The current challenge of water management in large cities

Water is an essential and transversal asset for economic development and social well-being. Water management in large cities, with demographic tension and adverse climate events, has been a real challenge for authorities and experts on the subject.

Big cities have changed dramatically over the past few decades, and this has also impacted – in a very positive way – water management. After the Industrial Revolution, urban models could be classified as rigid, with a high concrete component. **"This type of urban planning is characterized by the waterproofing of existing surfaces**, so that, where there was previously a large area of land capable of absorbing water, we now find the same surface where we only have small drains through which rainwater can drain to reach the sewer network," states Carmen Hernández de la Vega, Technical Coordinator of AEAS (Spanish Association of Water Supply and Sanitation).

In a climate change context, where extreme phenomena are becoming more frequent and intense, cities have been adapting and integrating elements that protect infrastructure and ensure the continuity of life in cities and **many of them are inspired by nature itself.** "These paradigm shifts are enabling a rewilding of cities, bringing a multitude of benefits such as permeable pavement or flood zones," the expert said.

Highest impact environments

An effective and sustainable water management policy substantially improves the quality of life in large cities by **ensuring supply in times of drought and mitigating flooding.** These measures have an even more relevant impact on the medium and small municipalities, which are the ones that have the greatest problems with these types of difficulties.

> **"We can be proud of the fact that, in this case, Spain pioneered water management through hydrographic confederations"**

"If we speak of water management, it is important to implement it at the watershed level and gradually drill down, since any action or impact can have downstream repercussions. We can be **proud** of the fact that, in this case, Spain pioneered water management through hydrographic confederations," Hernández de la Vega says.

Another front that matters most to organizations responsible for water management is the case of

extreme rainfall, changing events and increasingly frequent ones. To prevent water collapses, today's infrastructures have external "spillways" that dump the surplus they are unable to manage.

Although this measure is effective, the regularity of these episodes has alerted the authorities, so **other complementary solutions are already being sought**, such as railings and thick retention elements, that prevent the exit of large materials in the spills, as well as the existence of storm tanks that allow storage.

Spain's situation

When we speak of water management on a national scale, it is necessary to refer to the sixth Sustainable Development Goal (SDG6) of the 2030 Agenda adopted by the UN in 2015, whose most relevant goals are **to ensure universal access to drinking water, improve the quality of water resources and reduce the scarcity we face as a planet.**

> **"We have to remember that the country is currently experiencing severe drought with little precipitation"**

"One of the most important points is access to water and it can be said that in Spain it is guaranteed. Indeed, one of the things that allows and ensures **urban planning and land management** is the connection of all dwellings. If there were to be a problem in our country, it would not be due to lack of connections, but rather due to lack of water or its quality," the specialist said.

However, we have to remember that the country is currently experiencing severe drought with little precipitation, against which AEAS proposes correct hydrological planning, together with adequate special drought plans, which can only be addressed with forecasting, early detection and agility in decision-making and response measures. To achieve this, **the association recommends placing water in a priority position within the political agenda** to achieve the investment necessary to face its impact and optimize highly stressed infrastructures, improving their quality.

Greatest future challenges

Today, the biggest challenge of sustainable water management in Spain is related to water scarcity, an increasingly severe situation due to increased demand, land urbanization and intensive agriculture. Given this situation, Hernández de la Vega considers it essential to implement **public policies and strategies** as soon as possible to improve the management of this resource in the long term.

At AEAS, they point to two recent legislative texts that go that way, as they expand the obligations and requirements that the sector must meet. These are the **Royal Decree that passes through the Water for Human Consumption Directive**, approved by the state administration, **and the revision of the Urban Waste Water Directive**, by the European Commission.

The main challenge is the increase in demands that require greater economic effort in a context where we find significant **inconveniences**, such as:

- Lack of infrastructure renewal.
- Increased energy and CPI costs.
- A rate well below the European average.
- Water management outside the political agenda.

“We are a structurally water-scarce country and the aridity is going to extend more and more, so we can’t afford to continue in this situation. We must move forward to keep the urban water sector sustainable. In this way, we will maintain quality standards, which have thus far characterized an **essential and vital service** for society, the economy and the environment,” concludes the AEAS Technical Coordinator.

Contributor to this article:

The Spanish Association of Water Supply and Sanitation (AEAS) is a non-profit organization that represents public and private operators of the water sector in Spain through activities, publication of studies and technical guidelines.

Among its main objectives are to promote the continuous improvement of water management, foster collaboration among the various actors of the sector and contribute to the development of public policies that ensure access to hygiene of water.

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