



# FAIRWAY

## POLICY MAKERS AT EUROPEAN AND AT LOCAL SCALE

To evaluate the impacts of mitigation measures in a given hydrological context, complete and readily available databases are necessary. Since water (and especially groundwater) has long travel times before being extracted as drinking water, long and continuous data sets are necessary to carry out reliable statistical analyses.

### CONTACT

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### FURTHER DETAILS

[Laurencelle, M. et al 2021. \(Short note for the\) database containing harmonised datasets, 28 pp. FAIRWAY Project Deliverable 3.3](#)

### ACKNOWLEDGEMENT



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## KEY MESSAGE

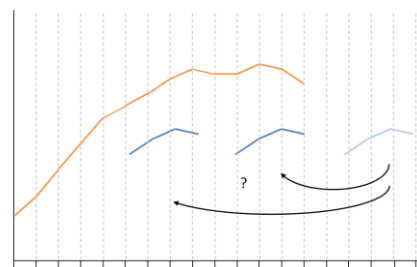
Monitoring groundwater quality, detecting pollution sources and evaluating mitigation measures have to be done to ensure a safe, sustainable drinking water supply for citizens. Hence, it is necessary to have access to consistent databases that enable scientists to link pollution and mitigation measures to water quality.

### EXPLANATION

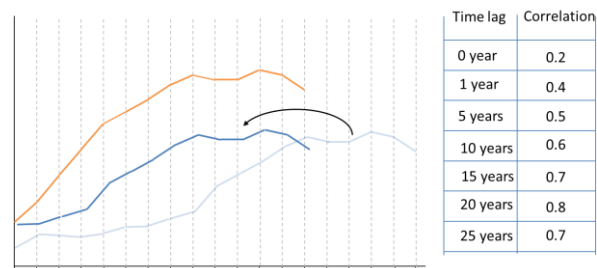
Water and contaminant transfer through most types of geological materials takes place over a long time. In any hydrogeological system, there is a specific delay (lag time) between substance application and its first detection at the waterworks. For a database to be fully usable for statistical analysis (in particular correlation analysis), the pressure indicator datasets (i.e. inputs of nitrate and pesticides from the agricultural system to the hydrogeological system) and state indicator datasets (water quality monitoring parameters) need to be continuous and the series should be longer than the local lag time.

### EVIDENCE

In selected FAIRWAY case studies, correlation analyses were performed between pressure indicators of pollution (e.g. N fertilization application amount) and state indicators of water quality (e.g. N concentration in water). However, building a complete database of all the case study sites covering both pressure and state indicators over the sufficient time periods was a challenging task. Each member state has its own needs, regulations and institutions to collect and manage the data.



No relation can be found between the parameters here. The dataset is too short and discontinuous for this kind of analysis and no clear conclusions can be drawn.



With a longer and continuous dataset, correlation tests can be performed and clearer relationships can be found.