river Gallo and in its easement zone. The distance in question as far as the riverbank is measured: it is around 0.3 km; the number of trees felled is 62, with an approximate diameter of 0.4 metres, 42 of which are on the right bank and 20 on the left. All these facts are included in the official report written by the river guardian in order to trigger the relevant disciplinary proceedings and assess the damage caused.

Insert n° 20 - Control of wells in the Tagus Basin in Spain

Javier Díaz-Pegañón Jimenez – Water Commissioner, Tagus Hydrographic Confederation

From 2005 to 2015, the Tagus Hydrographic Confederation signed different partnership agreements between the Ministry of the Interior and the corresponding ministry governing the basin organisation, in order to involve the Guardia Civil (SEPRONA) in surveillance work for the public water domain. These activities mainly covered the control of wells, discharge and the extraction of aggregate. They were conducted in addition to the surveillance missions carried out by our river surveillance service by environment officers. As part of these partnerships, the SEPRONA supplied human resources and

the Confederation the material resources required for their implementation.

A portion of the missions conducted by the SEPRONA resulted in official reports that were sent to the hydrogeology service for evaluation, as with the official reports written by environment officers. The work of the SEPRONA was often focused on inspection campaigns of wells in the basin's priority surveillance zones (mainly in the Madrid aquifer). Subsequent analysis shows certain changes in trend of the refilling of certain aquifers, which may be partially attributed to this surveillance.

Practical case study: control of illegal wells in the Madrid aquifer in collaboration with the SEPRONA (Guardia Civil Nature Protection Service)

The inspection of wells to monitor illegal catchments was one of the priority approaches for the hydrogeology service which, based on prior studies and using all the available data, schedules inspection campaigns for illegal dams in the Community of Madrid from 2005 to 2015, in collaboration with the SEPRONA of the Guardia Civil.

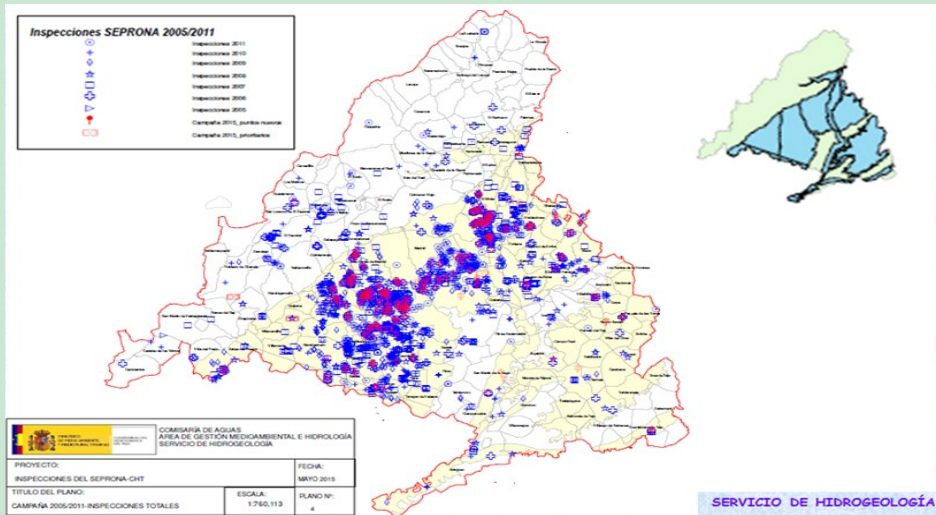


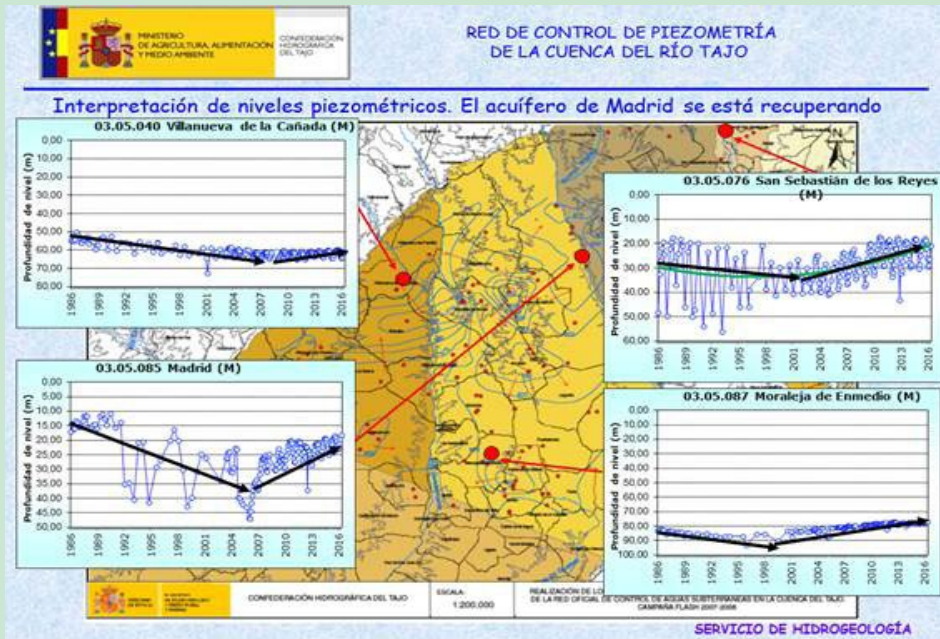
Fig.1 Location of the inspected wells in the Community of Madrid (period 2005-2011).

The priority surveillance zones are those above the tertiary detrital aquifer, which is a strategic reserve to use via the CYII (Isabel II Canal) during periods of drought. The proposed usage strategy, in coordination with the Isabel II Canal, which is the main user and concessionary, consists of overexploiting the aquifer during a year of extreme drought and refilling the level for four or five years of abundant rain, while the surface water is collected to fill the reservoirs. A joint usage scheme for underground and surface resources was therefore established in order to make the aquifer a sustainable resource in the medium and long term.

From 2005 to 2019, the hydrogeology service processed 5,663 complaints filed by the SEPRONA and the river surveillance service concerning illegal dams. Of this number, over 2,800 reports proposing the initiation of disciplinary proceedings were sent. From 2005 to 2016, near 20 wells were sealed and around 3 to 5 wells were taken out of service (see photos 1 and 2).



Photos 1 and 2. Protective measures: sealing of an illegal well in an industrial area in Móstoles (Madrid) (2006)



Here is a graph showing the level of different inspection points in the network. In certain areas, it appears to be refilling.

Insert n° 21 - Control of livestock farm discharge in the Guadiana Basin in Spain

Ángel Nieva Pérez - Water Commissioner, Guadiana Hydrographic Confederation

The following example pertains to the monitoring of discharge into surface water from livestock farms. This discharge is difficult to monitor due to its occasional and diffuse nature.

Diffuse emissions from livestock-rearing activities can exert significant pressure on the quality of water in the public hydraulic domain if the livestock farms are not managed in compliance with the DPH.

European legislation combats this type of pollution, caused by nutrients and nitrates in particular, through its direction on the protection of waters against pollution caused by nitrates from agricultural sources. This directive has resulted in agricultural codes of practice and action programmes in areas vulnerable to nitrate pollution.

They establish measures to avoid the diffuse emissions of pollutants from livestock farms; the proposed actions are compulsory and target areas affected by this type of pollution.

Theoretically, livestock farms do not have any discharge authorisation; in Spain, only the Hydrographic Confederation (CH) has this authorisation. The Confederation offers an animal waste collection service using sealed systems and its subsequent recycling, and supplies the relevant environmental authorisation after the environmental impact study.

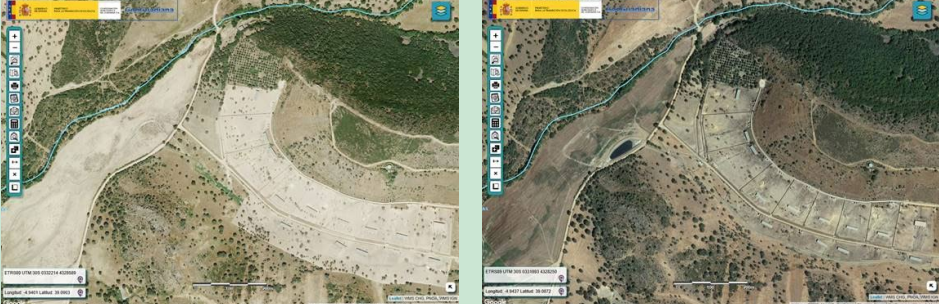
However, this does not prevent the basin organisation from conducting its water policing mission in the event of direct or indirect discharge from livestock farms into the public water domain.

In the example of a semi-intensive pig farm, which has outdoor exercise compounds where the animals can move around freely and defecate on the ground, the water runoff from the compound gradually contaminates the public hydraulic domain as it progressively discharges. Before the intervention of the basin organisation (CH) police, this water runoff was not properly collected.



As the following photo shows, the polluted water runoff was reaching the river. The inspection to take samples resulted in a sanction corresponding to the relevant assessment of damage caused to the public hydraulic domain, calculated in accordance with the Regulation of the Public Hydraulic Domain.

The works enforced by the water police consisted of implementing a water runoff collection system (sealed raft with artificial pool). This corrective measure was implemented at the request of the administration in order to resolve the sanctioning procedure in which the corresponding sanction was also imposed.



(1) Pig farm compounds before the works enforced by the water police, and therefore without an adequate system for collecting polluted water (2) Compounds at the same farm after works: collection system for polluted water runoff

Insert n° 22 - Basic elements of the water quality monitoring system in the Province of Mendoza in Argentina

Mónica Marcela Andino – Secretary of Institutional Management, General Department of Irrigation

The water authority in the Province of Mendoza in Argentina, the General Department of Irrigation (DGI) is responsible for integrated local water resource management with sufficient powers to check that the usage and abstraction of water are conducted efficiently in the context of sustainable development.

As such, the DGI has implemented a water quality monitoring regime to preserve its availability and thereby guarantee its use and enjoyment for future generations, as well as compliance with provisions that make it compulsory to ensure global, rational and efficient use, with the application of the polluter-payer principle.

Given that Argentina is a federal country as determined by its National Constitution, the management of water in general and of its quality in particular means that the relevant different powers of legislation and implementation must be addressed. The federal nature of the State of Argentina (CN, art. 1) means that there are two orders of government in the same territory, each with its own assigned constitutional powers, so that the national state only has powers that have been expressly delegated, the rest being reserved locally to the provincial states (CN, art. 121). In particular, the preservation of the environment and of natural resources in general is supported by the constitution. Under article 41 of the CN, all inhabitants are entitled to the right to a healthy environment and have the duty to preserve this.

This regime covers any pollution or discharge of substances into a public river, irrigation systems and natural and artificial reservoirs, which must be managed appropriately to avoid the deterioration of the water.

The legislation on quality monitoring, which is compulsory throughout the province, established a specific procedure for industrial discharge.

Generally speaking, the control system consists of a register of establishments that discharge industrial effluent into public waters; a fiscal regime is in place and provides for the payment of an annual licence fee for those who have obtained authorisation to discharge. It includes a special inspection and sanction procedure in the event of non-compliance with the parameters for the unauthorised discharge of industrial effluent.

The general principles of interpretation and application of the said regime are: compliance with the concept of hydrological cycle unit and basin unit, the conservation and protection of the environment and ecosystems, prevention in order to avoid the contamination or deterioration of the water resource, the repair of damage caused and compensation in the relevant cases, the participation of users, prevention through the imposition of restrictions and inspection measures, the principle of information under which the administration must be informed of anything that may have an impact on the water resource, and, most importantly, strict responsibility.

This water preservation regime falls under public order and covers the sustainability of the hydrological cycle, basin-led management and an ecosystematic approach, making the processing of polluting effluent compulsory.

The objectives of this rule are: a) To seek to preserve and improve water quality, in line with the uses defined by the law or by the government authority or in order to protect the environment; b) To prevent the pollution of water, both surface and ground, be it due to natural causes or human activity; c) To conserve, preserve and restore aquatic ecosystems, in coordination with the relevant implementing authority; d) The definitive organisation and adaptation of existing discharge through specific processing plans; e) To regulate the inspection procedure for discharge and the granting of authorisations and permits.

Under these regulations, any contamination, alteration or deterioration of surface and groundwater is prohibited throughout the Province of Mendoza. This applies to direct or indirect discharge, spills or infiltration into natural rivers, lakes and lagoons, dams and artificial reservoirs, artificial public canals and any type of aqueduct under the jurisdiction of the DHI and in underground aquifers. The same applies to the accumulation of unauthorised substances, refuse or residue, debris, domestic, chemical or industrial waste and any other substance in areas that may pose a risk or danger to the water resource; and, in general, any type of activity or action that could lead to the deterioration, alteration or contamination of the water and affect its environment. The products covered include any kind of substance, liquid or solid, waste or residue, with the exception of those expressly authorised in advance.

It should be noted that in Argentina in general, to preserve or restore the quality of the water, a constitutional provision establishes broad legitimacy for the support of collective advocacy rights, through the option for qualified people, public bodies and associations to take legal action against pollution risks or known pollution.

On a local level, policing in terms of water quality preservation acts through coercion, either by threat of sanction, or by implementing sanctions on those who break the law.

On this basis, in cases where the water quality has been altered, envisaged sanctions include warnings, fines, the suspension or withdrawal of the discharge authorisation, closure and even the expiration of the right to use water in the establishment generating the effluent. It should also be mentioned that the contamination of water by dangerous waste when this ultimately poses a danger to health is classified as a crime under criminal law.

The water quality monitoring regime was partially amended in 2020, to reinforce both the inspection process for establishments and transparency and objectivity in applying sanctions in the form of a fine, as in the absence of an objective method, in practice the same act could be sanctioned by fines of varying amounts according to the discretionary powers of the person in charge of the service.

Regarding the inspection procedure and compliance with it, the collection of samples is obligatory in all cases, as is the remittance of reference samples. Nevertheless, in the event of visibly severe alteration to water quality or a duly justified emergency, the water authority can take immediate measures to stop discharge detected on site during sampling, if one of the parameters is breached (pH, conductivity or other) or the presence of solids or if the spill has taken place at an unauthorised or undeclared discharge point.

In terms of the sanction procedure, although initial resolution no. 778/96 established the general guidelines to follow in order to adjust the amount of the fine corresponding to an offence, it left substantial margin for the official's discretion. To reduce this discretion, a polynomial method was chosen which, starting from a minimum amount, allows for an increase (or reduction) depending on any aggravating (or attenuating) factors, established in advance in the said method. For example, the effective pollution of the public hydraulic domain is an aggravating circumstance that can lead to the application of the legal maximum, while the restoration of the affected site and the adoption of measures to contain the discharge or the act of informing the authority in good time can reduce the fine, without waiving liability.

With this regulatory framework, the local water authority can monitor industrial discharge into the public hydraulic domain in an effective, transparent and efficient way, taking account of the geographical, hydrological and hydrogeological reality for each basin in the province, thereby achieving an appropriate level of management for the effluent produced by the industrial sector and helping them to adapt to environmental objectives.

8 - INSPECTION PLAN

- The ministry in charge of water management must define a framework for control priorities, which is used as a basis to draw up annual inspection plans for decentralised water and aquatic environment policing services.
- The water police service must identify the key issues of state policy in their relevant area and translate these into priority actions. The provisional action programme must include an element relating to the inspection of the facilities, works and activities that have been authorised or declared/
- The inspection plan must be selective, for example according to the black spots identified, and correspond to the priority actions decided upon on a local level. It must be established in coordination with the relevant services.
- In order to avoid blind progress, it is important to establish an inspection programme on a yearly basis and ideally on a local level, to target the priority areas that should be investigated in light of recorded complaints, accidents that have occurred in the recent past, risks of legislative non-compliance or potential offences. The programme must conform with the major water policing guidelines established on a national level.
- Developing the programme is an opportunity for collaboration between different water stakeholders.
- A tracking table may be a useful addition to the annual programme in order to monitor its progress.

Insert n° 23 - Inspection plan for discharge in the Tagus Basin in Spain

Javier Díaz-Pegañón Jimenez – Water Commissioner, Tagus Hydrographic Confederation

Among the duties and powers of basin organisations are the management and control of the public water domain, inspection and surveillance of compliance with the terms under which concessions and authorisations relating to the public water domain are granted, and water quality monitoring. As such, the water police of the Tagus Hydrographic Confederation conduct inspection and surveillance of wastewater discharge in the public water domain in order to ensure the adequate protection of water and the public water domain.

To conduct the surveillance, inspection and control of wastewater discharge in the public water domain, an inspection plan is established every year for wastewater discharge in the public water domain, the aim of which is to plan, wherever possible, actions to be taken in order to check the conditions in which this discharge into the public water domain is conducted, regardless of its nature and administrative status.

Inspection work is conducted by staff from the department for water quality and the public water domain surveillance service. This staff is qualified under the quality system of the Tagus Hydrographic Confederation water analysis laboratory, which is accredited by the national accreditation body

(ENAC) according to criteria stated in standard UNE-EN ISO/IEC 17025 on the general requirements for the competence of testing and calibration laboratories. The collection of wastewater samples falls with the scope accredited by this body, which guarantees that the methodology used by the collection officer is recognised and accepted on an international level.

The records that are part of the accredited procedure, which include the sample collection report and the chain of custody, guarantee the inviolability of the sample and the traceability of its transport in appropriate refrigeration conditions and without any light, from the moment it is collected to its analysis in the laboratory.

The Tagus Hydrographic Confederation also calls upon the services of a body that collaborates with water governance, providing support for the inspection of facilities and discharge in the public water domain, as well as the occasional collaboration of other organisations such as the Guardia Civil Nature Protection Service (SEPRONA).



Aside from planned activities, discharge inspections are conducted for different cases (industrial, agricultural, small conurbations, etc.) in the event of complaints or accidental discharge.


The annual inspection plan for wastewater discharge in the public water domain Criteria taken into account in drawing up the plan

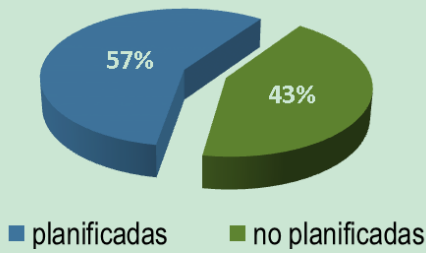
In the context of the Tagus basin, 2,800 wastewater discharge points are inventoried. In order to draw up the annual inspection plan for wastewater discharge in the public water domain, a series of factors are taken into consideration in selecting the discharge points to inspect and establish the frequency of the inspections. These are:

- Pollutant load due to the discharge in question compared to the total pollutant load of the basin
- Sensitivity of the receiving environment
- Prior knowledge of the operation and maintenance of existing treatment facilities
- Available human resources

■ Available material resources

In light of these criteria, the inspection plan provides for the collection of samples from discharge with the following frequency:

URBAN DISCHARGE		INDUSTRIAL DISCHARGE	
RDischarge from conurbations in high pressure zones		Integrated Environmental Authorisation Industrial discharge, dangerous substances	
> 1 million PE	2 samples/month	> 100 000 PE	1 sample/month
50 000 – 1 million PE	1 sample/month	15 000 – 100 000 PE	3 samples/year
10 000 – 50 000 PE	6 samples/year	2 000 – 15 000 PE	2 samples/year
2 000 – 10 000 PE	2 samples/year	< 2 000 PE	1 sample/year
< 2 000 PE	1 sample/year	Industrial zones	
Municipal discharge		Industrial and urban discharge > 1 000 EH	1 sample/year
> 100 000 PE	1 sample/month	Other	
50 000 – 100 000 PE	6 samples/year	Treatment plans	1 sample/year
10 000 – 50 000 PE	3 samples/year	Olive industries	1 sample/year
2 000 – 10 000 PE	2 samples/year	Fish farms	2 samples/year
< 2 000 PE	1 sample/year	Nuclear and combined cycle power plant	1 sample/year
No authorisation	1 sample/year	Cooling water discharge	1 sample/year
Municipal discharge in protected zones			
< 2 000 PE	1 sample/year		
Urban development discharge			
> 2 000 PE	1 sample/year		
Discharge in rivers from camp sites			
> 100 m3/jour ou 500 PE	1 sample/year		



At the end of the validity period of each annual plan, a corresponding report is written in order to evaluate the plan's level of execution. In 2019, 1,938 samples were analysed, 1,611 of them linked to wastewater discharge and 327 to quality and impact studies. Of these 1,938 samples, 1,106 derived from planned inspections and 832 from unplanned inspections..

Insert n° 24 - Annual planning process for environmental control activities in Quebec

Daniel Labrecque - Regional Director and Director of the Operational Support Bureau and Pecuniary Administrative Sanctions, Ministry of the Environment and the Fight Against Climate Change, Quebec

The role of the Quebec Environmental Control Centre (CCEQ) is to ensure that environmental legislation is followed for the well-being of citizens and checking the compliance of activities that can cause damage to the environment, citizens and property and, where applicable, to implement prevention, protection and repair methods.

The ministry's environmental inspection approach is inspired by best practice around the world, be it the promotion of compliance, environmental control (all kinds of inspections) and coercive measures used for situations of non-compliance.

The CCEQ has nearly 300 inspectors across Quebec. The inspectors are versatile and have the skills and expertise to conduct inspections in more than one business sector.

The inspections are part of a control process for environmental provisions that combines instruments of promotion and the surveillance of compliance and execution, for mutual reinforcement. This vision encompasses the major elements described by the Organisation for Economic Co-operation and Development (OECD) in a 2009 publication: "Ensuring Environmental Compliance: Trends and Good Practices".

Operational planning

An operational planning exercise is conducted every year in order to focus the force of action. Considering the concept of risk during the operational planning phase enables the CCEQ to be more efficient by prioritising inspections in sectors with a higher probability of non-compliance and to act in sectors with the greatest environmental impact.

The CCEQ makes judicious use of inspections in the field, inspections off site, the validation of self-surveillance data from companies, aerial surveillance, the use of drones, sampling techniques and measures of all types in the field.

The operational planning exercise is modulated according to the following triggers:

- Inspection programmes
- Environmental complaints;
- Environmental emergencies;
- Compliance inspections;
- Follow-up of breaches;
- Regional initiatives.

Given the dynamic aspect of the context in which the CCEQ's operations take place, results are measured continuously in order to monitor their progress. To this end, a dashboard of strategic indicators is produced each quarter, thereby allowing the CCEQ to monitor progress in terms of results and, if required, refocus the force of action by concentrating on the indicators it believes to be most significant.

Inspection programmes

Inspection programmes, of which over half of the planned inspections are based on a risk-related approach, can be adapted according to specific issues for regional directorates, topical subjects, the MELCC's strategic plan or elements that require specific attention from the ministerial authorities. Inspection programmes are distributed across the different business sectors for which premises or operators are governed by environmental legislation, such as the agricultural, pesticide, municipal and industrial sectors or wetland, water and natural environments.

The CCEQ must deal with increasing obligations in terms of environmental inspection and environmental emergencies, new emerging environmental issues, the growing complexity of its inspection work and the increasing expectations of the population in terms of environmental surveillance and quality.

In this context, the CCEQ has embarked upon an optimisation process for its environmental control work. This quest for improvement is among the priority actions that aim to optimise processes through the effective and efficient organisation of work, the implementation of procedures ensuring cohesive action and a high level of quality and rigour, and finally the use of adequate and high-performance technological tools.

9 - RECOURSE

- The right to recourse, meaning the right to contest an administrative, must be retained as a principle applicable to water policing. The mechanism that allows for this recourse should be provided for.
- It is recommended that a range of possibilities for recourse be available, from administrative recourse with the decision-making authority to legal or contentious recourse with the administrative jurisdiction.
- The implementing measures for recourse procedures must be precise and accessible to all (time frame, progress, form, type of decision in question, admissibility, etc.).
- Both the administrative authority and the judge must be specified.
- The water police service is involved in the recourse procedure, in particular by writing a statement of case, which must include information on the context and admissibility of the recourse and the merits of the complaint.
- Officers in charge of water policing should have the tools to help them with the recourse procedure.

The right to recourse is a general principle that must be included in the framework for water policing. As such, in a democracy, any administrative decision by the water police service must be able to be contested by the petitioner according to the framework defined by law.

The dispute may be administrative, in the form of an “informal recourse” to the authority that made the decision, “hierarchical recourse” to the hierarchical superior, or contentious, before the administrative jurisdiction.

A recourse before the administrative authority consists of a request to review the decision by the initial administrative authority, such as the water police service, or the hierarchical superior of the authority in question, such as the prefect or minister in charge of legislation on water. In the event of administrative recourse, the law should allow for a maximum response time from the administration, after which the decision is annulled.

Moreover, any administrative decision must be subject to an adjudicative challenge before the relevant court. In this case, the water police service must be able to provide the court on request with the precise elements that motivated the decision made and contested (statement of case). These elements must demonstrate the context, events, inadmissibility or, ultimately, admissibility of the recourse. As a general rule, the objective for the water police service is to demonstrate to the judge that the recourse is inadmissible and/or that the offence is real in terms of the legislation. The water police therefore provide technical support to the court judge.

Given the legal complexity, it is highly recommended that the ministry in charge of water policing produce statement of case templates for the most frequent disputes, so that water police officers are sufficiently equipped to write these documents and bring the procedure to a successful conclusion. The expertise of local authorities (such as the prefecture) that are used to producing statements of case on other matters (such as town planning) may also provide support to the water police services.

In the interests of transparency, the documents produced by the water police service must be made available to the petitioner.

Depending on the country’s justice system, there may be additional judicial procedures that allow the petitioner to appeal the court’s decision, where applicable.

Insert n° 25 - Example of the chain of recourse in France, Gironde case study

Daniel Valensuela – INBO Secretariat (based on documents provided by Michel Vignaud, Policy Officer, OFB Regional Directorate, Nouvelle Aquitaine)

In application of the departmental inspection plan for water and biodiversity, after first informing the Public Prosecutor, two officers from the ONEMA (National Office for Water and Aquatic Environments), accompanied by an officer from the DDTM (Departmental Directorate of Territories and the Sea) of the Gironde observe that dredging work on a small river (Pré de la Palu et de la Prairie – Sainte Florence) has been conducted on a stretch of around 6 km, with the extraction of an estimated 3,600 m³ of sediment (authorised limit: 2,000 m³).

The information gathered by officers indicates that this work was commissioned by Mr. A, President of the local Intercommunal Sanitation Syndicate (SIA). There was no prior authorisation request for these works under the law on water.

Recording the offence

The officers meet with the project owner and observe the reality of the works with him. During this interview, he acknowledges that he deliberately did not ask for the prior authorisation required due to the complexity of the process. As such, he acknowledges that his actions are illegal and takes full responsibility. He finally explains that these works were required to increase the hydraulic capacity of the river at times of increased water levels and ensure the drainage of surrounding land.

Step 1: amicable administrative approach

- The officers ask the President of the Syndicate to regularise the administrative situation of these works by submitting an application to the department's water police service within a precise time frame, in the absence of which criminal proceedings will be initiated against the SIA represented by its president. The individual in question is not opposed to this process.
- The report of findings written by the water police officers is sent to the High Court (TGI) public prosecutor's office.
- On the deadline for submitting the authorisation request, no application to regularise the administrative situation for the works conducted has reached the DDTM (water police bureau). Consequently, the offence is duly confirmed and legal proceedings are initiated.

Step 2: engagement of the judiciary water police

- As part of the preliminary investigation (2012), the National Gendarmerie of the place in question interviews Mr. A, as President of the SIA. He confirms that he commissioned these works and had them conducted by the chosen companies without requesting prior authorisation due to the complexity of the process and the probable long delay in obtaining this authorisation.
- He acknowledges that he has not regularised the administrative situation of these works by the proposed deadline (1 July 2012), explaining that the syndicate is due to be dissolved by 1 January 2013. As such, he states that he prioritised "legitimacy over legality".
- The National Gendarmerie of the place in question concludes that the offences committed by the SIA should be upheld.

- Pursuant to administrative police procedure, the Prefect issues the SIA with formal notice to meet the provisions of the law by submitting an authorisation request with a view to regularising the illegal work. No such application is submitted.
- Following the preliminary legal investigate, at the request of the court prosecutor's office, a water police officer is asked to visit the site, where they confirm that the situation remains unchanged and the impacts are continuing.

Step 3: adjudication

- An initial adjudication takes place at the court of Libourne in January 2014, attended by a support committee composed of local elected officials (deputy, senator, general councillor, mayors, etc.). Speaking in his defence, Mr. A's lawyer challenges the water police service. Mr. A reiterates his comments made during his interview by the gendarmerie and explains that he conducted these works urgently to combat flooding.
- The criminal court issues a verdict in April 2014 acquitting Mr. A, finding that insufficient evidence of the offence has been gathered. The plaintiff – the association for the protection of local nature – is dismissed. Following the verdict, a major media campaign in support of the president of the SIA is organised.
- Both the association for the protection of local nature and the Public Prosecutor appeal this initial verdict in April 2014.
- The appeal hearing takes place at the Bordeaux Court of Appeal in December 2014.
- The technical evidence the existence and permanence of the river (and its non-artificial nature), the existence of aquatic flora and fauna, the flow of the river, its supply, its ecological role and also the volume of sediment and abstraction and length of river in question lead the court to overturn the verdict of the criminal court and sentence the defendant to a fine of 1,500 euros and a payment to the association for the protection of nature of 400 euros in damages.

This example is the first case in France of a water policing conviction to go to the Court of Appeal.

10 - ADMINISTRATIVE AND LEGAL CONSEQUENCES

- Inspections must always be followed up, either to inform the petitioner that their activity is order, or to implement administrative and/or legal consequences.
- Inspections that reveal non-compliance with technical prescriptions must either trigger administrative consequences or legal consequences, or both at the same time.
- A graduation of administrative consequences is advisable, from additional technical prescriptions to formal notices or enforcement or the withdrawal of the authorisation.
- Legal consequences must be determined by the relevant judiciary authority.
- Legal consequences should involve court proceedings with the possibility of legal settlement.
- The administration must have the legal power to impose sanctions in the event of offences or breaches of legislation. This power must be defined in terms of procedures which the administration must follow to the letter.
- The sanction system must include administrative and legal sanctions.
- In order for this system to work effectively, there must be a good relationship and coordination between the service in charge of water policing and the judiciary services, and depending on the case, with the police forces or gendarmerie that may be called upon to support the water and environment police.
- The sanction system should have two objectives: prevention, as stakeholders and citizens are aware of the sanctions they risk by committing illegal acts, and the sanction proper, meaning the repairing of damage caused by the offence and, if necessary, the restoration of the property in question, for example the restoration of a riverbed.
- Jurisdiction over the sanctioning power must be precise; it is advisable that this jurisdiction be exercised either on a local, decentralised administrative or basin level. To this end, the sanctioning power must be assigned to a local administration or basin organisation, which will employ officers authorised to inspect and sanction in the field.
- The enforcement procedure for administrative and legal penalties and sanctions must be clear and defined on a national level. The type of sanction and level of penalties and fines must be sufficiently dissuasive.
- The range of penalties must be sufficiently broad to cover the different cases of offence, including fines, obligation to restore the site to its original state, destruction of the facility or construction, cession of activity.
- It is important that the sanctions be communicated, both in the interests of transparency and to increase the dissuasive character of the legislation.

Insert n° 26 - The model of the Ministry of the Environment and the Fight Against Climate Change in Quebec in tackling non-compliance with environmental legislation

Daniel Labrecque - Regional Director and Director of the Operational Support Bureau and Pecuniary Administrative Sanctions, Ministry of the Environment and the Fight Against Climate Change

In Quebec, the main authority responsible for ensuring that environmental legislation is followed across the province is the Quebec Environmental Control Centre (CCEQ). It is a unit that reports to the Ministry of the Environment and the Fight Against Climate Change (MELCC).

The way in which the CCEQ deals with each breach recorded during environmental inspection activities is based on the severity of the actual or feared consequences of these breaches for the environment or public health. This general principle delineates the use of various measures provided for under environmental legislation for the breaches recorded.

Standard procedure illustrated according to the severity of the breaches

- A notice of non-compliance (ANC) is a written notification sent to an offender informing them of the breach or breaches recorded and asking them to take the necessary measures to comply.
- An administrative pecuniary sanction (SAP) is a monetary sanction determined by the law for each of the envisaged breaches. The amounts are determined by the law according to the objective severity of the breaches. SAPs are imposed to encourage the operator to comply or to dissuade them from committing another breach.
- Other possible recourse options For all breaches recorded, the MELCC never precludes the use of other forms of administrative and civil recourse available to it in order to prevent or ensure the cession of damage or harm to the environment. The minister's powers of decree allow for intervention in a range of situations. Powers to suspend or revoke environmental authorisations are also included in the law. Civil recourse (injunctions) can also be used.

Aside from the specific severity of each breach, the decision to focus on one or another means of implementing the law, be it criminal proceedings, an administrative pecuniary sanction (SAP), a ministerial decree or any other measure provided for by the law is determined according to the specificities of each case.

Breaches with minor consequences

- Notice of non-compliance
- Aims to inform the offender so that they take responsibility for the implementation of corrective action

Example:

Administrative breaches (failure to keep a record or delay in submitting an appraisal).

Breaches with moderate consequences

- Administrative pecuniary sanction
- Encourages a rapid return to compliance and dissuades against repeated breaches through the imposition of a monetary sanction determined by the law for each breach

Example:

Conducting unauthorised works on the banks of a river: 5,000\$ for a legal person.

Information on SAPs is published in a public register: <http://www.registres.environnement.gouv.qc.ca/sanctions/recherche.asp>

Breaches with severe consequences

- Criminal proceedings (Fines imposed by the court)
- Punishes the offender by imposing a severe fine in addition to any other order that the court may issue. Obtains social disapproval of the offender through the judiciary process and the public release of its findings.

Example:

Discharge into a public river of significant quantities of contaminants likely to cause harm to the aquatic fauna: Fine between 10,000\$ and 1,000,000\$ for a natural person and between 30,000\$ and 6,000,000\$ for a legal person.

An online register of criminal convictions is accessible to the public:

<http://www.registres.environnement.gouv.qc.ca/condamnations/recherche.asp>

General framework for the application of administrative pecuniary sanction

A General Framework for the application of SAPs specifies the main objectives and rules of application, as well as promoting equity and coherence in dealing with breaches. It specifies the criteria and objectives according to which recorded breaches result in ANC's, SAPs, criminal fines and any other administrative recourse such as ministerial orders.

Directive on the procedure for breaches of environmental legislation

In accordance with the General Framework for the application of SAPs, a directive on the procedure for breaches helps to correctly guide inspectors with clear rules and inform them how best to deal with different breaches of laws and regulations.

Insert n° 27 - Sanctioning powers - Restoring the public water sector in the Tagus Basin in Spain

*Javier Díaz-Pegañón Jimenez
Water Commissioner, Tagus Hydrographic Confederation, Spain*

Sanctioning power is the power of the government authority to impose sanctions through legal

procedure or one established by legislation. The sanction system, like the criminal justice system, has a dual purpose: prevention, so that citizens are aware that certain behaviour can lead to the application of the corresponding sanction; and sanctioning proper, for cases of known illegal behaviour in which a sanction is imposed through a regulated procedure, namely the repairing – where applicable – of damage caused, with the aim of restoring the situation to its state prior to the offence occurring.

As such, sanctioning activity is focused on the application of a sanction, the repair of damage through compensation and restoration to the former situation.

Within Hydrographic Confederations, the president of the basin has the power to apply the standards of the legislation on the public water domain in terms of water and river policing, including the sanction regime, within the scope of its jurisdiction (article 30.f of the TRLA and article 33.g of royal decree no. 927/1988 of 28 July 1988 approving the government's legislation on water and hydrological planning), and the water police in charge of handling the corresponding procedures and proposing decisions at the end of these procedures, where relevant by implementing the sanction, compensation and restoration of the public water domain to its initial situation (article 4.b of royal decree no. 1821/1985 of 1 August 1985 incorporating water police into Hydrographic Confederations and amending their organic structure).

With regard to the restoration of the public water domain, once the corresponding disciplinary procedure has been processed, with the obligation to restore the public water domain to its initial situation, and once the decision is deemed to be legally binding, the legal order provides for the possibility to apply the following enforcement procedures: penalties and/or subsidiary enforcement procedures.

These procedures are not mutually exclusive, as it is possible to initiate one or the other, or both, depending on the emergency or circumstances of the specific case, which must be determined by the administration.

Penalties: these consist of the imposition of repeated fines within sufficient time frames until full compliance with the obligation imposed in the sanction decision is achieved. These fines can run to 10% of the maximum sanction established depending on the qualification of the offence committed, and are part of a simple and effective procedure consisting of a warning and a decision.

The offender is warned, or reminded of the obligation imposed by the unfulfilled sanction decision, and given the option to implement it voluntarily within a time frame allocated to this effect. If they carry out this obligation, the procedure and case will be closed. If not, the appropriate fine will be imposed.

It is important to point out that, in the case of an enforcement procedure, the offender is given no time frame in which to argue their case, only to declare that they comply with the decision. However, the decision at the end of the procedure, in accordance with applicable legislation, will include options for recourse and the appropriate time frames in which the parties in question may defend themselves.

As previously explained, the procedure is simple – two administrative procedures, with the appropriate checks on site by the public water domain surveillance and inspection service – and effective, as they can be repeated until the obligation is entirely fulfilled. Generally, in the experience of the Tagus Hydrographic Confederation, the offender complies with the first warning, which causes a domino or

“word of mouth” effect with regard to other procedures or offenders in the same situation.

The obligation to implement may involve restoring the public water domain to its initial situation or triggering the administrative legalisation procedure, in the case of actions that can be legalised.

Subsidiary implementation: depending on the entity or the urgency of the obligation to implement, or if the penalty procedures have failed, the administration can have the decision implemented and order the restoration of the public water domain to its initial situation on behalf of the offender, but at the latter’s expense. As such, the offender must be warned and given a voluntary implementation deadline, with the explanation that failure to meet this deadline will lead to the introduction of a subsidiary implementation procedure by the administration, and to this end sending them an approximate quote based on the definitive budget that will be substantiated once the action is complete.

As with penalties, they are given given no time frame in which to argue their case as part of the proceedings, although the parties in question can do so in the event of administrative or legal recourse proceedings, which they can initiate once the decision of the procedure has been issued.

The implementation obligation can only consist of restoring the public water domain to its initial situation.

Insert n° 28 - The Quebec model governing criminal judicial procedures relating to environmental offences

Daniel Labrecque - Regional Director and Director of the Operational Support Bureau and Pecuniary Administrative Sanctions, Ministry of the Environment and the Fight Against Climate Change

Environmental criminal law

The aim of criminal law is to reprimand behaviour that runs contrary to public order and the well-being of society by imposing sentences. It therefore falls under repressive public order law. The Environmental Quality Act (LQE) is the main law covering offences under environmental criminal law. The majority of offences under environmental criminal law are strict liability offences. Any legal proceedings must therefore be able to prove all the constituent elements of the offence beyond reasonable doubt. As such, were the investigation file to be taken to court, the judge would need to be convinced of the absolute certainty of the commission of the offence rather than of probable guilt. The defence, meanwhile, must be able to demonstrate reasonable doubt in order to be acquitted of the offence. Among others, it might put forward a defence of reasonable diligence in order not to be found guilty of committing the offence.

Naturally, in order for criminal proceedings to be initiated, the offence must not have lapsed. As such, the different acts administered by the Ministry of the Environment and the Fight Against Climate Change provide for the following limitation periods. For example:

- The LQE provides for a limitation period of 5 years from the perpetration of the offence;

- The Pesticides Act provides for a period of 2 years from the commission of the offence;

Criminal investigation

Criminal investigations are conducted mainly through searches for documents and elements of evidence in the field, with an authorisation of entry signed by a judge, the execution of a search warrant and the analysis and collection of data required to develop evidence. The investigator may conduct interviews and question witnesses, take the statement of the alleged offender, carry out tailing and physical surveillance. Following this process, the investigator may also make appropriate recommendations for any criminal proceedings by prosecutors under the Director of Criminal and Penal Prosecutions, a body that directs criminal prosecutions for the ministry. The investigator must therefore be able to gather proof of the following elements beyond reasonable doubt:

- Identification of the offence (what);
- Date of the offence and date the offence was recorded (when);
- Location of the offence and the owner of the location(when);
- Identification of the offender or offenders and their role (who);
- Chronology of the events that led to the offence (how);
- The version of the offender and the different witnesses to assess the circumstances of the event (why).

The criminal investigation must be conducted in accordance with the protections conferred by the Canadian Charter of Rights and Freedoms, namely protection against unreasonable search and seizure, self-incrimination, the presumption of innocence, the right to a fair trial and the right to legal representation. As part of their duties, the investigator must be sure to protect the rights of the offender, in particular through a warning reminding them of their right to silence and right to legal representation. Were these guarantees not to be respected during the process of the investigation and even afterwards, this could result in the evidence acquired in contravention of these guarantees being excluded.

Insert n° 29 - Recovering public water sector land in the Tagus Basin in Spain

Javier Díaz-Pegañón Jimenez – Water Commissioner, Tagus Hydrographic Confederation, Spain

Certain sections of river have been occupied or overwhelmed by constructions, fencing and enclosures, made from sheet metal, wood or sometimes masonry. The occupied land is mainly used as kitchen gardens, but sometimes they are occupied by animals or people, with the obvious dangers that this presents to them, in the event of an exceptional occurrence or even when the flood discharge is reached, which is used to determine the public water domain.

Natural rivers, both continuous and discontinuous, are defined in the revised text of the law on water as property of the public water domain, meaning that their legal status draws on the principles of inalienability, imprescriptibility and non-seizability, as well as their decommissioning.

Moreover, under public water domain legislation article 50.3, under no circumstances is the construction, set-up or installation of facilities intended to house people, even provisionally or temporarily, and under article 242b, the basin organisation can, ex. officio, exercise the power to recover possession in the event of the effective occupation of the public water domain, even if not delimited, as long as the state-owned nature of the occupied property is clearly established, without prejudice to the appropriate disciplinary procedure. Similarly, in accordance with the law on government assets, article 55, the governmental power to recover possession of public property, in order to recover the unduly lost possession of properties and entitlements among their assets, as the procedure is defined in the general regulations of the aforementioned assets.

Consequently, when the occupation or invasion of a section of river is observed, the repossession procedure for land in the public water domain is initiated.

Practical example: informal settlement around the Henares in the municipalities of Alcalá de Henares and San Fernando de Henares (Madrid)

On the right bank of the Henares, in the municipalities of Alcalá de Henares and San Fernando de Henares, there was an informal settlement consisting of buildings, fences and enclosures near the shallow river. The peak flood discharge had flooded a large part of the settlement.



Two photos of the flooded camp

Although the majority of the informal settlement was inside land adjacent to the river, some areas were disputable. In order to consolidate the legal aspect of the matter, the process of surveying and boundary-marking this section of the river was initiated. At the end of this process, it proved that these disputable areas were indeed outside the public water domain.

The repossession process for land in the public water domain, which had been illegally occupied, was initiated at a later date. One of the major difficulties was identifying the people who owned the buildings,

kitchen gardens, etc., which is why we received the valuable support of staff from the Confederation's surveillance service and the local police from the municipalities in question.

The president of the basin organisation made a decision ordering the expulsion of the informal settlements within 30 days, in addition to the warning that the Hydrographic Confederation would conduct this itself in the event of failure to comply.

After the deadline had expired, the occupants had not left the premises. As there were some shut and locked buildings and enclosures, as well as a large number of animals, the appropriate judicial authority was asked to make a ruling in order to conduct an expulsion. Once the authorisation was obtained (for which the boundary-marking plans proved very useful), with the help of the national and local police, health services, the local SPA (society for the protection of, removals services and the use of the appropriate machinery and means of transportation to evacuate the materials to an authorised tip, the recovery of public water domain land was enacted.



Repossession officer for land in the public water domain

Current state of the Henares in the area where the informal settlement was located

Insert n° 30 - Sanctions to restore a temporary river used as a road in the Jucar Basin in Spain

Miguel Polo Cebellán - President of the Jucar Hydrographic Confederation

In Spain, water inspection and policing is based on the definition of the Public Hydraulic Domain and its surrounding zones (Policing Zone and Easement Zone), for which the public authorities implement their powers of inspection, examination and sanctioning.

The government has recognised the exercising of sanctioning powers, so that prohibited acts that do not constitute crimes are classified by the legal system as administrative offences. As such, it is possible to sanction this type of act through administrative channels, without having to go to court which, in any case, would always be an option in the event of recourse once the administrative route has been exhausted. This channel is initiated - and perhaps even resolved - by the basin organisations (Hydrographic Configurations), as the holders of jurisdiction delegated by the relevant ministry (usually the one in charge of environmental issues).

Hydrographic Confederations have environment officers who conduct actual water policing inspections in situ, in the field. These officers are recognised as “enforcement officers”, which implies the presumption of veracity in conducting their duties.

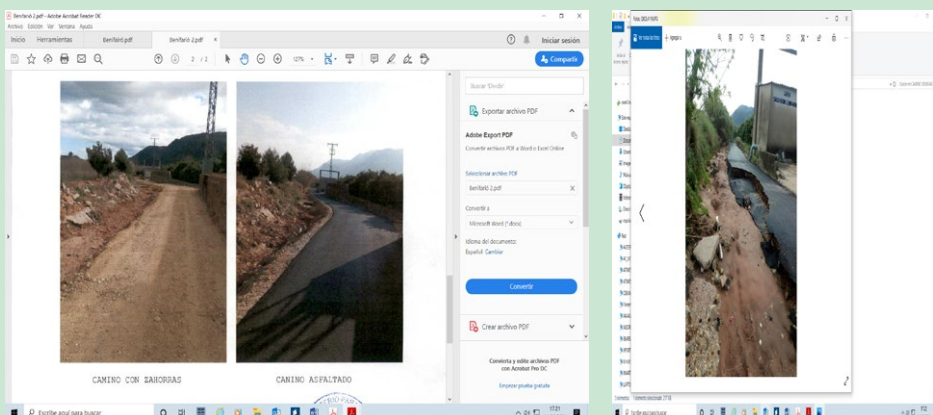
The Spanish legal system includes the administrative regulation of water policing activities, which covers all the prohibited acts and actions that constitute administrative offences and for which the sanction is determined and imposed by the relevant administrative authority for water. However, the water police have full enforcement capacity in the event of accidents or incidents affecting the public hydraulic domain.

From an operational perspective, in Spain, inspection and surveillance work is separate from the work of investigating cases in order to process requests from third parties. As mentioned, inspection and surveillance duties are conducted by environment officers, while the investigation of cases is conducted by basin organisation officers specialising in each of the different fields.

Practical examples:

- Sometimes, in areas with gentle gradients and intense agricultural activity, small public rivers with non-permanent flows have been used as roads, since time immemorial. This means that the entire population, including the local authorities, tend to believe that they are in fact roads and forget their status as rivers.

The following example demonstrates the case of a riverbed used as a road. After a few episodes of heavy flow, the road had naturally become mostly unusable. Farmers asked their municipal council to repair what they thought was a road. The municipal council therefore reconditioned the road along the riverbed, adding a layer of gravel and another of tarmac, as we can see in the first 2 photographs.



The environment officer reported the operation and disciplinary proceedings were initiated against the municipal council. A few months later, there was a heavy storm and the water reformed the riverbed, as shown in the following photo.

The municipal council ultimately removed the remains of the road and restored the canal to its original state.

The following example illustrates a similar case, but with different authorities in play and coordinated action required. This is the case of coastal action at the mouth of a river feeding into the sea. In order to stabilise a beach, a breakwater was built on the right bank of the river mouth, as we can see in the following photographs. In Spain, the coastal jurisdictions are shared partially between the central and regional administrations.

Constructing the breakwater required significant alterations to the river mouth and its hydraulic function. In the previous natural situation, the mouth of the riverbed was blocked by the transportation of coastal sediment (which was supposed to supply the beach downstream, to the right in the photos).

The construction of the breakwater had achieved some of the planned effects, with the gradual increase of the beaches downstream. The channel was permanently open and “connected” to the sea; the sand no longer entered the riverbed.

But there was another unwanted effect. This permanent open connection led to a large amount of algae residue (*posidonia oceanica*, with a strong presence in the area and with high environmental value), as the river did not have a permanent flow. This residue is trapped in the final river estuary, where it rots and decomposes, leading to a host of problems and inconveniences for the large population living in the region. Possible solutions to the problem described are currently being assessed.

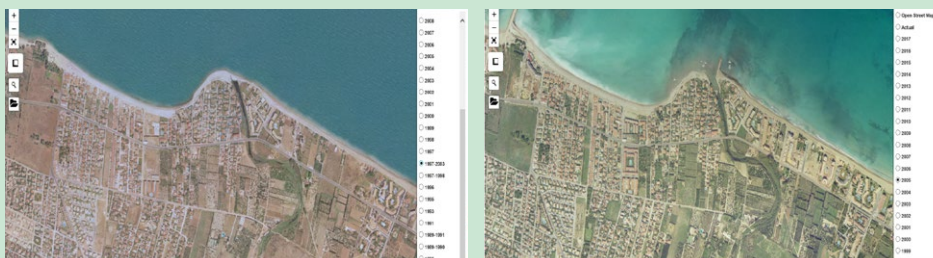


Photo before 2003 (without breakwater)

Photo from 2005 (with breakwater)

11 - BASIN MANAGEMENT PLAN AND WATER POLICING

- The basin or sub-basin management plans must comply with water policing legislation.
- The service in charge of water policing must help to develop basin management plans.
- An annual inspection plan must be drawn up in order to target management problems in basins and sub-basins and identify black spots, both in geographical terms and in relation to the uses and activities that affect the water resource and aquatic ecosystems (parameters involved).
- Each basin must draw up a multi-year management plan along with a programme specifying the actions to be promoted and conducted in the basin to resolve water resource management problems and lastingly improve their physiochemical and biological state. When developing this management plan, the decentralised administrations in charge of water policing must fully contribute in order to ensure that the plan complies with national water legislation and that the actions in the plan will reinforce implementation of the law. Conversely, by helping to develop their plan, the water policing services reinforce their knowledge of basin problems and, as a result, can adapt their actions according to field priorities, while pursuing the objectives defined on a national level by the water ministry.
- The management of flood and drought-related risks must be covered by crisis management plans, into which water policing must be integrated as a tool for implementing and applying rules and providing support with execution.
- This applies to the management of the crisis itself but also in advance of crises; for example, compliance with non-constructability rules in areas vulnerable to increased water levels, the application of the law regarding the protection of wetlands or maintenance work on riverbeds are just some of the means to include in the plans in order to help minimise risks.

Insert n° 31 - Basin planning and regional control strategy for water policing, France

Daniel Valensuela – INBO Secretariat (with the support of Michel Vignaud, Policy Officer, Police Service, OFB Regional Directorate Nouvelle Aquitaine

In each French region, a multi-year strategy for environmental policing inspections is developed with a section on water and another on biodiversity. The following example relates to the “water” section for the period 2015-17 in the Aquitaine region.

The procedure led by the DREAL (Regional Directorate of Environment, Land Settlement and Housing) intends to include around twenty services (sea, directorate of territories, coastal protection, forest bureau, national parks, directorate for population protection, etc.) in the development.

Before it is adopted by the regional Prefect, the project is submitted for assessment by various institutions and regional justice bodies (public prosecutor's departments).

Three priority inspection areas for the “water” section have been defined.

- Area 1 - Combating diffuse pollution by pesticides, nitrates and micropollutants
- Area 2 - Preserving wetlands and/or the efficiency of measures taken to compensate for their destruction
- Area 3 - Combating illegal works in rivers (including backfilling in flood-prone areas)

These areas represent the major challenges in the region, the significant pressure of which has harmful effects on the environment or is the subject of dispute on a European level.

As such, analysis of the state of water masses updated in 2013 showed that in the majority of cases, the main areas of man-made pressure represented a hindrance to restoring a good ecological state as defined by the framework directive on water relating to diffuse pollution (nitrates and crop protection products) or damage to the natural hydro-morphological characteristics of rivers that jeopardises their functioning.

Defining these priority areas for the three years in question does not mean that inspections falling under other areas do not also need to be conducted as required. In particular, adding to these regional priority areas, one or two specific priorities may be targeted on a departmental level, in response to the specific local challenges identified.

The regional strategy in Aquitaine develops actions around the following three fields:

- Water quality preservation (domestic pollution, industrial pollution, rainwater discharge and diffuse pollution);
- Quantitative resource management (abstraction and instream flow);
- Safety of hydraulic structures and flood prevention.

The following tables show a few examples of actions and inspections.

Theme: domestic pollution - Pilot services DDTM/ONEMA
Inspection objectives
<ul style="list-style-type: none"> ■ Improve STEU performance ■ Maintain the performance level of compliant plants ■ Prevent European disputes and guarantee the objectives of a good environmental state as per the WFD
Aquitaine objectives
<ul style="list-style-type: none"> ■ Achieve compliance for the 40 STEUs of over 2,000 PE still non-compliant in early 2014 under the ERU directive or locally (performance, in terms of equipment and/or collection) ■ Restore water masses deteriorated by domestic discharge to a good state

Priorities

Priority installations:

- STEUs non-compliant in terms of performance but compliant in terms of equipment (malfunctioning or environmental pollution): 14 STEUs of over 2,000 PE in early 2014
- STEUs subject to a formal notice (following a document inspection in particular)

Priority territories:

- Water masses in a poor ecological state as per the DCE (WFD) where pressure caused by domestic discharge is significant and classed as at risk of not achieving the objective of good ecological state in 2015 or 2021
- Water masses in very good ecological state where pressure caused by domestic discharge is likely to be significant
- UWWTD sensitive areas

Quantitative target: 20% of STEUs posing challenges

Follow-up proposals recommended in the event of a non-compliant inspection (to be specified for each department with the ONCFS and the ONEMA and to be approved by public prosecutor's offices)

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> ■ Non-compliance with prescriptions without harm to the environment: RMA + APMD (prefectoral decree of formal notice) where applicable | <ul style="list-style-type: none"> ■ Pollution causing minor harm to the environment : Official report to record the offence and proposal for an alternative to legal proceedings | <ul style="list-style-type: none"> ■ Pollution causing severe harm to the environment : Official report to record the offence and proposal for criminal proceedings |
|---|---|---|

Theme: diffuse pollution - Crop-protection products - services DDTM/ONEMA/DRAAF (Regional Directorate for Food, Agriculture and Forestry)

Inspection objectives

- Improve the quality of masses for which the objective to restore a good ecological and/or chemical state is set for 2015, 2021, 2027
- Maintain the quality level of water masses in a good or very good state (ecological and chemical)

Aquitane objectives

- Improve the quality of water masses subject to high pressure from crop-protection products by developing use practices for these products

Priorities

Priority territories:

- SDAGE "Pesticides" vigilance zones
- Edges of rivers or masses of water for which significant pressure caused by crop-protection products has been identified

Priorities	
Follow-up proposals recommended in the event of a non-compliant inspection (to be specified for each department with the ONCFS and the ONEMA and to be approved by public prosecutor's offices)	
< 30 linear metres from riverbanks	> 30 linear metres from riverbanks
<p>For all accused parties (farmers, local authorities, other professionals, private citizens):</p> <ul style="list-style-type: none"> ■ Official report with a legal warning as a reminder of the law upon initial observation ■ Official report recording the offence in the event of repeat offending ■ If the accused acknowledges the offence, proposal for legal fine including the follow-up of a specific education stage on the environmental impact of crop-protection products; proposal for legal settlement in other cases. 	<p>For all accused parties:</p> <ul style="list-style-type: none"> ■ Official report recording the offence with proposal for alternatives to legal proceedings (legal fine or legal settlement) in the event of minor impact on the environment (no treatment on the flood stage or stretch of riverbanks treated smaller than 100 m). ■ If there is significant impact on the environment (treatment on the flood stage or stretch of riverbank treated larger than 100 m). Official report to record the offence and proposal for criminal proceedings

Theme: Quantitative resource management - Instream flow
<p>Inspection objectives</p> <ul style="list-style-type: none"> ■ Maintain a sufficient flow in rivers upstream from structures
<p>Aquitaine objectives</p> <ul style="list-style-type: none"> ■ Guarantee priority uses can be met and the absence of severe harm to aquatic environments (ecological continuity) ■ Balance in the basins between abstractions and resource ■ Management protocol anticipating crisis situations ■ Guarantee sufficient flow whatever the period
<p>Priority:</p> <ul style="list-style-type: none"> ■ Checking the instream flow used by abstraction or storage installations: Installations blocking all or part of the river (storage reservoirs, hydroelectric dams, abstractions) ■ Priority territories: <ul style="list-style-type: none"> ■ Rivers vulnerable to low water levels ■ Rivers with migratory challenges
Follow-up proposals recommended in the event of a non-compliant inspection (to be specified for each department with the ONCFS and the ONEMA and to be approved by public prosecutor's offices)

Aquitaine objectives (continued)

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Equipment fault and non-compliance with prescriptions : RMA + APMD (prefectoral decree of formal notice) where applicable | <ul style="list-style-type: none"> ■ Non-compliance with prescriptions in violation of a ban or restriction during a drought period with minor harm to the environment ■ Official report to record the offence and proposal for an alternative to legal proceedings (legal settlement) |
|--|--|

Insert n° 32 - Flood risk management plan: riverbed conservation and recovery actions in the Tagus Basin

Javier Díaz-Pegañón Jimenez – Water Commissioner, Tagus Hydrographic Confederation, Spain

The natural development of riverbeds and riverside vegetation, as well as both ordinary and extraordinary episodes of high water levels, mean that rivers must be considered as dynamic ecosystems in which the relationship between the functioning of the hydrographic basin and the associated river dynamic is the key to the physical structure of the riverbed.

Environmental conservation and improvement works in the public hydraulic domain are those that aim to achieve the objectives set out in articles 92 and 92a of the TRLA and, in particular, damage prevention, the protection and the improvement of riverbeds in order to achieve or maintain the good state or potential of water masses as established in article 92b of the TRLA and to reduce the negative effects of floods and droughts in the rivers of the Tagus basin that encompasses the provinces of Ávila, Cáceres, Cuenca, Guadalajara, Madrid, Salamanca, Teruel and Toledo.

The consolidated text of the water act approved by royal legislative decree 1/2001 of 20 July (TRLA) includes the criteria of the Water Framework Directive (WFD)

As such, article 92 of the TRLA states the objectives for the protection of water and the public hydraulic domain: prevent damage, protect and improve the state of aquatic ecosystems, as well as the land-based ecosystems and wetlands that depend on them, and reduce the effects of floods and droughts.

More specifically, article 92a of the TRLA states that in order to achieve adequate water protection, environmental objectives must be met, by preventing the deterioration of the state of surface water masses and protecting, improving and regenerating all surface water masses in order to achieve their good state.

Article 94 of the TRLA assigns cross-community water basin commissioners the duties of inspecting and monitoring the public hydraulic domain, the inspecting and conducting surveillance of conditions and works related to concessions and authorisations in the aforementioned public domain and, in general, the implementing water and river policing legislation.

Under this regulatory framework, water commissions have conducted many conservation and maintenance actions in rivers over time, as well as developing numerous actions to reduce the damage caused by floods and droughts.

Similarly, royal decree 984/1989 of 28 July on the organic structure of hydrographic confederations states, in article 4, that among other duties the water commission is responsible for conducting simple conservation works for public canals.

In addition to the regulatory framework that regulates the powers of basin organisations, it is important to explain the planning instrument that governs conservation and recovery actions for rivers. These actions conducted by the CHT Water Commission are part of the Tagus basin high water level management plan, approved by royal decree 18/2016 of 15 January (BOE [official gazette of Spain] of 22 January 2016). This plan includes a series of programmes of measures to prevent flooding: River maintenance and conservation programme, protection against flooding (measures in rivers and floodplains: restoring rivers, including natural water retention measures and riverbank reforestation) and recovery and review measures following floods (actions targeting environmental restoration, through cleaning and riverbed restoration actions).

Actions are also conducted which, although not included in the plan, fall under the duties of the basin organisation, and refer to the support of relevant administrations (CCAA) for the control and eradication of invasive exotic species.

This type of action is conducted as follows:

- The DPH surveillance service is kept well informed through its periodical field visits or requests issued by private citizens, EELL, CCAA, and others.
- Analysis by the river engineering service, inspection visit and technical report.
- Decision-making: act or do not act. If the decision is made to act, request an environmental viability report from the Autonomous Community where the action is due to take place.
- Executing the action: payment to the contracting company for works through monthly certification; final execution report.

Example 1: river dynamic restoration operation through the removal of a structure built across the river; clearing of abandoned and disused elements from the river Lozoya in Alameda del Valle

River restoration measures are included in the river maintenance and conservation PGRI (Flood Risk Management Plan) programme, leading to the restoration of the natural behaviour of the floodplain and its associated values. The aim is to preserve and improve the state of the rivers with minimal intervention, wherever possible by respecting the environmental and natural values of the public hydraulic domain and reducing damage caused by flooding, resulting in numerous cases of damage to rivers.

This measure is essential in order to reduce both risk and danger, and is based on maintaining and improving the river's transportation capacity and the system for absorbing high water levels and riverbed erosion, by improving the speed of the current to remove obstacles (in this case, a barrier that crosses the Lozoya riverbed).

The gauge station was built under the direction of the environmental agency of the Autonomous Community of Madrid, to measure flow and then be used subsequently for the Isabel II Canal, although it was never used for this purpose. The infrastructure was therefore abandoned and left disused.

Since then, its existence has led to a reduction in the environmental quality of the Lozoya river, interrupting the continuity of the river, retaining sediment, making it difficult to restore fish species and deteriorating the natural river dynamic.

The removal of this infrastructure began in March 2019 and was completed later that year in August. It took place in two stages: the first consisted of removing all metal objects (railings, beams, metal elements inside the house) and the second, during the dry season, of removing concrete using mechanical means.



Abandoned gauge station on the river Lozoya



Demolition works at the gauge station

Example 2: Operation to restore the riverbed after an episode of heavy rainfall

After the heavy rainfall in December 2019, which affected several valleys mainly in the provinces of Cáceres and Ávila, actions to recover and restore the riverbeds were conducted by removing dead vegetation, reducing the risk of blockages in the rivers and improving their drainage capacity. These photos show the actions conducted in the Jerte valley.



Blockage of vegetation in the river Jerte, after flooding in December 2019



Clearing works in the river Jerte flooding in December 2019

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