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Legal stocktake: Water pollution and usage

Water is a strategic resource of economic, ecological and social importance in Andalusia (Junta de Andalucía, 2019^[1]). Water consumption per capita is particularly high in Spain and Andalusia. The consumption is mainly driven by the agricultural sector. Regarding households, water consumption was 133 litres per inhabitant per day on average in 2020 in Andalusia, close to the national average (Estadística sobre el Suministro y Saneamiento del Agua, 2020^[2]), but higher than the EU average of 124 litres per inhabitant per day (EurEau, 2021^[3]). Although 89.7% of the regional population is connected to wastewater treatment, only 4.8% of treated wastewater is reused in Andalusia, below the national average of 11.2% (Official Association of Biologists of Andalusia, 2021^[4]).

Regarding water pollution, the quality of surface water and groundwater is of great significance and is closely monitored in Andalusia. The quality is measured through the biological, hydromorphological, chemical and physical-chemical of water. The level of nitrates is one of the most relevant parameters to control water quality as it is closely related to the presence of fertilisers and wastewater discharges. Based on this parameter, the quality of surface water in Andalusia improved in 2019 as compared to 2018 as nitrate levels decreased in all hydraulic basins of the region, except in the Guadiana basin where levels remained stable and in the Guadalquivir basin where they increased (Junta de Andalucía, 2019^[11]).

This chapter proposes possible opportunities for reform to Andalusia's existing environmental tax system governing water pollution and usage. The proposed opportunities are derived from the analysis of the legal and policy framework governing water pollution and usage at the EU, national, and regional government levels and the analysis on the distribution of responsibilities in policy areas relevant to reducing water pollution and usage between the different levels of government (EU, national, regional and local). The key possibilities will be assessed against environmental tax policy principles in the economic analysis.

5.1. Legal framework on water pollution and usage

This section outlines the legal and policy instruments governing water pollution and usage at the EU, national, and regional levels. In doing so, it provides context on the policies, targets, and strategies in place for this environmental domain. This then serves as the basis for the subsequent section, 5.2, on the responsibilities across levels of government relating to water pollution and usage.

5.1.1. At the EU level

As part of the EU Green Deal (see Part II, Section 2.1.1), the EU Commission adopted the EU Action Plan “Towards Zero Pollution for Air, Water and Soil” (European Commission, 2021^[5]). The Plan sets a zero pollution vision for 2050, with the aim to reduce air, water and soil pollution to levels no longer considered harmful to health and natural ecosystems. The Action Plan also sets 2030 targets to reduce pollution at source, of which the improvement of water quality by reducing waste, plastic litter at sea by 50% and microplastics released into the environment by 30%. The Plan includes several actions, which comprise

the revision of the standards for the quality of water, including in EU rivers and seas. It also proposes a zero pollution hierarchy, integrating the precautionary principle and the polluter payer principle.

The EU Commission also adopted the **European Water Framework Directive (2000/60/EC)**, on 23 October 2000, which determines Spain's national water regulatory framework (European Commission, 2000^[6]). The Directive was developed based on multiple international conventions on water protection and management, notably the United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes, the Convention for the Protection of the Marine Environment of the North-East Atlantic, the Convention for the Protection of the Mediterranean Sea Against Pollution and its Protocol for the Protection of the Mediterranean Sea Against Pollution. It currently forms the backbone of water management in Europe. The Directive was established to overcome fragmented water policies tackling specific water-related domains and to provide an integrated framework for the protection and sustainable use of water within the EU (art. 1). To this end, it proposes a new water governance framework, which prescribes river basin districts as the managerial units for water management, defines water quality levels to be pursued and specifies limits to water abstraction. The Directive also determines that Member States shall follow the *"principle of recovery of the costs of water services, including environmental and resource costs associated with damage or negative impact on the aquatic environment should be taken into account in accordance with, in particular, the polluter-pays principle (art. 1)"* (European Commission, 2000^[6]). The EU Directives that are integrated into the Water Framework Directive are presented in the Box 5.1. The Water Framework Directive was transposed into national law via the Spanish Water law (Royal Legislative Decree 62/2003) (Gobierno de España, 2003^[7]).

The requirements under the European Water Framework Directive have been completed by other EU regulations transposed (or to be transposed) into Spanish law:

- The **EU Groundwater Directive (2006/118/EC)** sets the quality standards required by art. 17 of the Water Framework Directive (European Commission, 2006^[8]). This Directive establishes a regime that sets standards for groundwater quality and introduces measures to prevent and limit pollutants inputs into groundwater. The Directive has been transposed into Spanish law by Royal Decree 1514/2009 (Gobierno de España, 2009^[9]).
- The **EU Environmental Quality Standards Directive (2008/105/EC)** was developed to respond to art. 16 of the Water Framework Directive (Commission, 2008^[10]). It also provides the list of priority (hazardous) substances described in the Water Framework Directive (updated again in Directive 2013/39/EC). The Directive has been transposed into Spanish law by Royal Decree 60/2011 (European Commission, 2021^[11]).
- The **EU Water Reuse Regulation (2020/741)** sets minimum requirements for water reuse for agricultural irrigation from 2023 in accordance with the Directive 91/271/EC (European Commission, 2020^[12]). The Regulation was adopted as part of the new Circular Economy Action Plan (CEAP) adopted on 11 March 2020 (European Commission, 2020^[13]). It sets (i) harmonised minimum water quality requirements for the safe re-usage of treated urban wastewaters in agricultural irrigation, (ii) harmonised minimum monitoring requirements, (iii) risk management provisions to assess and address health and environmental risks, (iv) permit requirements, and (v) transparency on water re-usage projects. As an EU regulation, the objectives set are directly legally binding for EU Member States and thus Spain, without the need to be transposed into national legislation (see Part II, Section 2).

Box 5.1. Relevant European Union Regulation integrated into the Water Framework Directive

The **EU Nitrates Directive (91/676/EEC)** forms an integral part of the Water Framework Directive, serving as one of the most important instruments for safeguarding water quality against agricultural pressures by preventing nitrate pollution from reaching water bodies and by promoting sustainable farming practices. The Directive requires Member States to establish agricultural action programme measures to: (1) limit inorganic N fertiliser application; (2) limit organic manure application; (3) promote seasonal restriction on the application of slurry, manure and sludge on sandy and shallow soils; (4) maintain farm records on cropping, livestock and fertiliser application. The Directive was transposed into Spanish law by Royal Decree 261/1996, which entitles autonomous communities to develop programs to prevent and mitigate nitrogen contamination.

The **EU Plant Protection Products Directive (91/414/EEC)** - repealed by Regulation 1107/2009/EC – lays down rules for the authorisation, placing on the market, use and control of plant protection products (safeners and synergists). The precautionary principle underpins the provisions of the Regulation. Regarding water quality, it determines that authorisations can only be granted to products that prove not to be harmful to the environment, particularly to groundwater quality. It was transposed into Spanish law by Royal Decree 2163/1994.

The **EU Biocides Directive (98/8/EC)** – repealed by Regulation 528/2012/EC – concerns authorisation and placing on the market of biocidal products such as pesticides, herbicides, or fungicides. The precautionary principle underpins the provisions of the Regulation. In respect to water quality, it determines that authorisations can only be granted to products that prove not to be harmful to the environment, particularly to groundwater quality. The Directive was transposed into Spanish law by Royal Decree 1054/2002.

The **EU Bathing Water Directive (76/160/EC)** – repealed by the Directive 2006/7/EC – requires the Member States to monitor and assess the bathing water quality for faecal bacteria. It was transposed into Spanish law by Royal Decree 734/1988, and Directive 2006/7/EC incorporated into Royal Decree 1341/2007.

The **EU Drinking Water Directive (98/83/EC)** – recast in Directive 2020/2184 – sets the minimum quality standards for water intended for human consumption. These should be assessed using microbiological parameters and chemical parameters. It was transposed into Spanish law by Royal Decree 140/2003 - amended by Royal Decree 902/2018.

The **EU Sewage Sludge Directive (86/278/EEC)** concerns the use of sludge in agriculture. It aims to increase the amount of sewage sludge in agriculture whilst protecting the environment from heavy metals in soil and sludge. To this end, it sets limits for the concentration of heavy metals in sewage sludge and bans the use of sewage sludge that exceed these limits. It was transposed into Spanish law by Royal Decree 1310/1990.

Source: Author's own elaboration.

5.1.2. At the national level

In accordance with the European Water Framework Directive, the Spanish Water law (Royal Legislative Decree 1/2001, of July 20, 2001) determines river basin districts as the basic managerial units of Spanish water resources (Gobierno de España, 2003^[7]). Each river basin district is managed by a River Basin Authority. These authorities are responsible for establishing water management plans, which include the assessment of the water resources, an order of preference between the different uses of water, specific environmental objectives and measures to achieve the objectives therein (see below). The plans are

articulated through adaptive processes carried out through the continuous monitoring and reviewing of the current hydrological plan, which is updated every six years. These plans are currently on their third cycle, with the newest set of plans adopted for the 2022-2027 period (Ministerio para la Transición Ecológica y el Reto Demográfico, 2021^[14]).

In July 2021, the Spanish government adopted the National Plan for Wastewater Treatment, Sanitation, Efficiency, Savings and Reuse (DSEAR Plan) as a governance tool for the third cycle of the river basin management plans. The objective of the DSEAR Plan is to incorporate improved procedures and working methodologies, aligned with the principles of the environmental transition and the demographic challenge, into the updated river basin management plans. The Plan highlights seven areas for improvement based on lessons learnt from the two previous river basin management planning cycles, including for the co-ordination and co-operation mechanisms between the different administrations involved in river basin districts' management plans and to the economic and financial regime of water to adapt it to new challenges (Ministerio para la Transición Ecológica y el Reto Demográfico, 2021^[15]).

The plans are co-ordinated at the national level following these steps: (i) the objectives and criteria for hydrological planning are set out in the Spanish Water Law and the Hydrological Planning Regulation (Decree 907/2007) (Andalucía, 2015^[16]), and (ii) all hydrological plans are co-ordinated through the National Hydrological Plan, which harmonises all discrepancies and differences between basin districts. The National Hydrological Plan is elaborated through a participatory process involving the public sector and civil society. At the EU level, the hydrological plans are shared with the EU Commission, which publishes reports on the progress of implementation of the plans. This water management system implies that, although the central government establishes water-related levies (see below), they are managed and regulated by the river basin district authorities, who are ultimately responsible for determining their values in compliance with the Spanish Water law.

The Royal Decree 47/2022 on protecting waters against diffuse pollution produced by nitrates from agricultural sources was adopted in January 2022 and repealed Royal Decree 261/1996. It aimed to provide a stronger response to the problem of water diffuse pollution. The Royal Decree is based on the same instruments as the previous regulation, which include the designation of vulnerable areas, performance programs, monitoring programs and status reports. The Royal Decree also provides the possibility for River Basin Authorities to establish limits on new water concessions and other activities that may result in nitrate contamination (Gobierno de España, 2022^[17]).

5.1.3. At the regional level

In line with the Spanish Water law, Andalusia adopted the Andalusian Water law on 30 July 2010 (law 9/2010), which establishes a set of environmental objectives and principles on the treatment of water as an exclusively economic resource (Junta de Andalucía, 2010^[18]). The law regulates the responsibilities between the Autonomous Community of Andalusia and local governments with the aim to achieve water protection and sustainable water usage. More specifically, it regulates (i) the organisation of the river basin district authorities and their management plans, (ii) water works of interest of the Community, (iii) the supply, sanitation and purification system of urban water use, (iv) the assessment and management of flood risks, (v) the revenue earmarked for infrastructure of the integral water cycle and public service provisions, as well as (vi) the system of penalties for non-compliance with the rules governing water use. The law applies to continental, transitional, coastal and ground water integrated in intraregional and interregional basin districts that pass in the Andalusian territory.

In addition, and in accordance with the Spanish Water Law, the Royal Decree 1620/2007 establishes the legal framework for the reuse of treated water in Andalusia. The Royal Decree includes a list of permitted uses according to specific quality criteria in its Annex I.A (e.g. watering of private gardens, irrigation of urban green areas, street cleaning, irrigation of crops with certain water application system), and of prohibited uses (e.g. human consumption, food industry, hospital facilities, fountains, or any other uses

that may pose a risk on health or environment). It also guarantees quality control for the reuse of water (Gobierno de Espana, 2007^[19]).

In 2020, in anticipation of the third cycle of hydrological plans covering the period from 2022 to 2027, the Andalusian government also launched the Andalusian Water Pact in 2020 (Junta de Andalucia, 2020^[20]). The Pact established a participatory process in which public and private agents may discuss water-related issues to identify possible solutions. The approach focused on the investment priorities, the financial mechanisms and the governance systems of the autonomous communities.

5.2. Responsibilities related to water usage and pollution across levels of government

5.2.1. At the EU level

The EU's environmental responsibilities, as described above, are shared between the EU and Member States (art. 4) (European Union, 2012^[21]). In the area of water, the EU has the ability to establish environmental policies, notably on water pollution. Art. 192 of the TFEU however stipulates that policies relative to the quantitative management of water resources or affecting the availability of these resources shall be adopted unanimously by the Council, after consultation of the European Parliament, the Economic and Social Committee and the Committee of the Regions (European Union, 2012^[21]).

5.2.2. At the national, regional and local levels

As for the above-mentioned domains, the distribution of responsibilities between the different levels of government in Spain is defined in the Constitution and the Statute of Andalusia. They are listed in Table 5.1. The Constitution grants exclusive responsibilities to the central government on the legislation, management, and concession of hydraulic resources, the public works of general interest and the basic legislation on environmental protection (art. 149) (Gobierno de Espana, 1978^[22]). By contrast, the autonomous communities may assume responsibilities over projects of hydraulic uses, canals and irrigation of interest to the autonomous community, mineral and thermal waters, fishing in inland waters, shellfish and aquaculture, hunting and river fishing and the management of environmental protection (art. 148). Additionally, they can assume responsibilities in matters that may indirectly affect water resources, such as agriculture and livestock raising, woodlands and forestry and the promotion and planning of tourism within their territory (art. 148) (Gobierno de Espana, 1978^[22]). The responsibilities related to water for local governments are set out in Andalusia's Statute of Autonomy (Junta de Andalucia, 2007^[23]).

Table 5.1. Distribution of responsibilities relating to water use and pollution across levels of government in Spain

	Matter: Water
Central government	Exclusive responsibilities: Legislation, management, and concession of hydraulic resources and uses when the waters flow through more than one autonomous community (art.149.1.22); Public works of general interest or whose performance affects more than one autonomous community (art.149.1.24); Basic legislation on environmental protection, without prejudice to the responsibilities of the autonomous communities to establish additional protection standards (art. 149.1.23).
Andalusia	Exclusive responsibilities: Projects, construction and exploitation of hydraulic uses, canals and irrigation of interest to the autonomous community; Mineral and thermal waters (art.148.1.10); Fishing in inland waters, shellfish and aquaculture, hunting and river fishing (art. 148.1.11); and Management of environmental protection (art. 148.1.09). Managing the participation of the users, the guarantee of supply, parcel regulation and works of transformation, modernisation and consolidation of irrigation systems for the saving and efficient use of water (AS. 50.1). Adopting additional measures for the protection and sanitation of water resources and aquatic ecosystems, execution and exploitation of state-owned works if established by agreement; Managing competences of the hydraulic public domain attributed by national legislation (AS. 50.2). Matters that may indirectly affect water resources, such as: (i) agriculture and livestock raising, in accordance with general economic planning (art. 148.1.07), (ii) woodlands and forestry (art. 148.1.08), and (iii) the promotion and planning of tourism within its territorial domain (art. 148.1.18).
Provinces	Responsibilities: Securing co-ordination and provision of municipal services.
Municipalities	Responsibilities: Regulation, management and provision of the water supply and wastewater treatment (AS. 92)

Note: AS: Andalusian Statute.

Source: Author's own elaboration based on (Gobierno de Espana, 1978^[22]; Junta de Andalucia, 2007^[23]).

As previously seen, river basins districts are the base unit of the institutional framework for terrestrial water management in Spain. The management structure of a river basin district depends on whether the basin falls entirely within the borders of an autonomous community (intraregional) or whether it crosses regional boundaries (interregional). An intraregional river basin is managed by an Autonomous Water Agency, which reports to the autonomous community's regional government. By contrast, an interregional river basin is managed by a River Basin Authority that reports to the national Ministry of Environmental, Rural and Marine Affairs. The different bodies involved in terrestrial water management in Spain are described in Box 5.2.

Box 5.2. The institutional framework for terrestrial water management in Spain

There are several bodies involved in the Spanish terrestrial water management system, which are described below (Fuentes, 2011[84]).

- The **central government** is responsible for all water policy on resources shared by more than one autonomous community (Table 5.1). It hence oversees the river basin authorities, which monitor interregional river basin districts. The central government finances transport and supply infrastructure, partially through the river basin authorities. It also sets policy priorities, which are subject to EU Directives, in the national hydrological plans covering multi-year periods.
- The **National Water Council** is responsible for drafting the National Hydrological Plan and for providing recommendations on all policies affecting water resources nationally. It is made up of representatives from national, regional and local governments, as well as representatives from user associations (e.g. agriculture), scientists and non-governmental organisations. Central and regional governments usually hold a majority. Its composition, organisational structure and operations are regulated by the Royal Decree 1383/2009, adopted on 28 August 2009.
- The **River Basin Authorities** are responsible for the management of water resources, including groundwater, wastewater releases into natural water streams, public storage and long-distance transport infrastructure for interregional river basin districts. They develop and monitor river basin districts' management plans and administer water resources at the interregional level, including by granting concessions. They have a high degree of organisational, functional and budgetary autonomy. A **Competent Authorities Committee** coordinates all water-relevant policies of the governments and of the river district authorities. For By contrast, intraregional river basin districts are administered by an **Autonomous Water Authority**.
- **The autonomous communities** are responsible for natural resources, agricultural policies, subject to EU Directives and central government's guidelines, and the responsibilities listed in the Table 5.1. They fund transport and supply infrastructure for water resources that are not shared across regions, although some recent regional Statutes specify the creation of reserves from shared river flows. Through the Autonomous Water Authority, they have complete oversight over intraregional river basin districts.
- **Municipalities** are responsible for the supply and collection and treatment of wastewater (Table 5.1). They may provide these public services themselves or through licensed public or private enterprises.
- Water users (e.g. agricultural producers) are required to create **user associations** when they share a common concession or the same outlet. The associations establish norms for distribution and control, regulate the use and maintenance of shared hydraulic systems, organise the shared payments and resolve problems among members. They play an important role in the River Basin Authorities, in which they have assigned members in the users' assembly.

Source: (Fuentes, 2011[84]).

There are currently six river basin districts in Andalusia (Figure 5.1), which may be changed by Royal Decree. The river basin districts of Tinto-Odiel-Piedras, Guadalete y Barbate (both referred to as "Atlántica Andalusia" in the Figure), and Mediterráneo, fall entirely within the territory of Andalusia and are managed by the Andalusian Water Administration under the Andalusian Water law (9/2010) (art. 97 to 99) (Junta de Andalucía, 2010^[18]). The river basin districts of Guadalquivir, Guadiana, and Segura are interregional (or international, i.e. shared with Portugal in the case of Guadiana) basins and are thus managed by a River Basin Authority (Gobierno de España, 2007^[24]).



The Spanish Water law (29/1985), repealed by Royal Decree 1/2001 and consolidated in law 62/2003, established five levies related to water at the national level in Spain (Gobierno de Espana, 1985^[26]; Gobierno de Espana, 2001^[27]; Gobierno de Espana, 2003^[7]). In the case of interregional river basin districts, the below levies are managed and collected by the competent river basin authority or by the central government's tax administration in case of a previous agreement. In the latter, the river basin authority will share the pertinent data and information with the State Tax Administration Agency, which will collect the tax and make it available to the river basin authority.

The **hydroelectric development fee** (art. 112 bis): the holders of a hydroelectric exploitation are charged a fee for the use and exploitation of the public hydraulic domain for hydroelectric development purposes. The fee corresponds to the economic value of the hydroelectric energy produced by the holder of a hydroelectric exploitation for the use and exploitation of the public hydraulic domain, measured in plant bars, and declared by the holder in a self-assessment. It aims to finance the protection and improvement of the public hydraulic domain (Gobierno de Espana, 2001_[28]).

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is established by regulation depending of the nature of the pollution from the discharge. The fee aims to finance the assessment, control, protection and enhancement of the river basin district where pollution is emitted. When a taxable person of the pollution control fee also has to pay other taxes related to the protection, improvement and control of the river basin district, the amount of these taxes may be deducted from the amount of the pollution control fee (Gobierno de Espana, 2001^[28]).

The **regulation fee** (art. 114): the persons benefitting from surface water or groundwater regulation works², financed wholly or partially by the central government, are charged a fee to compensate the costs related to the building, operations and maintenance of these works. The fee corresponds to the sum of the expected operation and maintenance costs of the works carried out, the administrative costs related to the works and 4% of the value of the investments made by the central government (Gobierno de Espana, 2001^[28]).

The **water use tariff** (art. 114): the persons benefitting from other hydraulic works than those falling under the regulation fee (e.g. works to correct the deterioration of the public hydraulic domain) are charged a tariff to finance the investment, operation and maintenance costs of these works. The fee is calculated in the same way as the regulation fee (see above) (Gobierno de Espana, 2001^[28]).

National regulation also allows for the possibility of establishing the below levies:

The **irrigation charges**: irrigation water users of the same water concession are charged to finance the construction, maintenance and improvement of irrigation infrastructure in the Community³ (Royal Decree 849/1986) (art. 198 to 231) (Gobierno de Espana, 1986^[29]). These charges are regulated by each Irrigation Community (Gobierno de Espana, 2003^[7]).

The **amortisation rate and operating rate of water companies**: the rates are applied to compensate water companies for their costs associated with the investment, operation, and maintenance of hydraulic infrastructures. The contributions are paid by the River Basin Authority under the terms defined in an agreement between the water company and the River Basin Authority, which is regulated under the Spanish Water law (art. 126) (Gobierno de Espana, 2003^[7]).

The **fee for the occupation and use of the public maritime-terrestrial domain**: fee established to compensate the costs associated with the protection and enhancement of the maritime-terrestrial domain (Coastal Law 22/1988) (art. 84) (Gobierno de Espana, 1988^[30]). The fee is regulated under the Order of 30 October 1992.

The Autonomous Community of Andalusia created additional water-related levies. The Water law of Andalusia (9/2010) (Junta de Andalucia, 2010^[18]) established the following:

- **Improvement fee** (art. 72-78): the taxable matter is the urban use of water from any sources, whether supplied by public or private supply networks. The fee applies to water users (i.e. the holder of water supply contracts). If the users hold different water supply contracts, the fee shall apply on each of the contracts. The tax base is the volume of water invoiced by the water supply companies (expressed in cubic metres). The fee is levied through two modalities: (i) a regional fee (art.79 to 90) and (ii) a local fee (art. 91 to 96) It aims to finance hydraulic infrastructures for the provision of water supply, sewage, and wastewater treatment services. (Junta de Andalucia, 2010^[18]). The fee accounted for a small share of tax revenue in Andalusia in 2020 (close to 1%) (Ministerio de Hacienda y Funcion Publica, 2022^[31]). Under the Andalusian Decree-law 7/2022, this fee has been suspended temporarily from January 1st to December 31st 2023 in order to mitigate the effects of inflation on households and industries (Junta de Andalucia, 2022^[32]).
- **General services fee** (art. 114): the aim of the fee is to cover administrative expenses of the Andalusian Water Administration to guarantee the proper use and conservation of water (Junta de Andalucia, 2010^[18]). This fee still remain to be implemented (Adame Martínez, 2020^[33]).

Andalusia established another levy, which is regulated under the Andalusian Law 18/2003 on fiscal and administrative measures (Junta de Andalucía, 2003^[34]):

- **Tax on discharges into coastal waters** (art. 39 to 55): the taxable matter is the discharge to coastal waters, which is carried out from land to any maritime-terrestrial public domain or to its area of protection. The tax is levied on the persons who carry out discharges into the maritime-terrestrial public domain. The tax base is the amount of the pollutant load of the discharge, which is equal to the sum of the polluting units. The polluting units of each parameter of the discharge (established in Annex I of the law) are the discharge flow (in thousand m³ per year) multiplied by the value of a parameter, divided by a reference value in accordance with the Annex I of the law. The aim of the tax is to promote the good chemical and ecological status of coastal waters (Junta de Andalucía, 2003^[34]). The tax represented a negligible amount of revenue in Andalusia in 2020.

Finally, municipalities may establish fees under the Urban Water Supply Regulation (Decree 120/1991) (art. 94 to 104) (Junta de Andalucía, 1991^[35]):

- **Municipal fees for the provision of water supply, sewage, and wastewater treatment services:** municipalities may establish fees related to the provision of water supply, sewage and wastewater treatment services. The fees are levied on users of drinking water, sewerage and wastewater treatment services in a given municipality. They may consist of a fixed part per user and/or a variable part depending on the volume of water invoiced (in m³). Several types of use may be identified (i.e. domestic, commercial, industrial, official bodies and other uses). The fees aim to compensate the local water supply company for the operating costs associated with the provision of urban water services (e.g. supply of drinking water, sewage and wastewater treatment). The municipality is responsible for developing the specific regulation of each fee. Special surcharges may also be established for operations other than water supply, connection supply, service connection charges, contracting fees, charges for the financing of infrastructure, deposits and specific services (Junta de Andalucía, 1991^[35]).

A list of existing water-related levies in Spain, including those levied by the autonomous communities, is provided in Table 5.2.⁴ The levies are structured according to their domain (i.e. freshwater or maritime) and category (i.e. water abstraction, water usage and water pollution).

Table 5.2. Existing levies related to water in Spain

Water domain	Category	Levy	Competence	Taxable matter	Payer
Freshwater domain	Water abstraction ¹	Fee for the use of public hydraulic goods	National	The occupation, use, or exploitation of hydraulic public domain assets in the channels of natural currents, continuous or discontinuous, and in the beds of lakes and lagoons and those of surface reservoirs in public channels.	Concessionaires and authorised persons for the use or occupation of public hydraulic domain.
		Hydroelectric development fee	National	The use for purposes of hydroelectric exploitation of the dams of the reservoirs or the channels built with funds from the Public Administration. Said use must be foreseen in the corresponding District Hydrological Plan.	Holders of a hydroelectric exploitation.
	Water usage ²	Regulation fee	National	The availability or use of water flows for irrigation, population supplies, industrial uses or uses and installations of any kind, which are benefited or improved by	Persons benefitting from surface water or groundwater regulation works.

				regulation hydraulic works.	
		Water use tariff	National	The availability or use of water flows for irrigation, population supplies, industrial uses or uses and installations of any kind, which are benefited or improved by specific hydraulic works.	Persons benefitting from other hydraulic works than those falling under the regulation fee.
		Irrigation charges	National	The use of hydraulic infrastructure from the Irrigation Community.	Irrigation water users of the same water concession.
		Amortisation rate and operating rate of water companies	National	Availability and use of the water resources generated from the hydraulic infrastructures built by the State Water Companies	Contributions are paid by the River Basin Authority.
		Improvement fee	Regional	The availability and urban use of drinking water from any source, supplied by public or private supply networks. Water losses in the supply networks will be assimilated to urban use.	Water users (i.e. the holder of water supply contracts).
		General services fee	Regional	Performance of activities and the provision of general administration services of the Public Administration, which directly or indirectly affect the conservation and exploitation of hydraulic works, as well as the different uses and exploitation of groundwater and surface water.	Water users.
		Municipal fees for the provision of water supply, sewage, and wastewater treatment services	Local	Obtaining management services for the urban water cycle, which include drinking water supply, sewerage and wastewater treatment.	Users of drinking waters, sewerage and wastewater treatment services in a given municipality.
Maritime domain	Water pollution	Pollution control fee	National	The realisation of discharges to the hydraulic public domain.	Persons who carry out discharges into the public hydraulic domain.
	Water usage	Fee for occupation and use of the public maritime-terrestrial domain	National	The occupation or use of maritime-terrestrial public domain assets.	Concessionaires and authorised persons for the use or occupation of maritime-terrestrial public domain.
	Water pollution	Tax on discharges into coastal waters	Regional	Ecological tax to be paid by those who discharge into the maritime-terrestrial public domain in order to promote the good chemical and ecological status of coastal waters.	Persons who carry out discharges into the maritime-terrestrial public domain.

Notes:

1. Water abstraction refers to the process of taking or extracting water from a natural source.
 2. Water usage refers to various uses of water, including drinking, irrigation, treatment and industrial applications.
- Source: Author's own elaboration.

The below table presents different water-related levies that exist among the autonomous communities in Spain (at the exception of Navarra and the Basque Country) (Table 5.3).

Table 5.3. Levies on water in the Spanish Autonomous Communities

AND	CAT	GAL	AST	CANT	RIO	MUR	VAL	ARA	CLM	CAN	EXT	BAL	MAD	CYL
Improvement fee (<i>Canon de Mejora</i>) on urban water user	Water fee (<i>Canon del Agua</i>)	Water fee (<i>Canon del Agua</i>)	Tax on environmental effects of water use (<i>Impuesto sobre las afecciones ambientales del uso del agua</i>) on water use (agriculture exempt)	Wastewater fee (<i>Canon del agua residual</i>) on wastewater generation (agriculture exempt)	Sanitation fee (<i>Canon de saneamiento</i>) on wastewater generation (measured through water usage; agriculture exempt)	Sanitation fee (<i>Canon de saneamiento</i>) on wastewater generation (measured through water usage)	Sanitation fee (<i>Canon de saneamiento</i>) on wastewater generation (measured through water usage)	Water pollution tax (<i>Impuesto sobre la contaminación de las Aguas</i>) on wastewater generation (measured through water usage; agriculture exempt)	Adduction fee (<i>Canon de aducción</i>) on the water supply services	Desalinization fees (<i>Tarifas desalinizadoras</i>) – Charges the use of desalinated water	Sanitation fee (<i>Canon de saneamiento</i>) on wastewater generation (measured through water usage; agriculture exempt)	Sanitation fee (<i>Canon de saneamiento</i>) on wastewater generation (measured through water usage; agriculture exempt)	Sanitation fee (<i>Canon de saneamiento</i>) on wastewater generation (measured through water	Adduction fee (<i>Canon de aducción</i>) on the water supply services
General services fee (<i>Canon de servicios generales</i>) to cover administrative costs (to be implemented)	Charges water use (agriculture exempt)	Charges water use (agriculture exempt)				Tax on discharges into coastal waters (<i>Impuesto sobre vertidos a las aguas litorales</i>) on maritime water pollutanters not connected to public infrastructure		Environmental tax on certain uses and exploitation of water reservoirs (<i>Impuesto medioambiental sobre determinados usos y aprovechamientos de agua embalsada</i>) on hydropower generation	Water treatment fee (<i>Canon de depuración</i>) on water treatment services (measured in outflow of water treatment facilities)	Insular council fee (<i>Tarifas del Consejo Insular</i>) on the use of reuse water (including agriculture)			Reuse water fee (<i>Tarifas de reutilización</i>) on the use of reuse water (including agriculture)	Water treatment fee (<i>Canon de depuración</i>) on water treatment services (measured in outflow of water treatment facilities)
Tax on discharges into coastal waters (<i>Impuesto sobre vertidos a las aguas litorales</i>) –		Tax on the environmental damage caused by the construction and use of water reservoirs (<i>Impuesto sobre el daño medioambiental agua embalsada</i>) on hydropower generation												
Charges maritime on		Discharge coefficient												

water polluters		(Coeficiente de vertido)												
		Charges wastewater generation												

Note: AND: Andalusia; CAT: Catalonia, GAL: Galicia, AST: Asturia; CANT: Cantabria; RIO: La Rioja; MUR: Murcia; VAL: Valencia; ARA: Aragon; CLM: Castilla-La-Mancha; CAN: Canaria; EXT: Extremadura; BAL: Balears Islands; MAD: Madrid; CYL: Castilla-y-Leon.
Source: Author’s own elaboration.

5.4. Possibilities for improvements to water-related taxation in Andalusia

This section identifies some opportunities to reform the environmental taxation related to fresh water pollution and usage in Andalusia. It is structured as follow: (i) water abstraction, with a focus on the agricultural, industrial and tourism sectors, (ii) water usage, with a focus on the agricultural, industrial and tourism sectors, and (iii) water pollution, focusing on taxes related to the use of fertilisers and pesticides. As for the chapter on GHG emissions and air pollution, it also includes opportunities at the national level, which may improve environmental outcomes in Andalusia. The opportunities presented result from the analysis of the legal framework, the responsibilities mapping and the existing levies in Spain as discussed in the previous section. A selection of these opportunities will be further analysed from an economic perspective in Activity 1.3 of the report. Case studies on the use of such instruments in other countries and Spanish regions will also be included. Where relevant this discussion looks at related aspects such as distributional consequences and health.

5.4.1. Water abstraction and usage: agriculture, industry and tourism

Improvements in taxation related to water abstraction for agricultural and industrial purposes represent important possibilities of reform in Andalusia. The main possibility identified at the regional level is the creation of an Andalusian levy for water abstraction. Additional opportunities exist at the national level, which are presented below. The White Book for Tax Reform in Spain also provides recommendations on taxation related to water abstraction in Spain (Box 5.3).

Possibility 1 (regional or national): creating a regional or national levy on water abstraction

The current levies related to water abstraction do not reflect the environmental costs of this activity. The entities abstracting water only pay for water abstraction concessions granted by River Basin Authorities, regardless of the volume of water abstracted (Greenpeace, 2019^[36]). The levies are associated to the use of exploitation sources of water (e.g. fee for the use of public hydraulic goods) and hydraulic infrastructure (e.g. irrigation charges).

Possibility 2 (national): developing incentive mechanisms on sustainable groundwater abstraction for Irrigation Communities

Irrigation charges determined by Communities often do not consider the environmental costs of water abstraction. Most Communities only consider the compensation required for developing and maintaining irrigation infrastructure in their charges (Fuentes, 2011^[37]).

The central government has the opportunity to create a legal provision for enabling River Basin Authorities to develop mechanisms able to incentivise sustainable groundwater abstraction for Communities (e.g. charge on groundwater abstraction to users in Communities abstracting water persistently above a sustainable level) (Fuentes, 2011^[37]).

Possibility 3 (regional): creating a tourism tax with an environmental criteria

There is no tourism tax that integrates the environmental cost of touristic activities. Such a tax at the regional level could cover all water-related environmental costs emerging from touristic activities. The tourism tax could be considered horizontal and incorporate several criteria related to water and waste for example.

5.4.2. Water pollution: pesticides and fertilisers

Most of the current mechanisms for limiting the use of fertilisers and pesticides are associated with (i) water quality standards, (ii) the limits to the use of pesticides and fertilisers and (iii) the bans on specific chemicals. The Spanish Constitution allows Andalusia to implement stricter water quality standards within its territory. The White Book for Tax Reform in Spain also made a recommendation on taxation related to water pollution (Box 5.3).

Possibility 4 (national): creating a tax to disincentivise the use of pesticides and fertilisers

The EU provides a wide range of water quality standards regulations, which have been translated into Spanish law, granting the autonomous communities the power to develop programs to prevent and mitigate water pollution. Many of these standards concern pollutants strictly associated with agricultural activities (e.g. nitrogen and phosphorus).

A national tax on the manufacturing or importation of pesticides and fertilisers could be established. This tax could be accompanied by public campaigns to raise awareness on the risks associated with these chemicals and the benefits of adopting more sustainable agricultural practices. The revenue from the tax could be used to compensate farmers switching to more sustainable agricultural practices (Adame Martínez, 2020^[33]).

Other experts have suggested be to link water concessions for water abstraction by Irrigation Communities to water quality standards by amending the Spanish Water law (Greenpeace, 2019^[36]; Ministerio para la Transición Ecológica y el Reto Demográfico, 2020^[38]). Successful cases of taxes on the manufacturing and importation of fertilisers and pesticides exist in Norway and Sweden (Adame Martínez, 2020^[33]; Gago et al., 2006^[39]).

Box 5.3. Recommendations from the White Book on taxes related to water

The White Book for Tax Reform in Spain provides several recommendations related to water taxation to help improve water quality and fight against water scarcity (Table 1.2).

1. Introduction of coordination and cooperation measures to improve the design and effectiveness of regional taxes on environmental damage to water

Some autonomous communities have established taxes on environmental damage caused by the use and exploitation of water reservoir (e.g. Galicia, Castilla y León and Aragón), which led to litigation and, according to the Committee, raises doubts about their environmental effectiveness. The Committee recommends to intensify the environmental characteristics of these taxes.

Regarding taxes on discharges into coastal waters, Andalusia and Murcia have been pioneers in their establishment. The Committee of experts recommends to exempt from these taxes the direct reuse of reclaimed water that have a concession or authorisation, as there is no discharge in these cases, and the discharges into coastal waters of desalinated waters.

2. Reform of fees associated with coverage of hydraulic infrastructure costs

The national fees associated with the coverage of the costs of hydraulic infrastructures (e.g. the regulation fee and the water use tariff) price the benefit on the use of water (i.e. availability of the resource, improvement) resulting from hydraulic works financed by the central government. The Committee considers these fees as deficient with a high degree of litigation since it is difficult to identify the scope of the beneficiaries for each work and there is a lack of clarity in the liquidation of the rate. The Committee recommends to review these fees to improve both qualitative and quantitative elements of their design to shift from a "quota levy" to a levy able to recover water environmental and resource costs.

3. Creation of a tax on the extraction of water resources

The Committee proposes the creation of a national tax on water extraction to incentivise the proper use of a scarce resource. The tax would be carried out by the central government and not transferred to the autonomous communities. The taxable matter would be the extraction of water for any use, in order to tax the use of a resource belonging to the public domain. The tax base would be the volume of water extracted and the fee would be proportional to it. The Committee also underlines that a use factor could be applied, as well as a territorial factor, depending on the difficulties of extraction.

4. Creation of a national tax on the nitrogen content of fertilisers used in agriculture

The Committee also suggests the creation of a national tax on the nitrogen content of fertilisers used in agriculture, combined with a VAT increase for these products to reduce diffuse nitrate pollution in Spanish water bodies.

Source: (Comité de personas expertas, 2022^[40]).

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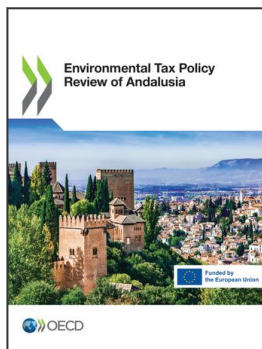
Notes

¹ The hydraulic public domain (*Dominio Publico Hidraulico, DPH*) refers to inland surface and underground waters, the channel of continuous or discontinuous natural currents, beds of reservoirs and lakes. Marine waters are not included in the hydraulic public domain. Administrative authorisation is required for the use of the hydraulic public domain when the objective is to carry out works, to plant or cut vegetation, to navigate, to extract aggregates, to establish bridges, piers, etc. (Gobierno de Espana, 2001^[28]).

² Regulation works or canalisations are systems of water conduction, channels and natural or artificial reservoirs.

³ A Community refers to all the users of the water and other goods of public hydraulic domains from the same intake or concession. It has been established and regulated by art. 81 of the Spanish Water law (Gobierno de Espana, 2003^[7]). Their establishment is compulsory. Communities are governing bodies with their own Statutes and Ordinances, drafted and approved by themselves and then by the River Basin Authority, which can only refuse their approval or introduce variants. There are different categories of Communities based on their use (e.g. irrigation, water supply, industrial). They can be surface or groundwater. If the concession of the waters involves several intakes, the Basin River Authority shall determine whether all the users are to be integrated in one Community or several independent Communities.

⁴ The full description of water-related taxes (e.g. taxable matter, payers, destination) in Andalusia is available at the following link: <https://www.juntadeandalucia.es/medioambiente/portal/areas-tematicas/agua/gestion-del-agua/recuperacion-de-costes/tarifas-y-canonos-uso-agua-dominio-publico-hidraulico-dph-y-dominio-publico-maritimo-terrestre-dpmt>.



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