

## FAIRWAYiS website

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*Date: 30 November 2021*

*Version: 1*

*Deliverable 8.3*

*This report was written in the context of the FAIRWAY project*

*[www.fairway-project.eu](http://www.fairway-project.eu)*





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## PREFACE

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The role of WP8 (Dissemination and communication) is to coordinate and facilitate contact and communication with the different groups of actors and target audiences who will be involved in FAIRWAY, including the multi-actor platforms, national and EU level policy makers, potential users of the farm water management decision-support tool and the wider public. Specific objectives are: to identify the key project-wide messages and the key messages from each WP, the target audiences for those messages, to plan the communication activities throughout the project's life, and to manage knowledge and intellectual property rights; to specify how knowledge will be transferred and disseminated; to develop the project's major dissemination product, the FAIRWAY Information System; to develop a number of different video or film products which explain the scientific issues related to effects of farm management on drinking water quality, protection policy and governance.

There are four tasks in WP8

- Task 8.1 The development of the FAIRWAY Dissemination and Communication Strategy
- Task 8.2 The development of methods of knowledge transfer and dissemination
- Task 8.3: FAIRWAY Information System (FAIRWAYiS)
- Task 8.4: FAIRWAY – visual impact

Deliverable 8.3 summarises the work completed in Task 3: FAIRWAY Information System, the project's major dissemination product.

# FAIRWAY Information System

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## 1. SUMMARY

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The FAIRWAYiS website (<https://fairway-is.eu>) is the project's major dissemination product and is intended to be the long-term repository of information from FAIRWAY, containing the results in brief and full scientific results and making them available and accessible to all the stakeholders and target audiences.

The content is derived from the project deliverables with sections for each of the seven work packages and additional sections for results in brief and the case studies. Each section is introduced by an executive summary, followed by detailed short articles. There are over 470 articles in total.

Throughout the life of the project, FAIRWAYiS has been in a state of development and has not been promoted per se. Google Analytics records 1.9K users for the 12 month period November 2020 to 2021 and that those who reached the site from FAIRWAY project site visited more often and spent more engaged time than others.

FAIRWAYiS will remain active for a further three years, then will be archived by Wageningen University and Research.

## 2. AIMS AND OBJECTIVES

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The FAIRWAYiS website (<https://fairway-is.eu>) is the project's major dissemination product. In contrast to the project website (<https://www.fairway-project.eu>), which was used for internal organisation and management of the project, FAIRWAYiS is intended to be the long-term repository of information from FAIRWAY, containing the results in brief and full scientific results and making them available and accessible to all the stakeholders and target audiences.

FAIRWAYiS is built in Joomla! an open source content management system.

Details of the initial design, structure and organisation of the website were given in Milestone.1. In this deliverable we give an overview of the final website.

## 3. SPECIFICATIONS

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The Grant Agreement contained a list of specifications for the structure, content and functionality of FAIRWAYiS that, at the time of writing the proposal, were thought likely to be included. Many of these are indeed in the final version of FAIRWAYiS, but others have been found not to be useful or unnecessary, as explained in Table 1.

Table 1: Specifications for structure, content and functionality of FAIRWAYiS

Likely specifications for FAIRWAYiS listed in DOW	Updated specifications
A menu structure adapted from FAIRWAY's organisational structure with sections for each	We experimented with different organisational structures, ending with one that follows the

<p>research theme and study site and designed to provide answers to questions such as “What are the sources of drinking water pollution?”, “How can water quality be assessed and monitored?”, “What can be done to improve water quality?” “How can good management practices be facilitated by integrated policy design?” The explanations given will be in more depth than in the decision support tool and will support the tool users and others in their understanding of the issues surrounding water quality.</p>	<p>project’s WP structure rather more closely than we originally thought. This preserves the linkages between tasks more easily and explicitly. The flow of data and concepts between tasks in different WPs is especially highlighted in the introduction to each section and (where relevant) in individual articles.</p>
<p>The content organised hierarchically, with the degree complexity of information increasing with each level.</p>	<p>This has been done.</p>
<p>All complete deliverables will be available for downloading and many will be reformatted for on-line reading. However, the user may choose to read only the summary/poster introductions.</p>	<p>This has been done.</p>
<p>Interactive tools will be used to simplify the presentation of complex information, as will PowerPoint slideshows, short video clips or animations.</p>	<p>Issues associated with long-term archiving of the website have restricted the use of interactive tools. However, popup windows have been used to reduce the amount of information presented on screen at any time and contents tables are frequently used to assist navigation through longer articles. There are extensive collections of both infographics and videos.</p>
<p>Basic website functionality will be extended to include: a document management component which provides an interface for downloading all documents; a fully-integrated glossary; interactive Google maps; a facility for translating and reading as much content as desired in the study site local languages.</p>	<p>Apart from the document manager and integrated glossary, as few extensions have been used as possible to minimise problems when archiving the site. Google maps extensions were not necessary. Apart from specific products (videos and infographics) designed for communication with stakeholders which are provided in local languages, the rest of the content is in English.</p>
<p>An interactive area to support the development of the case study sites as “living labs”.</p>	<p>See the comment below on a social learning area.</p>
<p>An online spatial mapping portal will be developed through which local actors can upload spatial data for WP2 and through which they can access available catchment datasets on; online spatial mapping portal linked with Tasks 2.5 and 5.5, taking property rights and protection of private data (e.g. of farmers) in to consideration. The spatial mapping portal will be developed in order to provide spatial and temporal data on hazardous events related to</p>	<p>See the comment below on the provision of a spatial mapping portal.</p>

<p>pesticide application in case study catchments. Farmers are asked to voluntarily provide information on the land use, pesticide type and rate of application which will be uploaded to the online spatial mapping portal.</p>	
<p>FAIRWAYiS will be complimented by and linked to Facebook and Twitter accounts to share and include feedback from actors as a social learning area.</p>	<p>A FAIRWAY Facebook Page, LinkedIn and Twitter accounts and a YouTube channel were set up and have been regularly used for dissemination and communication throughout the project.</p> <p>A survey of FAIRWAY partners at the Third Plenary meeting in Ljubljana (September 2019) revealed that most people (83%) used just one or two platforms, the most common being Research Gate and/or LinkedIn. Of the platforms themselves, Research Gate (used by 54%), LinkedIn (50%) and Twitter (42%) were the most commonly used. Facebook was used by 21% and Instagram and YouTube by only one person each.</p> <p>When asked if they thought a social media platform would facilitate interactions between scientists and MAPs, the response was generally no, it would not. Some case studies said communication should be through already existing channels such as meetings, emails and newsletters. Others said that social media is not much used by the farmers.</p>

A **spatial mapping portal** is mentioned in connection with Tasks 2.4 (Water safety planning) and Task 5.5 (Development of a phone app). Although not a separate milestone or deliverable, it was thought that a mapping portal could be a facility on either the FAIRWAY Project or FAIRWAYiS websites. However, it was found to be not needed for either of these tasks.

- Task 2.4 (Water safety planning): A survey of the case studies found that, with the exception of North Greece, all case studies had some form of agreed methodology for water safety planning in place that required detailed information from local sources. Rather than developing a generic online facility, a Learning Module was created for use by the North Greece case study in conjunction with guidance from the Task 2.4 team (<https://fairway-is.eu/index.php/case-studies/north-greece-gr/463-water-safety-planning>). The Learning Module and example Water Safety Plans for large and small supplies are reported in Deliverable 2.4.
- Task 5.5 (SprayDay: mobile app for infrequent pesticide users): Input from users during the development of SprayDay made it clear that the app had to be simple with little requirement for mobile or Wi-Fi connectivity in order to operate successfully. Infrequent professional pesticide users, such as are commonly found in rural Northern Ireland were also confirmed as the primary target audience. Weather data that is needed for recommendations of spraying is updated every six hours and the GPS location is used to identify the most spatially appropriate weather forecast and this information is returned to the app. This means that the app does not use spatial information (except weather forecast) and there was no need for a spatial mapping portal. The development of SprayDay is reported in

Deliverable 5.5 and on FAIRWAYiS <https://www.fairway-is.eu/index.php/farm-management/management-tools/sprayday-app>.

Although not originally foreseen within the context of a spatial mapping portal, Task 3.3's Database containing harmonized data sets does contain datasets from each of the FAIRWAY case studies. The database contains near 390,000 rows of data from the 13 case study sites, with more than 65 parameters and more than 500 sub-parameters. The data base contains spatial information in a GIS data base. The spatial mapping information can be made visible using basic QGIS project files (.qgz), so that GIS data from each case study can be explored. QGIS is a free and open source geographic information system. In the spatial mapping portal derived using QGIS, a number of pollution indicators can be made visible. The indicators database can be used in several ways. It may be used to explore data or to calculate additional indicators. Depending of the case studies' interests, the most commonly available State indicators are about nitrate and pesticides concentrations in water. From a practical point of view based on its actual content, the database may notably be used to explore statistical relations between related Pressure and State indicators. This data base can be used as spatial mapping portal for other usage. The Harmonised database is described in Deliverable 3.3 and on FAIRWAYiS (<https://fairway-is.eu/index.php/farm-management/workpackages/harmonised-indicator-database>).

## 4. DESIGN AND TEMPLATE

The design of the website uses elements and colours from the FAIRWAY website and logo (Figure 1) and images to provide additional visual navigation cues (Figure 2). The template is responsive to facilitate viewing on a variety of screen sizes.

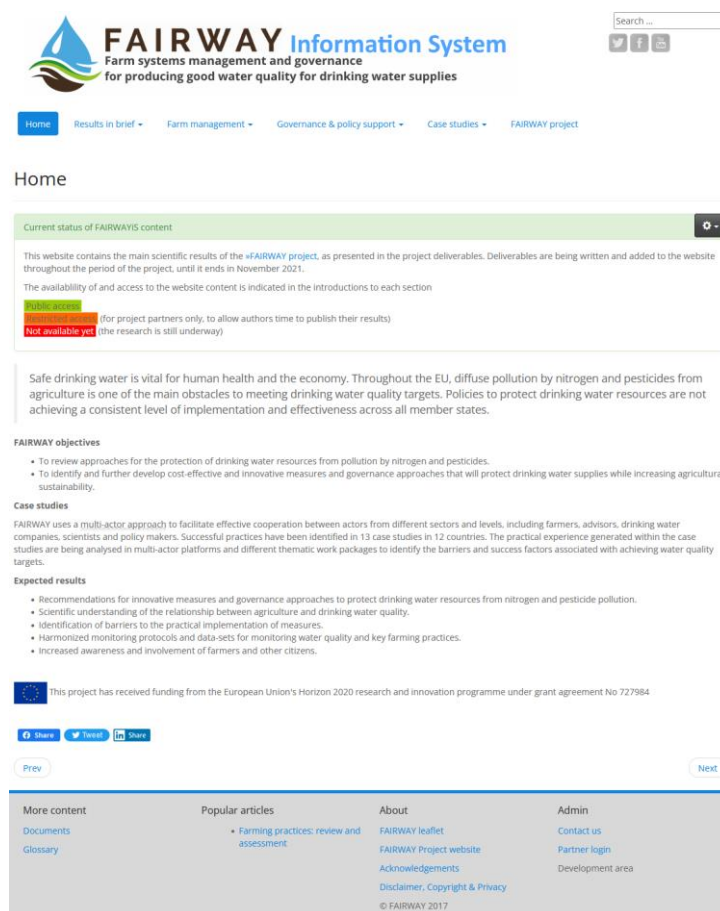


Figure 1: Design elements and colours are taken from the FAIRWAY website and logo



## Governance & policy support

Here we:

- examine the coherence and consistency of **EU directives and policies**, how they apply to farm water management in order to realize objectives from farm scale to national scale and EU scale and how to overcome possible shortcomings;
- **integrate and synthesise** the results from the other parts of the research programme, to identify key options for protection of drinking water resources against diffuse pollution of nitrate and pesticides from agriculture and to analyse the implications of these options for EU policies and practice;
- discuss how to actively use and further develop the **Multi-Actor Platforms (MAP)** approach with actors at primarily case study level and to some extent national levels as a base for executing the FAIRWAY project in close dialogue and involvement with key actors to ensure relevancy and maximum impact.

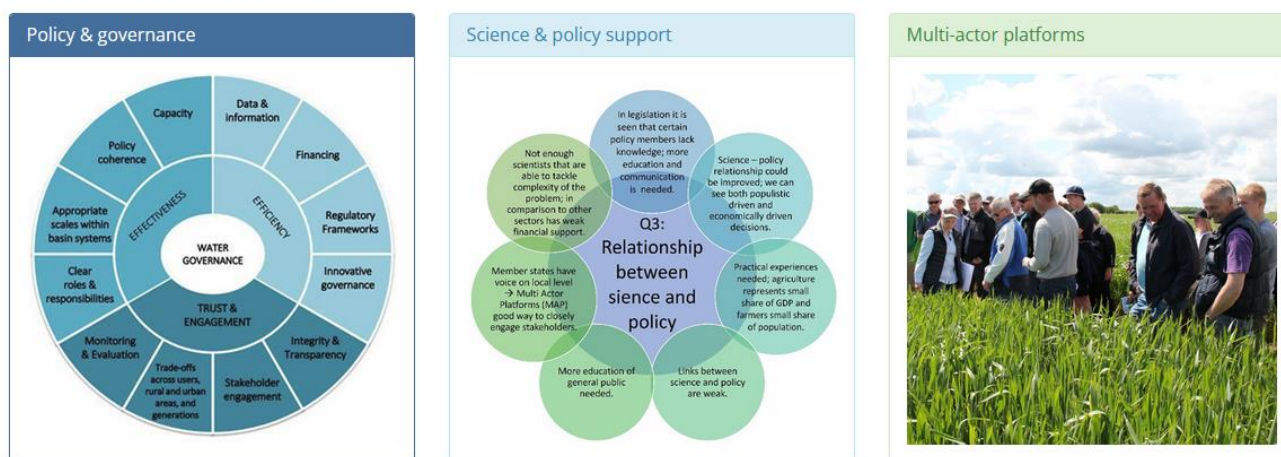


Figure 2: Images provide additional visual navigation cues

## 5. ORGANISATION OF CONTENT

The menu structure is based the project work package structure, with the following six main themes

- Farming practices: review and assessment
- Monitoring and indicators
- Decision support tools
- Policy and governance
- Science and policy support
- Multi-actor platforms

plus additional Results in brief and Case studies themes.

Each theme is divided into a number of sections, the content for which is derived from the deliverables as shown in Table 2. Each section is introduced by an executive summary followed by (typically) about 8-10 short articles dealing with scientific principles, experimental methods and study site examples in more detail (Figure 3). There are over 470 articles in total.

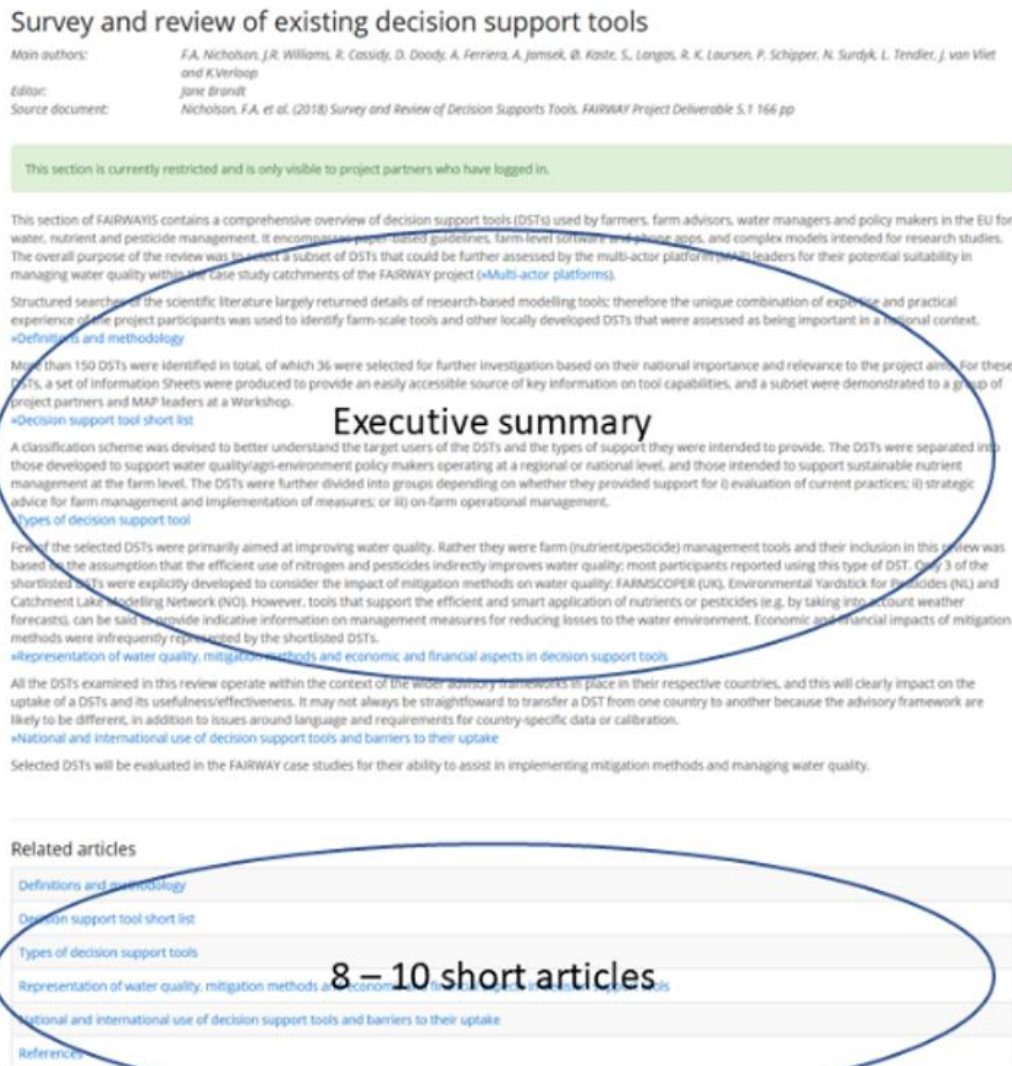


Figure 3: Sections are organised into an executive summary and related articles

Table 2: The theme, section and article structure of FAIRWAYiS

Theme	Section	Articles
Results in brief	Key messages, research highlights, video clips and infographics providing information about the effects of agriculture on drinking water quality in succinct and easy to read formats..	
	<b>Key messages</b>	16 key messages distilled from FAIRWAY's research results, written for specific audiences.
	<b>Research highlights</b>	26 summaries (one for each deliverable) of the research results as short highlight articles.

	<b>Video clips</b>	7 Short video clips introducing some of the research themes and case studies.
	<b>Infographics</b>	22 infographics providing information about FAIRWAY's major research themes and results, drinking water quality issues in the case studies and practices and approaches of proven benefit. Most of these infographics were designed by the case studies in communication with their stakeholders to explain local water quality issues and describe recommended practices.
	<b>Scientific publications</b>	List of publications resulting from FAIRWAY
<b>Farm management</b>	Review and assessment of measures and practices, identification, evaluation and development of agri-environmental indicators; review, demonstration and evaluation of decision support tools.	
	<b>Farming practices: review and assessment</b>	
	Review of measures to decrease nitrate pollution of drinking water sources	Review of measures to decrease nitrate pollution of drinking water sources. [D4.1]
	Review of measures to decrease pesticide pollution of drinking water sources	Review of measures to decrease pesticide pollution of drinking water sources. [D4.2]
	Management practices that reduce nitrate transport	Identification of most promising measures and practices: 2. Reduction nitrate transport from agricultural land to groundwater and surface waters by management practices. [D4.3]
	Management practices that reduce pesticide transport	Identification of most promising measures and practices: 1. Reduction of diffuse pesticide transport from agricultural land to groundwater and surface waters by management practices. [D4.3]
	<b>Monitoring &amp; Indicators</b>	
	Agri-drinking water quality indicators and IT/sensor techniques	Review report of Agri-Drinking Water quality Indicators and IT/sensor techniques, on farm level, study site and drinking water source [D3.1]

	Evaluating agri-drinking water quality indicators in three case studies	Evaluation of ADWIs: agri-drinking water quality indicators in three case studies [D3.2]
	Database containing harmonized data sets	(Short note for the) database containing harmonised datasets [D3.3]
	<b>Decision support tools</b>	
	Survey and review of existing decision support tools	Survey and Review of Decision Supports Tools [D5.1]
	Evaluation of decision support tools	Evaluation of Decision Supports Tools [D5.2]
	Assessments of costs and benefits using decision support tools	Assessment of costs and benefits for farmers, water companies and society from using Decision Support Tools [D5.3]
	Decision support tool framework	Development of a decision support framework [D5.4, 5.7]
	SprayDay: mobile app for infrequent pesticide users	Development of the SprayDay mobile app - assisting best practice amongst infrequent pesticide users [D5.5]
<b>Governance &amp; policy support</b>	Coherence and consistency of EU directives and policies; integration and synthesis of FAIRWAY results for EU policies and practice; development and use of multi-actor platforms	
	<b>Policy &amp; governance</b>	
	Coherence in EU law and policy for the protection of drinking water resources	Coherence in EU law and policy for the protection of drinking water resources [D6.1]
	Governance arrangements in case studies	Comparative assessment of governance arrangements in the case studies [D6.2]
	Effectiveness of EU legislation in the context of local realities	Protection of drinking water resources from agricultural pressures: effectiveness of EU regulations in the context of local realities [D6.3]
	Cost-effective and coherent management models for drinking water protection	Identification of cost-effective and coherent management models for drinking water protection in agriculture [D6.4]
	Policy brief: From farm to drinking water - fit for the future?	From farm to drinking water - fit for the future? [D6.5]

	<b>Science &amp; policy support</b>	
	Barriers and issues in providing integrated scientific support for EU policy	Evaluation report on barriers and issues in providing integrated scientific support for EU policy [D7.1]
	Actors' feedback on practices for improvement of water quality in FAIRWAY case studies and interim project results	Actor's feedback on practices for improvement of water quality in FAIRWAY case studies and interim project results [D7.2]
	Recommendations for the most promising activities, policies and tools	Recommendations of the most promising package(s) of measures, policies, governance models and tools at national and EU level [D7.3]
	Synthesis of the iterative process of knowledge and practice exchange	Synthesis report on the iterative process of knowledge and practice exchange in the FAIRWAY project for integrated scientific support for relevant EU-policies [D7.4]
	<b>Multi-actor platforms</b>	
	MAP activities and experiences conducted during the project period	Report summarising all the MAP activities and experiences conducted during the project period [D2.2]
	Lessons learned and recommendations for Water Safety Plans	Lessons Learned and Recommendations for Water Safety Plans [D2.4]
	MAPs as vehicles for resolving drinking water pollution issues	Advancing MAPs as vehicles for resolving issues on drinking water pollution from agriculture [D2.5]
	<b>Case Studies</b> Overviews of each of the case studies and details of their contributions to the different parts of the research programme	

## 6. FUNCTIONALITY

The main extension to basic Joomla functionality is the document download component, which gives access to all products intended for public access (most deliverables, some milestones, leaflets and brochures) through <https://fairway-is.eu/index.php/documents> (Figure 4)

### Monitoring & indicators


Access to some documents is currently restricted to project partners only, who should »Login to access them.

 [Review of agri-drinking water quality indicators and IT/sensor techniques](#)

Download

Agri-environmental indicators have been widely used on the EU level i. a. to monitor the Common Agricultural Policy and European environmental status. However, given the complex system and linkage of different agricultural production systems, as well as different settings and specific characteristics in hydrological systems, in this report we develop a range of indicators that analyse in depth the relation between agricultural inputs of nitrate and pesticides and the impact on drinking water quality as this is an aspect so far only broadly addressed within agri-environmental indicators.

Please cite as: Klages, S., Surdyk, N., Christophoridis, C., Hansen, B., Heidecke, C., Henriot, A., Kim, H., Schimmelpfennig, S. 2018. Review report of Agri-Drinking Water quality Indicators and IT/sensor techniques, on farm level, study site and drinking water source. FAIRWAY Project Deliverable 3.1. 180 pp. Available at [www.fairway-is.eu/documents](http://www.fairway-is.eu/documents)

 [Evaluation of agri-drinking water quality indicators in three case studies](#)

Download

In this report, agri-drinking water indicators are defined within the DPLSIR-framework including a new 'link' type of indicator. The link indicator is developed to better explain the relationship between pressure from agriculture and state of water quality. Datasets (long-term series of water quality in groundwater in combination with nitrogen pressure and pesticide indicators) from three of the FAIRWAY case studies (Island Tunø and Aalbork, DK and La Voulzie, FR) are analysed and recommendations made for a short-list of nitrogen, pesticide and link indicators.

Please cite as Birgitte Hansen, Hyojin Kim, Ingelise Møller, Abel Henriot, Marc Laurencelle, Tommy Dalgaard, Morten Graversgaard, Susanne Klages, Claudia Heidecke and Nicolas Surdyk. 2021. Evaluation of ADWIs: agri-drinking water quality indicators in three case studies (FAIRWAY Project Deliverable 3.2) Available at [www.fairway-is.eu/documents](http://www.fairway-is.eu/documents)

 [The link between agricultural pressure and drinking water quality state: lessons learned in Denmark and France - take home messages](#)

Download


A leaflet summarising the take home messages from the report the Link Between Agricultural Pressure and Drinking Water Quality State: Lessons Learned in Denmark and France

 [\(Short note for the\) database containing harmonized datasets](#)

Download

This report accompanies the harmonized datasets for water quality monitoring of drinking water resources and describes the development, structure and use of the datasets.

Please cite as: Marc Laurencelle, Nicolas Surdyk, Matjaž Glavan, Birgitte Hansen, Claudia Heidecke, Hyojin Kim, Susanne Klages 2021. (Short note for the) database containing harmonised datasets, 28 pp. FAIRWAY Project Deliverable 3.3. Available at [www.fairway-is.eu/documents](http://www.fairway-is.eu/documents)

 [Indicators database: tabular data \(including confidential data\)](#)

Download

This excel database contains all "tabular" (non-GIS) data related to the 13 case studies that was gathered for the purposes of FAIRWAY's Monitoring & Indicators research theme. It is structured as one "data sheet" and one "summary sheet" per case study.

Figure 4: The Results in Brief documents and full versions of most deliverables can be accessed through "Documents"

## 7. ANALYSIS OF FAIRWAYiS USAGE

We have data for the period from November 2020 to date on FAIRWAYiS usage from Google Analytics, an overview of which is given in Figure 5.

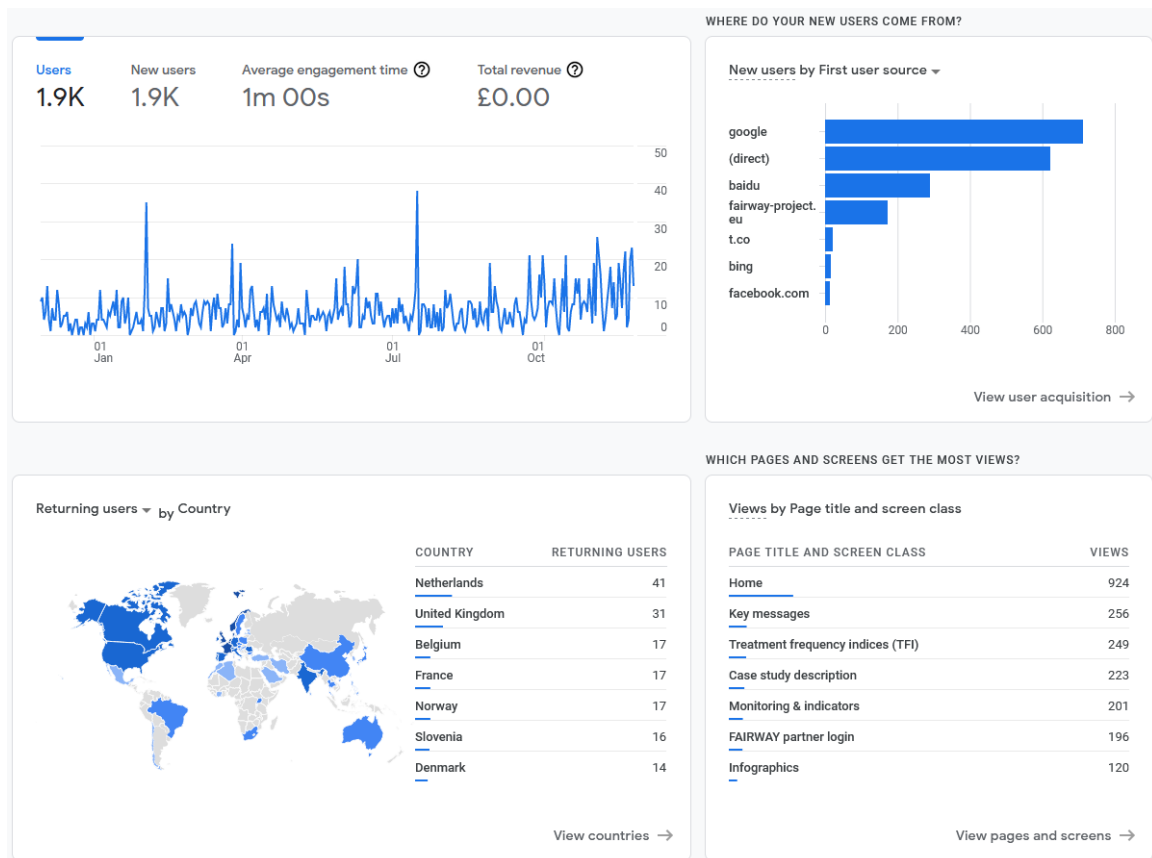


Figure 5: Overview of FAIRWAYiS usage from November 2020 to date (source Google Analytics)

The headline numbers show 1,910 people visited the website during the past 12 months, with an average engagement time of 1 minute. Most users reached the site through either Google or Baidu (a Chinese search engine), a direct link or the FAIRWAY project website. A small number came through Facebook. The origin of returning users by country shows that the top 7 countries were those in which FAIRWAY has partners and case studies. Of the total 5,748 page views, the most frequently viewed pages were the more general website and section introductions

1. Home page
2. Key messages (section introduction)
3. Treatment frequency indices (an agri-drinking water index - but probably not what the user was searching for)
4. Case study descriptions (section introduction)
5. Monitoring & indicators

Infographics, Decision support tools and Research highlights are also in the top 10.



First user medium ▾ +		New users	Engaged sessions	Engagement rate	Engaged sessions per user	Average engagement time
<b>Totals</b>		<b>1,892</b> 100% of total	<b>1,293</b> 100% of total	<b>48.19%</b> Avg 0%	<b>0.68</b> Avg 0%	<b>1m 00s</b> Avg 0%
1	<b>organic</b>	1,024	580	46.14%	0.57	0m 34s
2	<b>(none)</b>	623	346	38.44%	0.54	0m 52s
3	<b>referral</b>	245	367	69.77%	1.50	3m 15s

Figure 6: FAIRWAY user acquisition analysis

The user acquisition analysis (Figure 6) shows that of the new users, 68% stayed engaged with the site for at least 10 seconds or viewed 2 or more pages. Those who were referred from another website (most from the FAIRWAY project site) had the highest engagement rate (70%), most numbers of engaged sessions per user (1.50) and highest average engagement time (3m 15s).

Finally, the website content is extensive and text heavy, so it is not surprising that 72% of users accessed the site from a desktop (27% from a mobile and 1% from a tablet).

## 8. CONCLUSIONS

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As stated above, FAIRWAYiS is intended to be the long-term repository of information from the FAIRWAY project. It gives easy and comprehensive access to the project's results and (unlike individual deliverables or publications) shows them in the broader context of the research themes investigated, as well as interconnections between themes and the role of the case studies.

Throughout the life of the project, FAIRWAYiS has been in a state of development. Apart from referencing the website in other dissemination material, it has not been promoted per se. Now that the content is complete, we will be directing people to the website much more actively.

This presents an issue that is common to many EU-funded projects. While individual scientific articles may be published during the life of the project, fully exploiting the results in a holistic and an integrated way can only be done once the research programme has finished and relies on teams continuing to work after their contracts have ended. For the next three years, FAIRWAYiS website will continue to be hosted and maintained as an active website. Thereafter it will be cloned and placed on the Wageningen University and Research server.