EurEau

# Briefing Note

# Cooperation projects between water operators and farmers

## 1. Background

In 2019, the European Commission launched the assessment of the impact of farming on water: a public consultation will be launched in the 1st quarter of 2020 which should result in a Commission communication. Drinking water operators have a long history of cooperation with farmers with a view to reducing agricultural pressures on drinking water resources. The information collected by EurEau members is intended to support the work of the Commission's task force on water and agriculture.

These cooperation projects encompass various activities: from advising and training farmers to paying minimum income guarantees in case of shifting to an alternative agriculture or even a financial transaction under the condition that pesticides and fertilisers are not applied in a given area.

If in some cases these financial schemes have proven effective because it is less expensive than treating pollutants at the drinking water plant, these must not become standard practice. These schemes were brought into being as the regulatory framework was inadequate or poorly implemented, thus, putting drinking water resources at risk. EurEau strongly believes that the 'Polluter Pays' principle must not be replaced by the 'Polluter is Paid Not to Pollute' principle.

## 2. Discussion

The goal of the collaboration between water utilities and farmers is the protection of water resources through more sustainable agricultural methods. Projects have predominantly been geared toward reducing the use of pesticides and nitrate-saturated fertilisers. Some countries and regions have additional elements given their context. The Netherlands, as an example, also seeks to improve soil fertility to create sustainable regions with closed-cycle agriculture.

A plethora of measures have been implemented to achieve protection of ground and surface water resources. These include promoting mechanical weeding and techniques to reduce spray drift, crop rotation and compulsory soil cover, as well as supporting agricultural research projects. However, some commonalities do exist. For instance, the most direct means of nitrate and pesticide reduction are by limiting or completely prohibiting their use and application, as it is done in Wallonia (Belgium). Another

thematic implementation is the creation and maintenance of permanent grassland – a compulsory greening agricultural practice, as defined in Article 45 of 'Regulation (EU) No. 1307/2013 establishing rules for direct payments to farmers under support schemes within the framework of the Common Agricultural Policy (CAP).

Monitoring progress and awareness-raising mechanisms are also common aspects of these projects. Different ways of providing information to farmers have been put in place in order to access best practices and general support. The advisory services are very contextual, reflecting the objectives of the individual project agreements. France's notion of sustainable agriculture entails an adaption to more organic cultivation and thus water operators provide advice regarding the construction of conditioning units for organic vegetables. In The Netherlands and Wallonia (Belgium), instead, independent consultants provide company-specific advice for farmers on such things as the use of pesticides and manure cycle plans.

Still, given the long timeframe needed for any measurable change in the environment, only the projects that have been in place prior to 2010 have quantifiable outcomes. Of these, reported results have indicated a reduction in the emissions of pesticides and nitrates into both soils and water resources. In the case of Cologne, no pesticides from agricultural activity have been detected in the ground and surface waters at all after 34 years of cooperation. Equally important is the heightened understanding among farmers concerning the adverse impacts of these substances regarding the environment and human health.

These activities come with a cost for the water operators and/or public authorities that engage in the projects.

These costs have been particular to their scope, methods and objectives. Water utilities and associations have had to invest hundreds of thousands of euros for the implementation of the projects.

The projects in the Netherlands have varied between €15.000 and €500.000, whereas in one single project in Austria, water operators invested €900.000 over 11 years. Yet, these amounts pale in comparison to what could be envisioned for treatment at the drinking water plants.

## Table 1 Water Utilities Collaborative Projects with Farmers

| AUSTRIA | |
|---|---|
| **COLLABORATION ACTORS** | Water supplier/ water union "Wasserverband Fernwasserversorgung Mühlviertel" and local farmers in the catchment area of the Zirking well system. |
| **SINCE** | 2002 |
| **FOCUS** | Nitrate reduction (farm and commercial manure). |
| **MEANS AND MEASURES** | Voluntary Measures: reduced amounts of applied fertilisers, timely distribution of fertiliser, extension of winter cover, reduction of root crop growing, renunciation of growing corn on soils with high discharge rates.<br>Compulsory measures: reduced amounts of fertilisers and prohibition of fertilising at certain periods as well as requirements for crop rotation and grain legumes. |
| **RESULTS** | Reduction of nitrates in the catchment area from 42 mg/l to 26 mg/l. Reduction of nitrate amounts in wells from 50 mg/l to 21 mg/l. |
| **WATER UTILITY EXPENSES** | € 900,000 |

| CZECH REPUBLIC | |
|---|---|
| **COLLABORATION ACTORS** | Water Supply and Sewerage Association of the Czech Republic (SOVAK). |
| **SINCE** | 2010 |
| **FOCUS** | National Action Plan (NAP) with a focus on the sustainable use of pesticides. |
| **MEANS AND MEASURES** | Shared monitoring of pesticides, results sharing, lobbying among all actors of NAP, preparing NAP for the next five year period with the aim of protecting drinking water sources. |
| **RESULTS** | Wider monitoring of pesticides and their metabolites, open discussions at conferences especially on national level, environmental and water experts awareness that pesticides in water is a serious problem and must be solved, collaboration with Czech health authorities, local collaboration in key catchment areas (drinking water reservoir Švihov). |

| | |
|---|---|
| **WATER UTILITY EXPENSES** | The main expenditure is related to wider pesticide monitoring by river authorities and water utilities and subsequent investments in enhanced treatment following confirmation of excessive pesticide presence (tertiary treatment: ozone/GAC/membrane treatment of drinking water: 50-120 €/supplied PE).<br>The Ministry of Agriculture finances a pilot scheme of cooperation and subsidies to farmers carrying out activities in the vicinity of the Švihov water reservoir (water protection area). The pilot costs are €2.4m and if the results prove successful, this programme will be extended. |

| **FRANCE** | |
|---|---|
| **COLLABORATION ACTORS** | French Water Agency, municipalities, wider Paris region, Agriculture Professional Chamber; Organic Farming Association; farmers' cooperatives |
| **SINCE** | **FP2E -** In order to respond to the challenges of water management in the context of climate change and achieve the good ecological status of water, the French Professional Federation of Water Enterprises (FP2E) launched a partnership with the Permanent Assembly of Chambers of Agriculture (APCA) in 2009.<br>This partnership aims to: disseminate good practices to local actors (local communities, farmers, water companies); strengthen preventive actions to protect water resources (in particular at the scale of catchment areas); prevent agricultural pollution and promote the development of low-input agriculture.<br>**Veolia**, **SEDIF** (its main client in Paris suburbs) and other partners have worked for many years with farmers and farmers organisations to protect the quality of the aquifer of Champigny in the south of the Paris area. Results are positive regarding nitrate and pesticide practices.<br>**Suez** has a cooperation agreement with the Chamber of Agriculture and the Organic Farming Council of the Ile de France Region to protect water bodies and advise farmers on good practices and solutions. The focus is on monitoring and management of nitrates and pesticides. |
| **FOCUS** | Sustainable agriculture and preventive groundwater protection in the watershed (pesticides, nitrates). Help farmers understand the technical and financial aspects (fertiliser reduction, pesticide reduction or suppression, financial aids). |

| | |
|---|---|
| **MEANS AND MEASURES** | Inventory and diagnosis of all the farms in the area to understand the agricultural practices, proposal of solutions to reduce the use of pesticides and nitrates (organic or traditional sustainable agriculture). These solutions will be discussed with farmers and will be adapted to the growing system; information, awareness raising of the farmers towards organic farming. Technical and administrative support to farmers for organic farming conversion; advice for the construction of organic vegetables conditioning units. Actions to develop the local demand for organic vegetables. |
| **RESULTS** | The action started effectively in 2012-2013 and it is still too soon to notice any quality effect. The properties in the soil set the time of molecule transfer between 10 to 30 years. Other indicators are being implemented to quantify progress and efficiency of new agricultural policies (e.g. frequency index). |
| **WATER UTILITY EXPENSES** | €230,000 (no VAT) |

| **GERMANY** | |
|---|---|
| **COLLABORATION ACTORS** | Regional drinking water suppliers, Chamber of Agriculture, representatives of the cities and the county in the region of co-operational activities, and more than 50 farmers |
| **SINCE** | 1985 |
| **FOCUS** | Sustainable agriculture and preventive groundwater protection in the Cologne Region; an economically sound farm has resources for measures on groundwater protection; Economic advantage for farmers in saving fertilisers and pesticides that do not reach the plant but the groundwater. |
| **MEANS AND MEASURES** | a) Advisory services (crop farming, fertilising, pesticide application); b) Sponsoring of state-of-the-art sprayers; c) Promotion the cultivation of catch crops/intertillages; d) Annual economic analysis of farming practice; e) Promotion of water preserving cultivation methods; f) Qualification of farmers by regular workshops; g) Creating extensive grassland in areas with highly permeable soils and exchange those for acreages with better soils for agricultural use; h) Continuing support of the agricultural practice with research projects (N-dynamics in soils, water preserving cultivation methods / performance of measures, precision farming, humus monitoring / ideal humus contents in soils). |

| | |
|---|---|
| **RESULTS** | a) Reduction of nitrate in the groundwater to less than 25 mg/l; b) No pesticides from agricultural use in groundwater or surface waters |
| **WATER UTILITY EXPENSES** | € 450,000 |

| **LUXEMBOURG** | |
|---|---|
| **COLLABORATION ACTORS** | Syndicat des Eaux du Sud (Water supplier), Chambre d'Agriculture (Chamber of Agriculture), Administration de la Gestion de l'Eau (water authority), farmers, hydrogeological consultant |
| **SINCE** | 1995 |
| **FOCUS** | Fertiliser (nitrates), pesticides, water protection areas |
| **MEANS AND MEASURES** | Manure storage, application limits for nitrogen, compulsory soil cover, tilling permanent grassland, mechanical weed control, alternative cultures (miscanthus, oil flax) |
| **RESULTS** | Stabilisation or reduction of nitrate values, reduction of pesticide levels. |
| **WATER UTILITY EXPENSES** | € 100,000 |

| **NETHERLANDS** | |
|---|---|
| **COLLABORATION ACTORS** | Most of the projects are a collaboration between a drinking water company, individual farmers and/or farmers unions like LTO, province and water authority. Sometimes other parties are involved like nature conservation organisations, municipalities, consultancy and research companies, universities, a farmers bank and dairy companies. |
| **SINCE** | 1990-2017 |
| **FOCUS** | Protection of drinking water resources by reduction of nitrate/ nutrients and pesticide emissions to groundwater and surface water, improve sustainability of cultivation methods, create awareness among farmers. Some projects focus also on improving soil fertility or on positioning a region as a sustainable region with closed-cycle agriculture. |

| | |
|---|---|
| **MEANS AND MEASURES** | Restricted use or less use of harmful pesticides; use of drift reducing techniques/ state-of-the-art sprayers; mechanical weeding; application limits for manure; optimisation of organic matter/ humus equilibrium in soils; row fertilisation in corn crops; increased manure storage; improvement of mineral efficiency; precision fertilisation; permanent grassland (no or less ploughing); compulsory soil cover (e.g. grass below corn, cultivation of catch crops); rotation of crops and grassland; company-specific advisory services for farmers by independent consultants on e.g.: manure application plans, use of pesticides, manure cycle plans (Kringloopwijzer), nitrogen surplus of soils, etc.; monitoring of water and soil quality; in one case a special sewer is laid out for the collection and treatment of wastewater from greenhouses |
| **RESULTS** | Results differ between projects, depending - among others - on the duration of the project. Sometimes exact results are not yet available, but most projects show an improvement of awareness and understanding of the importance of water resource protection, and a (significant) reduction of emissions of nutrients and pesticides to groundwater and surface water. In many cases, the nitrogen surplus in soils is reduced (to an acceptable level), nitrate concentrations in groundwater are lowered or the exceedance of standards is reduced. |
| **WATER UTILITY EXPENSES** | €15,000 - €500,000 |

| **United Kingdom** | |
|---|---|
| **COLLABORATION ACTORS** | Water companies, agronomists, pesticide manufacturers, farmers and other key stakeholders such as Natural England (CSF), Environment Agency, NFU, River Trusts and Wildlife Trusts |
| **SINCE** | 2009 |
| **FOCUS** | Metaldehyde and other pesticides |
| **MEANS AND MEASURES** | Use of better quality metaldehyde pellets; use of alternatives to metaldehyde e.g. ferric phosphate, both voluntary and incentivised; use of lower dose metaldehyde pellets on a voluntary basis; spreader calibration; promotion of greater use of cultural controls; water companies own grant schemes; water companies trialling intake management; water companies carrying out research into new treatment processes.<br>Tools used in the collaboration project: |

| | |
|---|---|
| | Identification of high risk fields to target measures e.g. hotspot mapping; Water companies or CSF (Catchment Sensitive Farming: partnership between Defra, the Environment Agency and Natural England) paying for farmers to undertake safe use of pesticides (PA1) and to use pesticide slug pellet applicators (PA4s); Advice and training through water companies own Agricultural Advisors or through partnership projects with CSF/EA etc; Farmer engagement through various media from 1-2-1 visits to national leaflet drops; Water companies own websites; VI Website; Get pellet-wise website; National media campaigns through the Metaldehyde Stewardship Group (MSG); Water company local media campaigns and mailshots. |
| **RESULTS** | Where water companies have promoted the use of ferric phosphate through incentivised schemes the majority of the time this has resulted in compliance at the Water Treatment Works (WTWs).<br>Where the switch to the use of ferric phosphate through voluntary schemes has been undertaken e.g. hotspot mapping trials, the results have been very catchment dependant and inconclusive.<br>The national campaign has resulted in lower metaldehyde concentrations compared to 2008 when the issue was first identified. However in wet years, metaldeyde is still a major challenge for the majority of water companies with WTWs being non-compliant for most of the autumn/winter period.<br>The use of lower dose products have helped reduce metaldehyde concentrations.<br>In December 2018, Defra announced that there will be imposed restrictions on the use of metaldehyde: "The outdoor use of metaldehyde will be phased out over 18 months to give growers time to adjust to other methods of slug control. It will be legal to sell metaldehyde products for outdoor use for the next six months, with use of the products then allowed for a further 12 months".<br>Once the stockpiles have been used and companies are seeing a drop off in metaldehyde in raw waters it is expected that water companies focus on other pesticides of concern. We expect that there will be a significant increase in catchment based approaches in the next 5-year funding cycle (2020-2025). |
| **WATER UTILITY EXPENSES** | |

# 3. Conclusion

Voluntary collaboration projects between farmers and water utilities may have had, hitherto, positive impacts. This is why they should be eligible for funding under the Common Agricultural Policy. However, EurEau's position on such projects remains unchanged. Projects like this ought to be complementary to, but they cannot substitute, clear legislative requirements including targets, thresholds and timelines. EurEau insists on the full application of the Precautionary Principle, the Control at Source Principle and the Polluter Pays Principle.

For instance, we reiterate our full support for the development and compulsory application by farmers of the Farm Sustainability Tool for Nutrients as outlined in Article 12 and Annex III of the Proposal for a Regulation establishing rules on support for strategic plans to be drawn up by Member States under the Common Agricultural Policy (CAP Strategic Plans) and financed by the EAGF and by the EAFRD. This tool could become a powerful measure to limit nitrate emissions to the water cycle, provided its results and recommendations must be implemented by farmers.

The collaborative projects are testament to the willingness of the water sector to cooperate with farmers and the cost-effectiveness of preventative measures vis-à-vis end-of-pipe treatment. This is further evidence for the urgent need for greater consistency, coherence, and proper implementation of the prevailing legislative framework (CAP, Nitrates Directive, Plant Protection Products Regulation, Biocides Regulation and Water legislation), with a view to avoiding that water utilities have to invest in end-of-pipe solutions.

## About EurEau

EurEau is the voice of Europe's water sector. We represent drinking water and waste water operators from 29 countries in Europe, from both the private and the public sectors.

Our members are 32 national associations of water services. At EurEau, we bring national water professionals together to agree European water sector positions regarding the management of water quality, resource efficiency and access to water for Europe's citizens and businesses. The EurEau secretariat is based in Brussels.

With a direct employment of around 476,000 people, the European water sector makes a significant contribution to the European economy.