

Opinion of the European Economic and Social Committee on ‘Sustainable water management and climate emergency: circular and other solutions for the EU agri-food system in a future “Blue Deal”

(own-initiative opinion)

(2023/C 349/13)

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1. Conclusions and recommendations

1.1. Climate change is altering rainfall patterns in the European Union, with a consequent impact on the amount of water available for agriculture. This leads not only to a decrease in crop production, but also to increased competition between different consumptive uses (population, industry and agriculture). In addition, human activities are also affecting water quality, causing the increased presence of nutrients and pollutants.

1.2. The Common Agricultural Policy, the Farm to Fork Strategy and the Biodiversity Strategy have all set objectives for achieving sustainable food production and protecting ecosystems. To achieve these objectives, the agri-food sector requires the maintenance of rural areas and production structures, support for producers at local level, sustainable management of land and water as well as open strategic autonomy. Water is a fundamental resource for food production and therefore ensuring access to sufficient quality water and its sustainable management is essential to guarantee adequate and sustainable food production in the European Union. All CAP schemes should encourage sustainable and efficient water management, incorporating indicators in each Member State in order to monitor progress in water management.

1.3. Sustainable water management must focus on supply management, taking measures to ensure the availability of water for all users. Supply management must necessarily involve optimising efficiency, reducing losses, prioritising uses, eliminating illegal uses, adopting measures to ensure the sustainability of the whole system and, finally, adopting a set of approaches in line with strategies to consolidate sufficient food production in the EU.

1.4. The EESC calls for dedicated standards concerning water use in various economic sectors, for instance agriculture and industry, by building a governance structure to develop sectorial water use guidelines, which should include the EESC.

1.5. Technologies have a decisive role to play in securing water for agricultural production. Adequate and sufficient budgetary resources must be provided for research and the adaptation of knowledge in genomics, aimed at developing crops that are more resistant and adapted to climatic conditions. Resources will also be needed to promote new water transformation techniques, such as reuse and desalination. In this regard, the EESC proposes promoting the necessary measures to develop new technologies, while respecting the ecosystems in which they are located and prioritising environmental considerations.

1.6. Energy prices condition the introduction of new technologies, the operation of which is closely linked to the use of fossil fuels. The EESC calls for the decarbonisation of agriculture, the adjustment of agricultural prices in the primary sector, and the intensive use of renewable energy sources to reinforce the energy-water-food nexus.

1.7. Climate change implies higher temperatures, increased evapotranspiration, and a considerable increase in extreme weather events, causing droughts, floods, storms and fires. These problems are highly destructive to the production of crops and livestock. A strategic plan is needed that utilises scientific and technological expertise to ensure safe water is available for agriculture throughout the EU. Specific plans must be prepared for local areas and regions that suffer persistent drought and flooding. A special stand-alone budget and support lines will be necessary, as will an EU Regulation directing resources towards enabling and facilitating central, regional and local plans to supply adequate water. Such plans must ensure the construction and maintenance of fit-for-purpose water infrastructure in all parts of the EU.

2. Context of European agriculture

2.1. The aim of this own-initiative opinion is to analyse the interactions between water and agriculture at EU level in relation to the climate emergency and the impact on food security and sustainability in the future. The opinion raises points for reflection concerning the impact of extreme weather events and the effects of the various EU policies and rules. It describes the urgency of sustainable water management as well as the specific problems affecting water in EU agriculture, and puts forward proposals to strengthen the EU's food autonomy as well as the quality and quantity of its water supplies in order to meet this objective.

2.2. Agriculture is a strategic sector in the European Union, over and above for its socioeconomic importance. It is estimated that 30 % of the EU's productive agricultural area is irrigated, although this percentage is higher in the southern Member States due to their particular climatic conditions, reaching 70 % in some regions ⁽¹⁾.

3. Water scarcity and the main challenges for the EU agri-food system

3.1. Agricultural production depends on water being available. Agriculture, in turn, has an impact on both the quantity and quality of water, be it through diffuse pollution through the use of fertilisers and pesticides, or by causing saline intrusion into overexploited coastal aquifers. It is estimated that 20 % of Europe's land and 30 % of its population are affected by water scarcity each year ⁽²⁾, with water stress expected to increase significantly at EU level over the next 10 years ⁽³⁾.

3.2. According to data from the European Environment Agency, renewable water resources at EU level decreased from 3 219 km³ in 2010 to 2 883 km³ in 2020 ⁽⁴⁾. This situation will be negatively affected by the expected increase in temperatures and higher evapotranspiration, which will exacerbate water demand for agriculture and competition between different uses.

3.3. Over the last 55 years, the EU as a whole has seen a 17 % decrease in its renewable water resources per capita ⁽⁵⁾. While this can be partly explained by population growth, it is also true that pressure from economic activity — including agriculture — and climate change is exacerbating seasonal and annual water scarcity in many regions of the EU.

⁽¹⁾ Eurostat, Economic accounts for agriculture by NUTS 2 regions and Eurostat, Agriculture, forestry and fishery statistics.

⁽²⁾ EEA, Water stress is a major and growing concern in Europe.

⁽³⁾ ECA, Special Report 20/2021: Sustainable water use in agriculture.

⁽⁴⁾ EEA, Waterbase — Water Quantity.

⁽⁵⁾ World Bank, Renewable internal freshwater resources per capita (cubic meters) — European Union.

3.4. Between 2010 and 2016, surface water accounted for 54 % of the water used for agriculture in the EU, while groundwater accounted for 39 %. Recycled water accounted for 4 % and desalination for 3 % ⁽⁶⁾. These percentages may vary significantly from one Member State to another, according to their climate conditions. The commitment to reusing purified wastewater is an element of the circular economy, especially as only 1 100 hm³ of wastewater are reused in the EU each year (approximately 0,4 % of total captured freshwater in the EU) ⁽⁷⁾.

3.5. Agriculture is both a major cause and a victim of water scarcity. According to the UN Food and Agricultural Organization (FAO), farming accounts for almost 70 % of all water withdrawals, and this figure can be as high as 95 % in some developing countries ⁽⁸⁾. However, in many countries, irrigation efficiency is low.

3.6. Although the water footprint of EU agricultural production is decreasing, it remains significant in areas with agricultural intensification and where there is greater pressure on water resources. This may also hold back the emergence of diversification activities such as inland aquaculture and algaculture, which could provide additional revenue sources in certain EU rural areas, but are subject to the availability of at least a minimal amount of water.

3.7. Water scarcity is changing the concept of water as a resource, as well as existing management models. Water must be understood as a basic resource for life and it should therefore be managed as a scarce, high-value economic good. Management paradigms based on demand are, at present, difficult to apply and must evolve towards the management of supply, under criteria of security and sustainability.

3.8. The problems in resource management are not only due to a lack of planning or management tools, or to conflicting interests between different actors, but are often caused by the poor condition of irrigation infrastructure and drainage systems, leading to water loss and inefficient water use.

3.9. Agriculture in southern EU Member States faces a number of challenges directly relating to water scarcity, in particular prolonged droughts, which are more intense in the Mediterranean region; unequal availability and distribution of water; competition for water, especially for urban use and as a result of the intensity of tourism. In northern EU Member States the problem relating to water pollution caused by intensive agriculture and the use of nutrients and pesticides is predominant. In addition, the existence of waterways and transport routes that require minimum flows to maintain their effectiveness introduces greater competition between possible alternative uses of an increasingly scarce resource.

3.10. Open strategic autonomy in the agri-food sector, as previously defined by the EESC ⁽⁹⁾, is a highly relevant consideration. Different indicators can be used to quantify the EU's food autonomy. However, although the EU's food autonomy rate is high, its determination is overly generalised, as it varies widely according to different types of food and regions, with significant deficits in the production of cereals, soya beans and vegetable oils.

3.11. In its 2021 Strategic Foresight Report, the European Commission indicates that 'ensuring sustainable and resilient food systems' is one of the key strategic areas to strengthen the EU's leadership, mentioning the need to invest in innovation to safeguard resilient and sustainable food systems.

3.12. The efficient use of green water, understood as the part of rainfall that percolates and infiltrates into the ground, should be ensured. The key role of soil in water filtration and absorption must be strengthened by supporting soil regeneration policies.

⁽⁶⁾ Eurostat, Annual freshwater abstraction by source and sector and EEA, European waters — Assessment of status and pressures 2018.

⁽⁷⁾ BIO by Deloitte, Optimising water reuse in the EU, Part I.

⁽⁸⁾ FAO, Water Scarcity — One of the greatest challenges of our time.

⁽⁹⁾ Opinion of the European Economic and Social Committee on 'Strategic autonomy and food security and sustainability' (own-initiative opinion) (OJ C 105, 4.3.2022, p. 56).

3.13. The decision to opt for a circular economy when it comes to water uses (recycling black water or urban wastewater for irrigation) and for more technological systems (desalination) is a go-to model in some producing Member States in southern Europe. However, both solutions are very intensive in terms of electricity consumption and are potentially harmful to the soil and crops. Recycled water has to be treated properly and ensuring safe water for agriculture should be the priority. In addition, the necessary energy comes from different systems, which are not always renewable. The EESC calls for the decarbonisation of circular water management, and the generalisation of the use of alternative energy sources to reinforce the energy-water-food nexus.

3.14. This dependence on electricity was penalised in 2022 by the increase in energy prices, which has had a decisive influence on the cost of production, particularly in Mediterranean coastal regions where the structural water deficit makes the use of these technological solutions a necessity.

3.15. The management of transboundary surface waters affects not only the quantity of the resource downstream, but also its quality. Regardless of the provisions of the Water Framework Directive (WFD) ⁽¹⁰⁾ and the existing obligation to establish integrated planning at river basin level, it is clear that there is room for improvement in the management mechanisms for this type of water, either through new specialised bodies or by further developing the regulatory legislation.

3.16. Uncontrolled emissions into water bodies as a result of certain industrial activities have negative effects on health and food safety, as well as being a cost to society as a whole. The EESC remains committed to the development of climate-neutral industries, with controlled emissions, which bear the environmental costs of their production.

4. Existing EU and national policies

4.1. The key EU regulatory framework for quantitative and qualitative aspects of water and agriculture comprises the WFD and the Common Agricultural Policy (CAP) ⁽¹¹⁾. The specific objectives proposed by the new CAP include promoting sustainable development and the efficient management of natural resources such as soil, air and, of course, water. Furthermore, water is the subject of United Nations Sustainable Development Goal No 6, whose targets relate to water efficiency and integrated water management.

4.2. The WFD establishes that water is a natural resource that must be protected, conserved and managed in a sustainable manner. To this end, a management framework is established, either directly or under concession, depending on the different territories; this management framework aims to ensure integrated and sustainable water management at EU level.

4.3. The multiannual financial framework for 2021–2027 allocates a total of EUR 386,6 billion for the CAP, to be distributed among the different Member States and applied to various first and second pillar policies. The EESC calls for the creation of specific budget and funds for water, as developed by the opinion *The economics of an 'EU Blue deal'* ⁽¹²⁾.

4.4. Most CAP direct payments, as well as some Pillar 2 payments, are subject to cross-compliance rules covering statutory management requirements, and to good agricultural and environmental conditions (GAEC) standards that impose sustainable agricultural practices, including integrated water management procedures for irrigation. However, most of the payments have been found to be neutral as regards irrigation ⁽¹³⁾. All CAP schemes should encourage sustainable and efficient water management, incorporating indicators in each Member State in order to monitor progress in water management.

4.5. Some Member States use EU funding to support water-intensive crops in water-stressed areas without introducing safeguards, using voluntary coupled support to maintain or increase crop production in water-intensive sectors concentrated in southern Member States. The EESC believes that it is necessary to respect sustainable water management and cost-benefit analysis to ensure not only sustainability but also efficiency in the use of water resources.

⁽¹⁰⁾ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).

⁽¹¹⁾ The Common Agricultural Policy 2023–2027.

⁽¹²⁾ Opinion of the European Economic and Social Committee on the economics of an 'EU Blue Deal' — water-related investment needs in the EU (own-initiative opinion) (see page 50 of this Official Journal).

⁽¹³⁾ ECA, Special Report 20/2021: Sustainable water use in agriculture.

4.6. All Member States should maintain a register of abstracted surface and groundwater as well as of surface water storage; similarly, water users should be required to seek authorisation before extracting or storing water. All Member States should strengthen and tighten the monitoring systems in place to detect and penalise illegal water use.

4.7. The EU Court of Auditors considers that the costs of water services in agriculture are not fully recovered, mainly because environmental and resource costs are not adequately reflected in water prices. According to the Commission, this implies a hidden cost for society and limits potential revenues that could be used to finance measures aimed at ensuring the efficient implementation of the WFD.

4.8. The principle of European market unity is not fulfilled in the case of water. Users pay very different prices for similar services, depending on the Member State and even on the specific location of the operation within a Member State. In view of this issue, it would be beneficial to promote a EU methodology to rationalise and standardise water pricing systems ⁽¹⁴⁾.

4.9. In particular, the EESC calls for dedicated standards concerning water use in various economic sectors, such as agriculture and industry, by building a governance structure to develop sectorial water use guidelines, which should include the EESC ⁽¹⁵⁾.

4.10. The average increase in food and input prices can be attributed to various circumstances ⁽¹⁶⁾. However, the current inflationary situation implies that CAP contributions have been reduced in real terms, very significantly. Appropriate budgetary actions should be taken to redress the situation and restore the economic scope of the EU objectives.

5. Long-term proposals, solutions and responses

5.1. Water scarcity and the climate emergency are two of the biggest challenges facing the EU agri-food system today. To address these challenges and ensure the long-term sustainability of food production in Europe, circular and other innovative solutions are needed. The Blue Deal concept has been proposed as a framework to address these challenges, building on the experience and principles of the EU Green Deal.

5.2. Ensuring open strategic autonomy in the agri-food sector at EU level should be a priority objective. It is therefore necessary to focus on maintaining EU agricultural production, to develop policies that promote crop types where deficits have been identified, and to balance surplus production.

5.3. This guarantee of agricultural production will necessarily involve ensuring the quantity and quality of water, without abandoning policies to promote the reduction of the water footprint. Policies to promote water savings in production will enable more resources to be made available, without affecting the sustainability of the hydrological cycle.

5.4. Reducing the water footprint of agriculture in the EU requires a combination of technologies, sustainable farming practices, sustainable and efficient water management, and effective public policies that promote sustainability in the agri-food sector.

5.5. In this context, it is considered necessary to further promote policies that incentivise efficiency in irrigation and water use in general, both in the sphere of the CAP and other EU funds. Progress should be made in the implementation of sustainable farming practices, in the use of technologies that allow for more efficient use of water, and in the development of crops that are more resistant to drought and floods. Without the necessary budgetary resources, it will not be possible to build resilient and sustainable agri-food systems in Europe.

⁽¹⁴⁾ Opinion of the European Economic and Social Committee on 'Access to water: tackling water poverty and its implications for social policy' (own-initiative opinion) (see page 60 of this Official Journal) and Opinion of the European Economic and Social Committee on the economics of an 'EU Blue Deal' — water-related investment needs in the EU (own-initiative opinion) (see page 50 of this Official Journal).

⁽¹⁵⁾ Opinion of the European Economic and Social Committee on 'Water-intensive industries and water-efficient technologies' (Own-initiative opinion) (see page 74 of this Official Journal) and Opinion of the European Economic and Social Committee on the economics of an 'EU Blue Deal' — water-related investment needs in the EU (own-initiative opinion) (see page 50 of this Official Journal).

⁽¹⁶⁾ Opinion of the European Economic and Social Committee on 'Food price crisis: the role of speculation and concrete proposals for action in the aftermath of the Ukraine war' (Own-initiative opinion) (OJ C 100, 16.3.2023, p. 51).

5.6. The sustainable management of water resources in rural areas, through the implementation of measures such as the restoration of wetlands, the creation of buffer zones and the improvement of water quality of rivers and lakes, could help reduce the water footprint of agriculture in the EU. These issues should be addressed in the river basin management plans for the various river basins, and the EESC urges the Commission and the Member States to ensure compliance with these obligations.

5.7. Innovation and research, focused on developing technologies and farming practices that are more efficient and sustainable when it comes to water use, should be adequately budgeted for. It is also important to endow the development of policies and practices that promote precision agriculture, sustainable soil management and soil's capacity to retain water, and the adaptation of genomic knowledge of plants and seeds.

5.8. Reducing food waste can reduce the amount of water needed to produce food. This can be achieved through campaigns that encourage consumer education, improved supply chain management, and the promotion of innovative food preservation technologies.

5.9. The Member States should implement transparent water pricing policies that incentivise efficiency and savings and ensure that all categories of water users contribute adequately to cost recovery, in line with WFD principles.

5.10. It is understood that volumetric pricing at an appropriate level could incentivise a shift to water-efficient irrigation practices and technologies or crops that require less water. Member States that still maintain the practice of billing irrigation water on the basis of the area irrigated should therefore gradually abandon it.

5.11. The EU Court of Auditors has found that the costs of water services in agriculture are not fully recovered. One reason for this is that environmental and resource costs are not (yet) reflected in water pricing. This means that there are a large number of specific exemptions concerning the prices for irrigation water, making water for agriculture cheaper than for other uses. Without necessarily having to abandon this approach, it is understood that these general policies should be reassessed, redirecting exemptions towards incentives and rewards for water savings.

5.12. The WFD is 23 years old and was drawn up in an economic, social and climatological context that was very different from the current one. A reconsideration of some of its contents should be considered, so that the WFD can become an effective instrument to support food security.

5.13. Considering that, under the subsidiarity principle, Member States are free to implement and enforce the obligation to seek authorisation to extract water under individual criteria (at state or regional level), it has been found that this heterogeneity leads to a lack of control over access to certain groundwater bodies. For this reason, both the Commission and the Member States should agree on a more selective criterion and apply strict regulatory and conditionality requirements for both surface and groundwater abstraction.

5.14. The modernisation of irrigation systems needs to be enhanced and encouraged, in particular to reduce losses due to leaks in networks and evaporation in open channels and pools. The CAP and the other EU funds should contribute to the development of new irrigation structures, avoiding supporting situations that contravene the objectives of the WFD.

5.15. In line with point 3.4, the Regulation on minimum requirements for water reuse was adopted in May 2020 ⁽¹⁷⁾. This new Regulation on the reuse of wastewater for agricultural irrigation sets out minimum requirements for water quality and monitoring, risk management and transparency, and will apply from 2023. According to the analysis carried out, it will allow more than 50 % of the total volume of water theoretically available for irrigation from wastewater treatment plants in the EU to be reused, avoiding more than 5 % of direct abstraction from water bodies and groundwater. This will result in a reduction in overall water stress of more than 5 %. The financing of such reuse facilities should therefore be encouraged, as should precautionary measures to avoid soil pollution and ensure safe water for agriculture.

⁽¹⁷⁾ Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).

5.16. Promoting urban and peri-urban agriculture can reduce the need to transport food from rural areas, reducing the carbon footprint (process of decarbonising agriculture) as well as water use in agriculture. In addition, urban irrigation systems can take advantage of rainwater and water from irrigation recycling systems.

5.17. The use of renewable energy, such as solar and wind energy, can provide a sustainable energy source for water reuse systems, desalination systems, and irrigation and other agricultural equipment, thus reducing the carbon footprint (process of decarbonising agriculture) and water consumption.

5.18. These circular and other solutions can contribute to a future Blue Deal for the EU, addressing water scarcity and the climate emergency in the EU agri-food system. It is important to continue exploring new technologies and innovative practices in order to improve water efficiency and ensure the long-term sustainability and resilience of food production in Europe.

5.19. It is considered essential to ensure the infrastructure that allows water to be stored, distributed and purified, as well as to prevent the consequences of extreme weather phenomena. The management model for the aforementioned infrastructure should be based on the principles of integrity and sustainability, ensuring their environmental viability. In view of the possible budgetary difficulties of public administrations, alternative financial and collaboration formulas may be analysed.

5.20. The WFD obliges the Member States to draw up and renew river basin management plans. The EESC considers that the implementation, scope and degree of compliance with such plans have been uneven. The EESC therefore considers that the Member States should step up strategic plans aimed at guaranteeing water security and a framework for agriculture that can ensure the resilience of EU food systems. The strategic plans should be endowed with sufficient European budgetary resources, along the lines set out in point 4.3. Specific timelines should also be established and objectives and priorities set by consensus, in line with the considerations and proposals set out in this opinion.

Brussels, 13 July 2023.

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