Position paper

Water Resilience

Water is the source of life. It sustains our way of life, our flora, and our fauna. It is also essential in growing fruit, vegetables, flowers, and plants. Clean and sufficient water therefore forms the basis of a healthier, greener, and happier Europe. To ensure high water quality and access to clean drinking water for everyone, controlled environment agriculture (CEA) is committed to net-zero emissions, smart reuse of wastewater, and storing rainwater. Water circulation supports our growers to grow already extremely water-efficiently healthy food and floriculture while minimising emissions. Accelerating access to biocontrol and resilient crops and optimising Integrated Pest Management (IPM) will bring our ambition of net-zero emissions by 2027 even closer. To building a resilient and water-smart Europe, CEA welcomes the Water Resilience Strategy.

Fruit and vegetables are not just delicious but healthy too. Europe's growing and aging population does not just need more healthy nutrition in order to be fed, but also to foster its public health and well-being. Meanwhile, flowers and plants green and cool our cities, restore biodiversity, mitigate climate change, and improve people's health.

To meet year-round demand for fruit, vegetables, flowers, and plants in Europe, high-tech systems like CEA enable these crops to be grown as water-efficient as possible. On a small area, our growers achieve five times higher yields compared to conventional farming while using a minimal amount of water, nutrients, and plant protection products (PPPs). Since almost all water is reused and outputs are degraded in (joint) wastewater treatment systems, CEA is a true water champion in both quantity and quality. By securing sufficient and clean irrigation water for recirculation and further applying innovative techniques, our growers could recover even more water. Closing our water cycle and adopting biocontrol and plant-based nutrients will further minimise our footprint.

Restoring and protecting the water cycle

Europe is affected more and more by extreme weather. Climate change causes more heavy rainfall, droughts, and heat waves along the year and across the continent. CEA is eager to contribute to preventing and mitigating water scarcity and droughts in the EU. Reuse and recycling of wastewater lowers water demand, whereas smart rainwater storage prevents flooding and tackles water scarcity.

CEA has almost a closed water cycle, allowing our growers to use very little water per harvested fruit, vegetable, flower, and plant. Sufficient irrigation water of good quality, however, remains essential to maintain our water recirculation through our wastewater treatment systems. Rainwater is our basis, but is often not enough to get through summer regardless of storage in winter. Desalinated groundwater is hence commonly used as a supplement. Cleaning this brackish groundwater via a filter provides us with pure irrigation water — i.e., free of salt and dirt — in a sustainable way. This technique of reverse osmosis is now also being tested by water companies to improving access to drinking water for all.

Adopting a source-to-sea approach, more and more rainwater from neighbouring roofs, homes, or industrial sites is collected and stored in our reservoirs to further ensure sufficient irrigation water during droughts. These reservoirs are even used by local water authorities to prevent floods. Emptying our reservoirs a few days before heavy showers arrive, allows us to capture rainwater as much as possible and thus avoid flooding. This way, communities weather the storm while our plants enjoy sufficient water year-round.

To restoring and protecting the water cycle:

- The **Water Framework Directive (WFD)** shall allow the ability to extract and desalinate groundwater in case of local water scarcity – including the discharge of residual brine deep down where groundwater is as brackish. This freshwater source is crucial to maximise water reuse in CEA as well as a vital source of drinking water. That makes reverse osmosis a key pillar of European water resilience. Infiltrating rainwater in the soil could balance any environmental concerns of this innovation.
- The **Technical Guidance on Drought Management Plans** should stimulate (local) governments to explore possibilities for innovative sources of water supply and water storage with growers to ensure irrigation of our fruits, vegetables, flowers, and plants during droughts. To promote robust freshwater provision and effective drought mitigation in (coastal) regions, underground water storage solutions should be encouraged, including through setting realistic and science-based standards for the quality of water stored in subsurface reservoirs.
- The **Floods Directive** should encourage flexible water storage by CEA's reservoirs in close cooperation with local water authorities to prevent flooding.

Building a water-smart economy
CEA is a water-smart way of growing fruit, vegetables, flowers, and plants as it employs advanced technologies — e.g., hydroponics and closed-loop irrigation systems — to lessen water consumption compared to conventional farming. By recycling water, minimising evaporation, and precisely targeting plant needs, CEA achieves up to 90 per cent water savings. This enhances our water efficiency, reduces our dependency on freshwater resources, and builds a water-resilient economy in Europe.

To foster safe water reuse, CEA aims at utilising residual wastewater streams from others. In addition to capturing their rainwater, treated wastewater from sewages, processing industries, or manufacturing could easily be filtered and reused for irrigation too. This circular use of water reduces CEA's freshwater demand considerably. Adequate infrastructure is required to arrange this water exchange. Constructing pipes to transport water remains yet unprofitable, preventing this reuse from coming to fruition. Often, this grid has a longer, technical, and economic lifespan (>30 years) than the contract period considered maximum by companies (15 years). At the same time, this reused water is in CEA only needed for a short time during harvest season, making it an uneconomic irrigation option. Water reuse infrastructure is at the heart of integrated water management, being the major bottleneck in improving water reuse across the Union's economy.

Not just a decent water grid between companies is lacking, but equally in public. Over 30 per cent of the Dutch regions with CEA do not possess ample sewage capacity to dispose wastewater from CEA. Many municipalities argue that they are not required to collect businesses' wastewater. Moreover, poor sewage maintenance has caused many leakages to occur. Even when residual water is correctly discharged to the sewer by CEA, it could still end up in surface water due to these leaks. This pollutes the water and prevents its reuse.

To building a water-smart economy:

- The **Water Reuse Regulation (WRR)** should stimulate reusing (waste)water streams from other economies for agricultural purposes at a local level. Similar as in the energy transition, subsidy schemes could improve the profitability of water reuse infrastructure between companies and consequently promote reuse across sectors.
- To **support leakage reduction and infrastructure modernisation**, local authorities should be moved to secure a proper sewage capacity, guaranteeing that discharges do not deteriorate water quality due to leakages from public infrastructure.

Securing clean and affordable water
Net-zero emissions to the environment by 2027. That is our ambition. Reusing water, understanding water flows, closing water cycles, and sufficient sewage capacity near CEA facilities are essential to prevent residues of PPPs and nutrients from ending up in surface water. In the coming years, CEA will continue to work to securing clean water to achieve its objective.

Water coaches, for instance, are helping growers to improve water management by looking for any leakages and suggesting water-efficiency measures. The sector's water and plant health research programmes are concurrent developing new insights for water reuse and more resilient growing. Furthermore, the 100% Grown Green pilot has already succeeded in cultivating with 70 per cent fewer chemical PPPs in its first year. Our growers are eagerly moving towards securing clean surface water, but need some for the final steps.

To securing clean and affordable water:

- Urban wastewater is one of the main sources of water pollution if not collected and treated properly. The targets in the **Urban Wastewater Treatment Directive (UWWTD)** shall not be lowered and its implementation shall not be delayed. CEA has proven that wastewater can effectively be collected, treated, discharged, and reused. Collaboration between water authorities and CEA in wastewater treatment and accelerating procedures for end-of-waste could reduce costs for citizens and SMEs, and enhance water circularity.
- Control is key to improving surface water quality. **Best practices on strengthening controls** in Member States should be promoted. Risk-based controls, knowledge sharing, and funding for capacity building would enhance enforcement of the WFD and monitoring of other water quality indicators.
- The **authorisation and availability of biocontrol, new breeding techniques (NBTs), and precision techniques** should be accelerated to increase the sector's resilience and reduce its environmental footprint accordingly, directly benefitting water quality.

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