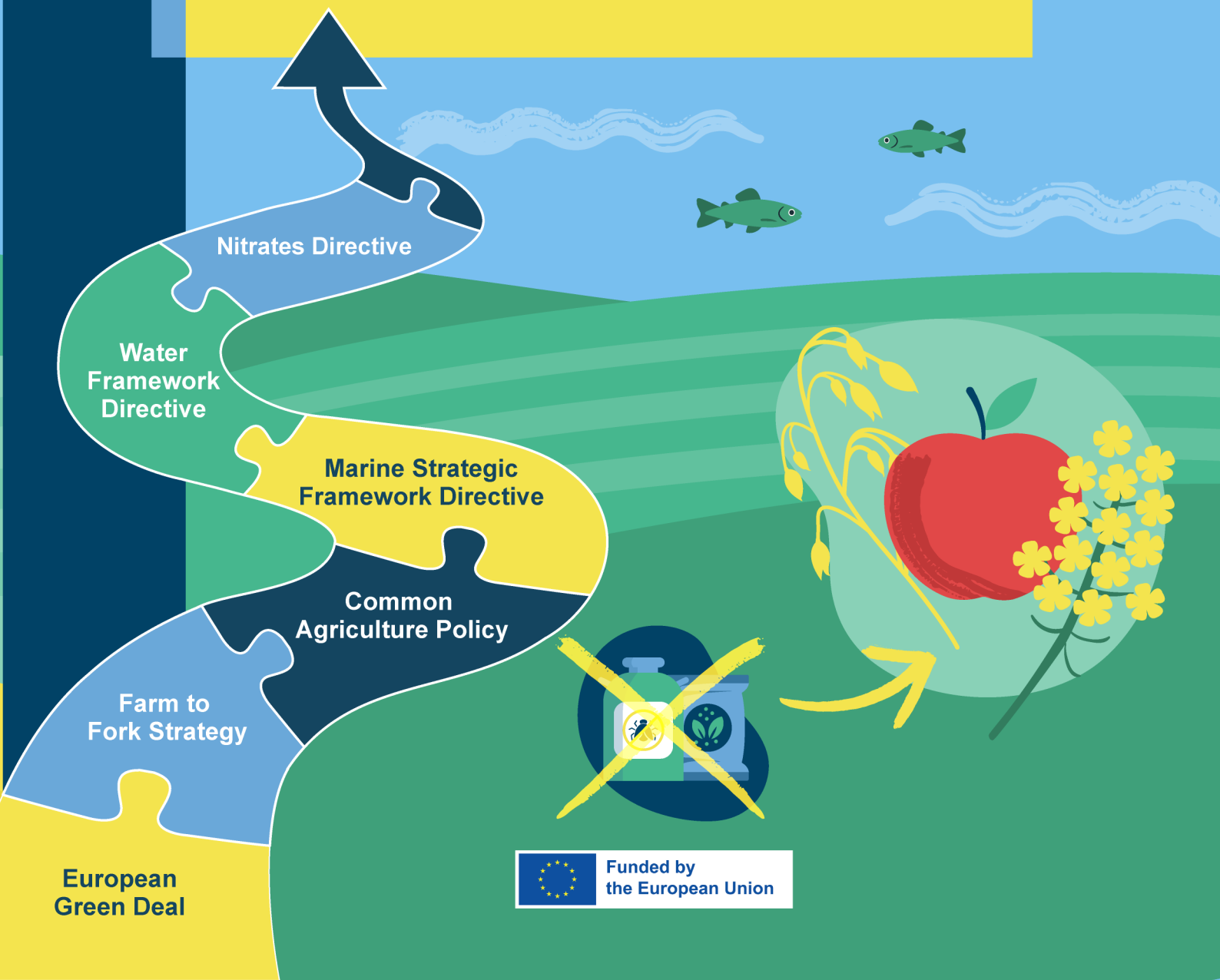
The Marine Environment& Agriculture Pollution

Roadmap to Enhanced Policy Coherence



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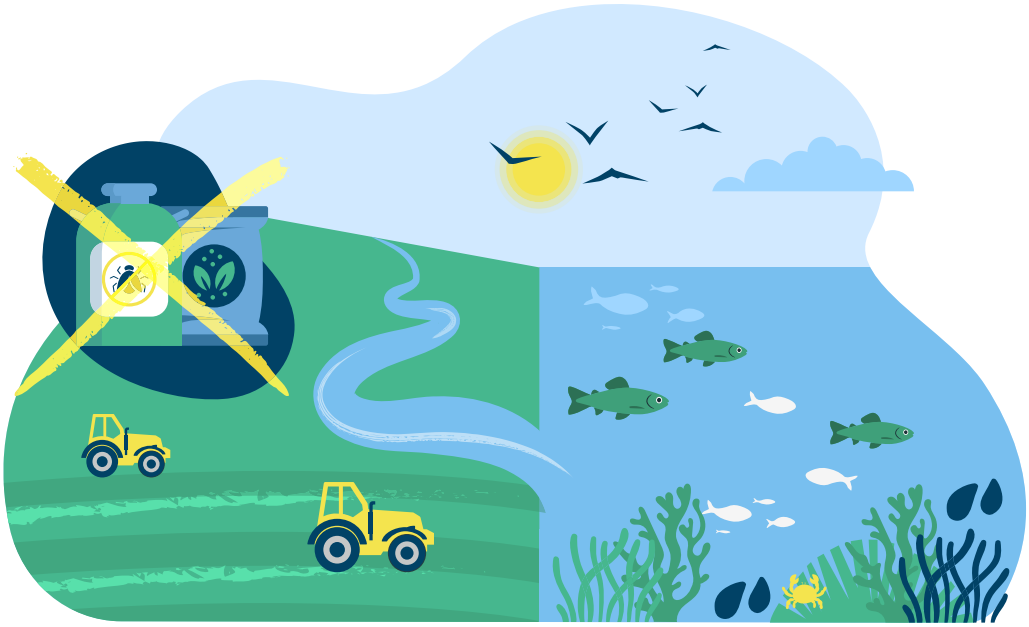
Introduction

Policy coherence is essential for ensuring that policies across different sectors, such as agriculture, environmental protection, and marine management, align to achieve shared environmental goals without conflicting with one another. In the context of nutrient pollution from agricultural runoff, the **Water Framework Directive**, the **Marine Strategy Framework Directive**, and the **Common Agricultural Policy** serve as key policy frameworks. However, there remain significant challenges in aligning these policies to achieve water quality goals and agricultural objectives.

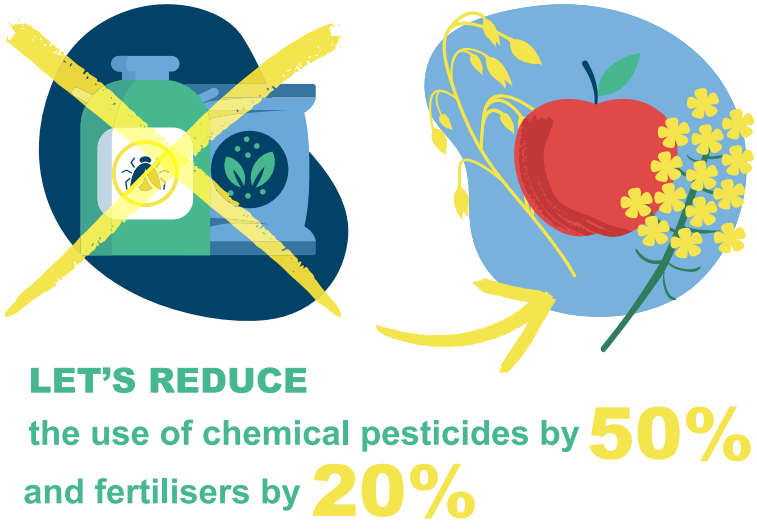
In this roadmap, we explore the current state of policy coherence in managing water and marine nutrient pollution from agriculture in the European Union. The roadmap identifies challenges, outlines key gaps, and provides recommendations to improve the integration of agricultural, water, and marine policies, ultimately contributing to a reduction in nutrient pollution from agriculture into coastal and marine ecosystems.



A Striving for zero pollution & a sustainable food system in the European Union

The overall objective of the **European Green Deal's zero pollution plan for 2050** is to reduce air, water, and soil pollution to levels that are no longer harmful to human health and natural ecosystems. In the European Union, pollution from agricultural practices, such as intensive cropping, livestock operations, and the use of fertilizers and pesticides, is the main diffuse source of surface water pollution. These practices release substantial amounts of nitrogen, phosphorus and pesticides into ecosystems, via runoff into surface and groundwater. Ultimately, these pollutants find their way into the marine environment, fuelling eutrophication in marine waters.

The Green Deal's **Farm to Fork Strategy** aims to make food systems sustainable, healthy and environmentally friendly. The strategy addresses agriculture pollution and by 2030 aims to: (1) reduce the use of chemical pesticides by 50%; (2) reduce nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility; and (3) reduce fertilizer use by 20%. These objectives seek to align agricultural practices with the Green Deal's overarching targets to reduce pollution, safeguard ecosystems, and ensure a clean water supply.



Agricultural policy in the EU

The **Common Agricultural Policy**, established in 1962, is a cornerstone of the European Union, accounting for approximately 30% of the EU budget. The Common Agriculture Policy aims to achieve an array of economic, but also social and environmental goals. These include supporting viable agricultural incomes, enhancing the sector's competitiveness, and fostering strong rural communities. Its three environmental objectives echo those of the **Green Deal**, aiming to tackle climate change, safeguard ecosystems and enhance biodiversity. While the Common Agricultural Policy has historically supported the sector through less than environmentally friendly farming practices, the policy's most recent iterations reflect the need for a balanced approach that incorporates sustainable farming practices.

Water pollution policies in the EU

The European Union's **Zero Pollution Action Plan** identifies agricultural runoff, particularly from fertilizers and chemical pesticides, as a major threat to water quality and marine ecosystems. Agricultural runoff enters groundwater, rivers and eventually marine habitats, where it contributes to a range of environmental harms including eutrophication, biodiversity loss, and degradation of aquatic ecosystems.

Three key directives underpin the EU's efforts to reduce pollution

1. The **Nitrates Directive** targets nitrate pollution from agricultural sources, particularly manure and chemical fertilizers.

2. The **Water Framework Directive** covers inland surface waters, groundwater, and coastal waters up to 1 nautical mile from the baseline. Under this directive, Member States must develop **River Basin Management Plans** to assess the status of all water bodies within a basin, identify pressures such as nutrient pollution, and set environmental objectives. Where water bodies fail to achieve "good ecological status," the directive requires action plans with targeted measures to address the underlying pressures.

3. The **Marine Strategy Framework Directive** applies to marine waters and is the EU's primary legislative tool for protecting the marine environment. It requires Member States to achieve good environmental status in their marine waters. Descriptor 5 of the directive specifically addresses eutrophication, mandating reductions in human-induced nutrient inputs and their effects, such as harmful algal blooms and oxygen-depleted bottom waters. To comply, Member States must define environmental targets, apply assessment metrics, and implement concrete measures for nutrient reduction.

Together, these directives form a comprehensive framework to address pollution challenges linked to agriculture. Their effectiveness, however, depends on coordinated implementation across sectors, particularly with agriculture, and active enforcement at the national level.

B Agricultural & environmental policy: Barriers to coherence

The Common Agricultural Policy: Economic vs. environmental goals

The **Common Agricultural Policy** has long prioritised competitiveness of the agriculture sector, food security and rural livelihoods. Although it now acknowledges that sustainable farming is vital for the sector's long-term viability in Europe, its legacy of promoting environmentally harmful practices continues to shape current policy frameworks.

Environmental goals have been layered onto the policy as environmental understanding has evolved, but without sufficien support for relevant measures, such as adequate funding. The economic incentives within the Common Agricultural Policy may still undermine water quality objectives. Few mechanisms formally link the priorities of the Common Agricultural Policy with the ecological requirements of the **Water Framework Directive**. As a result, the Common Agricultural Policy and the Water Framework Directive risk working at cross purposes, with the Common Agricultural Policy potentially subsidising agricultural practices that hinder progress toward good ecological status.

At a broader level, while the **Common Agricultural Policy** does address water management, it rarely references the marine environment. This omission does not exclude marine waters from its scope but may reduce the attention that Member States give to marine-specific impacts

The Common Agriculture Policy's Environmental Tools: Gaps in implementation

The **Common Agriculture Policy** utilises three main instruments to advance its environmental objectives:

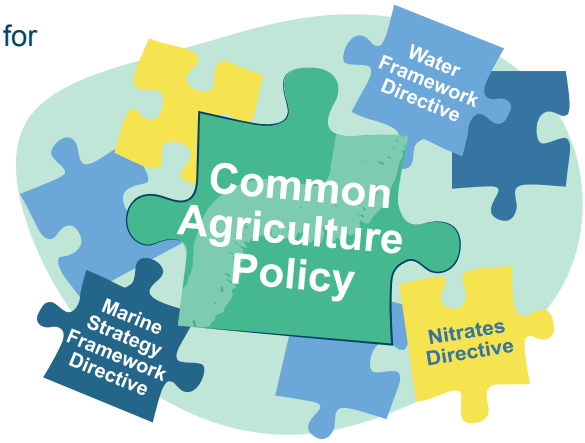
1. **Conditionality**: Farmers must meet a set of environmental and management standards to receive Common Agricultural Policy payments. These include requirements related to animal welfare, nitrate use, and restrictions on hormones, many of which apply regardless of payment eligibility. Since 2021, conditionality also includes standards for good agricultural and environmental conditions, requiring farmers to protect soil health, manage water resources responsibly, and maintain biodiversity. Adherence to these standards is a condition for receiving agricultural subsidies.

2 **Eco-schemes**: Introduced in 2023, eco-schemes are voluntary programmes that provide financial incentives to farmers who go beyond the minimum environmental requirements. They support the adoption of more sustainable, climate-friendly farming practices.

3 **Rural development interventions**: These are targeted measures aimed at promoting economic, environmental, and social sustainability in rural areas. They play a key role in supporting long-term resilience and the green transition in the agricultural sector.

In principle, these instruments should support the **Water Framework Directive**, which recognises agriculture as a major source of diffuse pollution and permits the use of Common Agricultural Policy funds to support farmers in adopting nutrient-reduction measures. In practice, however, coherence depends heavily on **National Common Agricultural Policy Strategic Plans**, the core planning documents that each EU Member State must develop under the Common Agricultural Policy. Member States have wide discretion in defining environmental goals, selecting interventions, monitoring, and ultimately allocating funding through these plans. The result is that national strategic plans diverge significantly with regard to environmental standards, funding, enforcement and monitoring.

Moreover, while eco-schemes are mandatory for Member States to offe , farmer participation remains voluntary. Therefore, the impact of the programmes ultimately depends on whether farmers opt-in to the schemes.



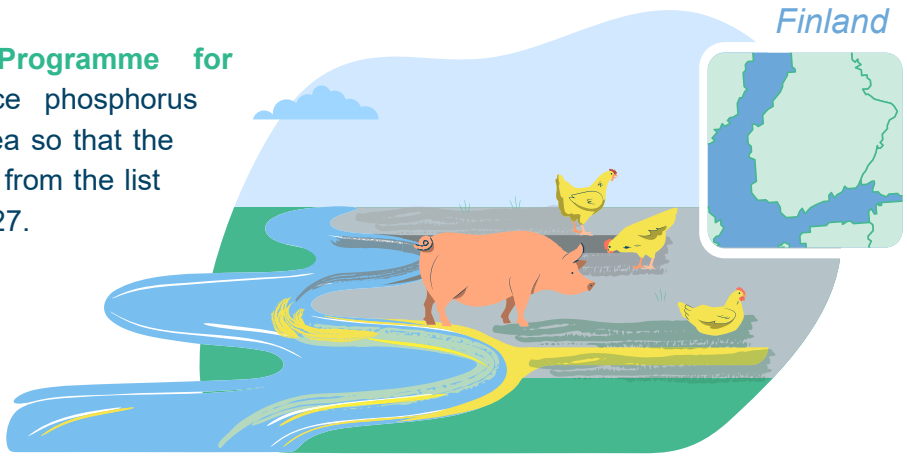
C Policy coherence at the national level

Across Europe, countries face a dual challenge: maintaining a competitive agriculture sector while meeting water quality obligations. Given agriculture's political influence, governments are often hesitant to impose stricter controls, and monitoring and enforcement are not always prioritised. The following section explores two cases: **Finland's Archipelago Sea**, governed by the Common Agricultural Policy, the Marine Strategy Framework Directive and the Water Framework Directive, and **Norway's Oslofjord**, regulated by national agricultural laws and the EU's Water Framework Directive.

The Finnish Archipelago Sea

The Finnish Archipelago Sea in the Baltic Sea, a region of 40,000 islands in southwest Finland, is the country's last HELCOM-designated pollution hot spot. Fed by nine rivers flowing through intensive agricultural areas, the sea is ecologically rich but under severe pressure. Decades of nutrient overload, driven largely by nitrogen and phosphorus runoff from agriculture, have triggered algal blooms, oxygen depletion, and ecosystem disruption, making eutrophication the region's most pressing environmental challenge.

The **Archipelago Sea Programme for agriculture** aims to reduce phosphorus and nitrogen loads in the Sea so that the water body can be removed from the list of HELCOM hot spots by 2027.



Policy framework & implementation

- The **Water and Marine Protection Programme**, also known as AHTI in Finland, aims to achieve good ecological status of inland waters and the Baltic Sea. The programme integrates catchment-based planning, nutrient-recycling pilots, soil-improvement trials and hazardous-substance management, providing a strategic platform for nutrient reduction.

- **River Basin Management Plans** put the **Water Framework Directive** into practice and, in coastal areas like the Archipelago Sea, help achieve the goals of the **Marine Strategy Framework Directive.**

- The **Archipelago Sea Programme for Agriculture** works to align **Common Agricultural Policy** payments with regional and international eutrophication-reduction targets, to create multi-level policy coherence. Key measures include improving soil and water management, increasing winter plant cover and enhancing manure use and nutrient recycling, all of which are then supported Finland's **Common Agricultural Policy Strategic Plan**.

- The **Common Agricultural Policy Strategic Plan (2023-2027) for Finland** has broadened conditionality requirements and added voluntary environmental incentives, including payments for catch crops, runoff water management, and circular economy pilots. Initiatives that have been widely adopted by farmers across Finland. The Ministry of Agriculture and Forestry coordinates this Strategic Plan, while regional Centres for Economic Development, Transport and the Environment are responsible for day-to-day implementation and enforcement.

Barriers to policy coherence

- In Finland, most agricultural water protection measures are voluntary, and responsibility for enforcement is divided among authorities. This limits the State's ability to require actions to reduce nutrient pollution and to enforce those that do exist.
- While Finland directs a substantial amount of funds to agricultural environmental schemes under the Common Agricultural Policy, most payments under conditionality are area-based (linked to the size of a farm) and not to social or environmental factors. Therefore, areas that generate the highest levels of nitrogen and phosphorus pollution are not incentivised to reduce nutrient pollution.
- In parts of the Archipelago Sea drainage basin, intensive pig and poultry farming produce more manure than the land can absorb. With little available land to spread it, phosphorus builds up in the soil and increases the risk of water pollution.
- Fertiliser use is gradually becoming more controlled in Finland, yet phosphorus build up in soil and internal loading in sediments mean that eutrophication pressures will persist for many years.
- A 2024 review by the National Audit Office found that Finland's annual €26 million water protection budget lacks coordinated planning and monitoring. Cost-effectiveness is poorly assessed, data to measure impact are limited, and current nutrient reduction targets fall short of what's needed to achieve good coastal water quality.

Solutions to enhance policy coherence

Umbrella programme for nutrient reduction: In recent years, promising programmes have been announced to reduce nutrient pollution in the Baltic Sea and the Archipelago Sea. These programmes are now brought together under an umbrella programme, the Water and Marine Protection Programme (known as AHTI in Finland), that focuses on:

(1) reducing nutrient loads by, alongside other actions, providing a roadmap for catchment-based planning; (2) Efficient management and use of resources; (3) Improving soil structure and overall condition and (4) managing hazardous substances.

Oslofjord, Norway

The Oslofjord is a coastal inlet in Norway, with a catchment area that covers 20% of the country's land area and is home to half of its population. Ecological decline in the fjord is the combined result of multiple human pressures, including agricultural runoff, wastewater pollution, overfishing, and coastal development. Agriculture alone accounts for an estimated 43% of excess nitrogen discharges, making it a major driver of eutrophication in the Fjord.

Although reducing agricultural runoff has become a high political priority, Norway's goal of increasing self-sufficienc through agricultural production makes the need to address coherence challenges between agricultural policies and water quality even more important in the future.

Policy framework and implementation

- Norway is not an EU member and thus does not implement the **Common Agricultural Policy**. Instead, it has developed its own **national agricultural policy framework**. The reduction of agricultural runoff is organized through a combination of regulatory measures and financial incentives. National regulations include for instance the use of fertilizers and size of buffer strips. The size and direction of financial contributions from the government are negotiated annually between the farmers' associations and the government.

- These national agricultural policies guide the development of **Regional Environmental Programs**. The programs include regional agricultural policy objectives and a list of voluntary agri-environmental measures (such as cover crops and buffer strips) that are eligible for financial compensation.

- Norway has transposed the **Water Framework Directive** into national law and created **River Basin Management Plans**. Norway has not implemented the Marine Strategy Framework Directive, but its national Ocean Management Plans can be considered a parallel to the EU directive. The Oslofjord and its catchment area are mainly covered through two River Basin Management Plans, while its outer parts are subject to the Ocean Management Plan.

- The **River Basin Management Plans** and the agricultural **Regional Environmental Programs** are interconnected in their efforts to protect the water quality from agricultural run-off. The **River Basin Management Plans** set the objectives and identify measures, while the **Regional Environmental Programs** provide the financial incentives and support for farmers to implement the measures. Additionally, regionally binding regulations can be adopted to help reach the River Basin Management Plans' objectives.

Barriers to policy coherence

- **River Basin Management** coordinates efforts but lacks legal authority and enforcement capabilities, relying on sectoral authorities who follow their own legal and financial frameworks. Irregular and non-detailed reporting hinders progress tracking and accountability.

- The ecological status assessment under the **Water Framework Directive** only partially covers coastal ecosystems. Consequently, many areas are classified with good ecological status, despite clear signs of ecological stress not captured by the indicators. This weakens the argument for stricter nutrient-reduction measures. While the **Ocean Management Plans** offer a more comprehensive assessment, they do not apply in coastal areas, like the Oslofjord.

- **Upstream-downstream dynamics** in large catchment areas are often overlooked. Norwegian river basins are divided into many small waterbodies, more than in other European countries. The environmental status of each waterbody drives policy measures, but this approach misses cumulative nutrient inputs from upstream waterbodies into coastal areas like the Oslofjord. Additionally, upstream freshwater bodies are less impacted by nitrogen-driven eutrophication compared to coastal waters, making nitrogen reduction a lower priority upstream.

- **Ocean Management Plans** do not include measures to address agricultural runoff. This contributes to a policy gap where nutrient discharges are only managed from a river basin perspective with a focus on individual waterbodies, and not from the perspective of coastal and marine areas.

Solutions to enhance policy coherence

Integrated planning and measures: Due to ongoing ecological decline, the government adopted an Oslofjord Action Plan in 2021 and established the Oslofjord Council to ensure political representation and coordination. In the integrated plan, agricultural run-off is addressed as one of several pressures within a single strategic plan. The plan has increased the adoption of agri-environmental measures and put an increased focus on environmental practices within the agricultural sector by taking the following actions:

- Shifting the management focus from individual water bodies to the entire Oslofjord. This catchment perspective emphasizes the need for upstream run-off reduction measures

- Creating earmarked financial subsidies for run-off reduction measures as part of the annual agricultural negotiations.

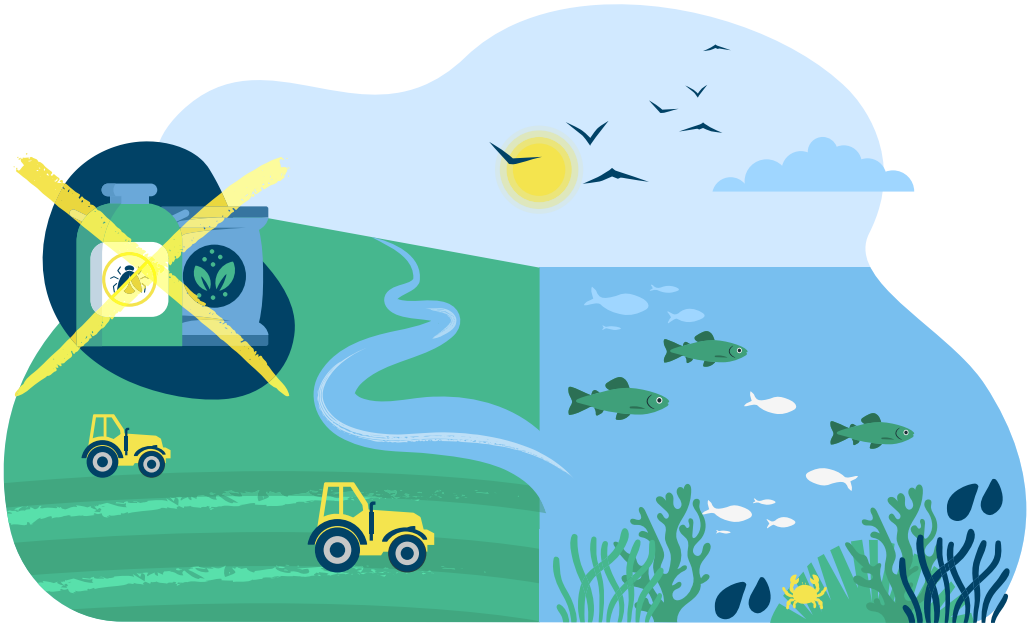
- Advancing the adoption of new agricultural regulations that reduce run-off and fertilizer application

- Mandating annual status reporting by municipalities and sectoral authorities.

- Driving political mobilization and societal awareness about the challenges in the Oslofjord, mobilizing sectors and actors across the catchment.

- Engaging sectors and stakeholders across the entire catchment area and raising public awareness about the challenges facing the Oslofjord.

Improved coordination: While agricultural policy and river basin management are decentralized in Norway, coordination between agricultural and environmental authorities at the national level, such as through the River Basin Management national directorate group, has been crucial in clarifying conflicting objectives and creating guidelines that inform decision-making and implementation of agri-environmental practices in the agricultural sector across the different governance levels.



D Recommendations to improve policy coherence

Improving policy coherence between agriculture and water protection is essential to tackling nutrient pollution in Europe's coastal and marine environments. The following recommendations propose practical changes that national and regional authorities can make to align agricultural policy with environmental goals and support healthier marine environments free from eutrophication across Europe:

- **Prioritise nutrient hot spots**: Direct funding and measures toward high-impact catchments, to maximise ecological benefit from limited resources.
- **Enhance the capacity and responsibilities of river basin management authorities**: Increased human and financial resources can improve coordination with sectoral authorities, supported by more transparent and regular reporting of implementation progress.
- **Establish political steering and coordination through an overarching Action Plan**: Enhancing political mobilisation and the implementation of environmental agricultural measures can be achieved through the creation of a comprehensive action plan.
- **Strengthen the source-to-sea perspective in river basin management**: An increased focus on coastal areas, which are the final recipients of cumulative discharge from large catchment areas, necessitates policy planning that extends beyond the ecological status of individual water bodies.
- **Integrate marine policies into river basin management through a science-based approach**: Assess maximum nutrient input targets to coastal waters and apply these for catchment-based planning of nutrient reduction.
- **Integrate the environmental assessment for river basin and marine management**: Align indicators and monitoring data between the Water Framework Directive and Marine Strategy Framework Directive to provide for integrated assessments of coastal areas.
- **Provide funding to farmers for environmental actions**: Reserve subsidies for actions that go beyond legal compliance, and channel Common Agricultural Policy resources toward innovation, technology adoption, and practices that farmers are unlikely to implement without support.
- **Invest in monitoring and cost-effectiveness analyses**: Enhance nutrient monitoring systems and require routine cost-benefit assessments to demonstrate ecological impact, support adaptive management, and build public trust in subsidy programmes.

Conclusion

Diffuse nutrient pollution from agriculture is a major barrier to achieving healthy marine ecosystems across Europe. Fragmented governance and untargeted subsidies continue to undermine efforts to reduce nutrient loads. Strengthening coherence between agricultural and environmental frameworks, through integrated planning, better enforcement, and performance-based funding, will be essential to achieving the EU's zero pollution goals, protecting marine biodiversity, and securing the long-term sustainability of Europe's food systems.

This Roadmap is a result of the CrossGov project which aims to enhance knowledge on how coherence and cross-compliance of marine related policies and legislation affect the ability to realise the EU Green Deal's goals. The roadmap is based on the findings from the following CrossGov publications and reports:

- Handbook on Policy Coherence: An easy guide to assess and understand policy coherence
- Horizontal coherence in EU law and policy: Analysing, explaining and improving the horizontal coherence of EU policy design,
- Coherence in Policy Landscape and Design
- Publications within work package 3 of CrossGov, to be published in fall 2025. Please stay tuned to the CrossGov website for more information.

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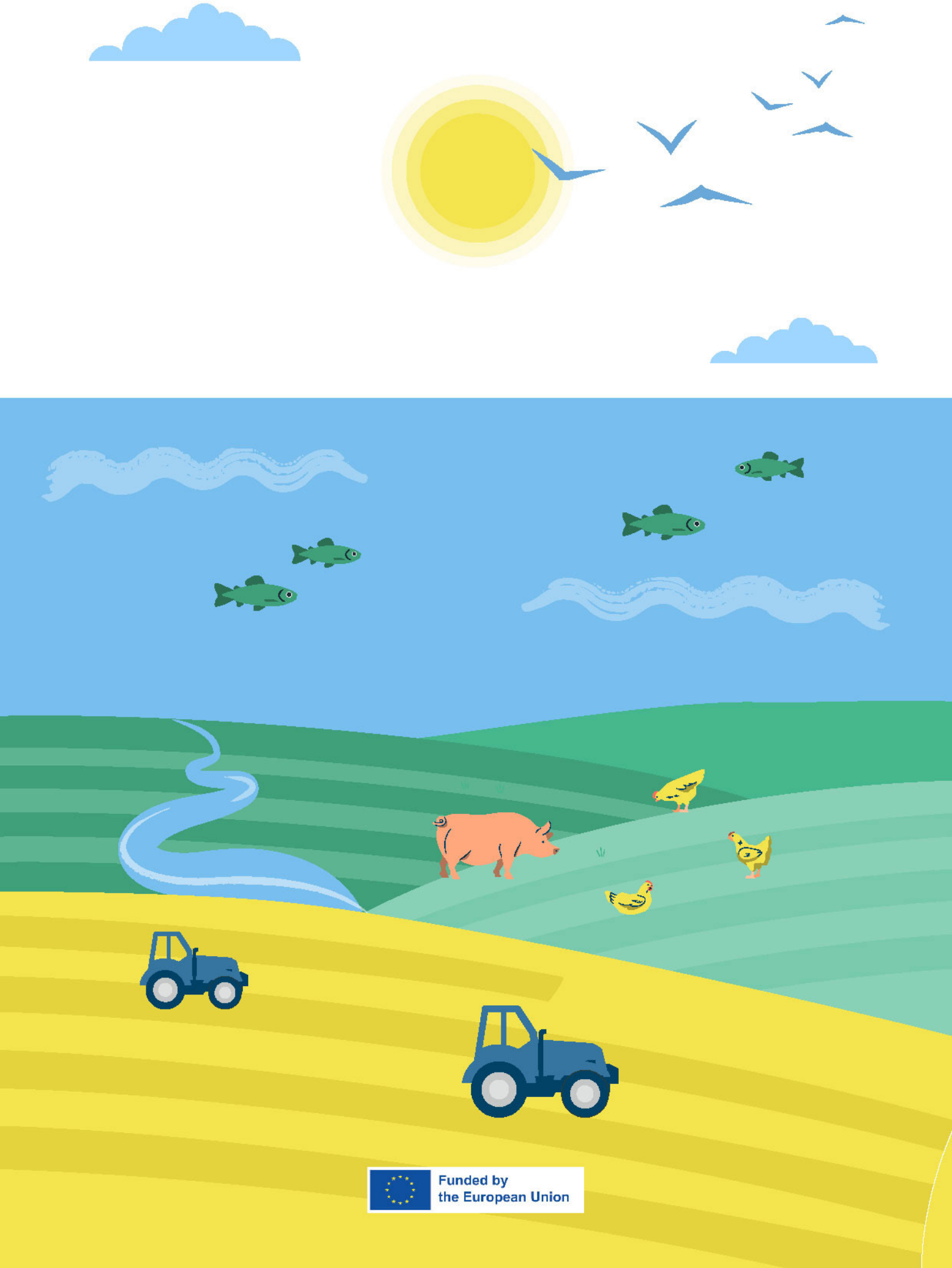

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