

## 28. STATE NETWORK OF GROUNDWATER MONITORING POINTS

FAIRWAY partner: Matjaž Glavan (UL, SI), Case study leader Katarina Kresnik, Andrej Jamšek (KGZ Maribor, SI)

### Brief description

Policymakers and water managers (Ministry, Environmental Agency) accept their decisions based on the state-approved water quality monitoring network. Measured values and their trends over the years serve as one of the base indicators for introducing new measures or success in the past introduced measures. The temporal scale of state monitoring one to twice per year. A monthly, daily or weekly monitoring scale (depends on conditions) is performed by drinking water suppliers (water companies).

<b>Contaminants covered (e.g. nitrate, pesticides etc.)</b>	N, P, pesticides
<b>Intended end-users (e.g. farmer, water quality manager, policy maker)</b>	Policymakers, water managers
<b>Level of expertise and/or training required</b>	Moderate training and expertise to understand monitoring results. However, to decide on measures to be implemented, high level expertise and deep understanding of the local water system and agricultural practices are required.
<b>Geographical resolution (e.g. field, catchment, national)</b>	Water body/ catchment scale.
<b>Temporal resolution (e.g. daily, annual, long-term).</b>	Annually (State) Monthly, weekly, daily (Water company)
<b>Real-time component (e.g. live weather data, soil moisture data feeds etc.)</b>	Some stations are automatic with daily or hourly data.
<b>Number and type of mitigation measures included</b>	None
<b>Platform (e.g. paper-based tool, phone app, bespoke software).</b>	Paper-based tool.
<b>Frequency of updates</b>	The state monitoring network is stable; however, it has to be confirmed by the Ministry every year, depending on financial resources. Water companies have to follow water quality standards for active wells regularly.
<b>Cost/availability</b>	Free.
<b>Number of users or number of copies distributed/ downloaded/purchased</b>	Not known.
<b>Links to demo material and other relevant information (e.g. user guides).</b>	Open source – Web available. Paper-based tool. <a href="http://www.arso.gov.si/en/water/reports%20and%20publications/">http://www.arso.gov.si/en/water/reports%20and%20publications/</a> <a href="http://www.arso.gov.si/vode/podatki/">http://www.arso.gov.si/vode/podatki/</a> <a href="https://gis.arso.gov.si/portal/apps/webappviewer/index.html?id=a16308bd37344559b1c5d5e515468f49">https://gis.arso.gov.si/portal/apps/webappviewer/index.html?id=a16308bd37344559b1c5d5e515468f49</a>
<b>Additional comments</b>	In lack of other tools capable of modelling agri-environmental measures, this is still the preferred way of making conclusions and new decisions. Monitoring results are most often coupled with Eurostat/OECD results to accept new decisions/introduce measures.

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Input data required to run the DST	Location of monitoring points on certain surface waters or groundwater bodies.
Outputs (including links to water quality and economic or financial aspects)	<p>The concentration of nitrate and phosphorus.</p> <p>The concentration of pesticides.</p> <p>The concentration of heavy metals, volatile compounds, drug residues</p>
Age/provenance of supporting data used to develop the DST	<p>- Professional research and scientific knowledge was used to develop this paper tool.</p> <p><a href="http://www.arso.gov.si/en/water/reports%20and%20publications/">http://www.arso.gov.si/en/water/reports%20and%20publications/</a></p> <p><a href="http://www.arso.gov.si/vode/podatki/">http://www.arso.gov.si/vode/podatki/</a></p> <p><a href="https://gis.arso.gov.si/portal/apps/webappviewer/index.html?id=a16308bd37344559b1c5d5e515468f49">https://gis.arso.gov.si/portal/apps/webappviewer/index.html?id=a16308bd37344559b1c5d5e515468f49</a></p>
Country-specific calibration or data requirements (including restrictions on use)	No.
Details of validation and testing	No special details. Results are validated with repeated sampling.
Date developed/released (or planned release date)	Not available
Author/developer names and affiliations	Slovenian Environmental Agency
Member state(s) where developed	Slovenia
Member State(s) where currently used	Slovenia
Key publication references (including url)	<p><a href="http://www.arso.gov.si/vode/">http://www.arso.gov.si/vode/</a></p> <p><a href="http://www.arso.gov.si/en/water/">http://www.arso.gov.si/en/water/</a></p> <p><a href="http://www.arso.gov.si/vode/podatki/">http://www.arso.gov.si/vode/podatki/</a></p> <p><a href="https://gis.arso.gov.si/portal/apps/webappviewer/index.html?id=a16308bd37344559b1c5d5e515468f49">https://gis.arso.gov.si/portal/apps/webappviewer/index.html?id=a16308bd37344559b1c5d5e515468f49</a></p> <p><a href="http://www.arso.gov.si/vode/poro%c4%8dila%20in%20publikacije/">http://www.arso.gov.si/vode/poro%c4%8dila%20in%20publikacije/</a></p> <p><a href="http://www.arso.gov.si/en/water/reports%20and%20publications/">http://www.arso.gov.si/en/water/reports%20and%20publications/</a></p>

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## Any other useful information (e.g. screenshots of DST input/outputs)

### Network of groundwater monitoring stations (in the red circle case study of Dravsko polje)

**Podatki o kakovosti voda - 2020**

Podatki, objavljeni na spletni strani so zbrani in objavljeni v okviru imisijskega monitoringa kakovosti voda na Agenciji RS za okolje.

Podatki so rezultat kontroliranih meritev v mreži za spremljanje kakovosti voda.

Izpis podatkov na tej spletni strani so oblikovani do meje določljivosti. Analitične metode so dostopne v poročilih v naši knjižnici ali naši spletni strani. Tu so na voljo tudi opisi merilnih mest.

Podatki, objavljeni na spletni strani so javni in na voljo za ponovno uporabo skladno z Uredbo o posredovanju in ponovni uporabi informacij javnega značaja (U.I. RS št. 76 z dne 12.8.2005). V skladu s 26. členom navedene uredbe je obvezna navedba vira informacij "vir: Agencija Republike Slovenije za okolje".

**MORJE – izpisi podatkov po merilnih mestih za leto 2020**

- Podatki - morje 2020 – voda\_organizmi [xlsx, 51.5 KB]

**REKE – izpisi podatkov po merilnih mestih za leto 2020**

- REKE – izpisi podatkov za leto 2020 [xlsx, 299.4 KB]

**JEZERA IN ZADRŽEVALNIKI – izpisi podatkov po jezerih za leto 2020**

- Podatki - jezera 2020 – voda [xlsx, 86.0 KB]

**PODZEMNE VEDE – izpisi podatkov za leto 2020**

- Izpis podatkov za podzemne vode za leto 2020 [xlsx, 414.4 KB]

**POVRŠINSKE VEDE, KI SE ODVZEMAJO ZA OSKRBO S PITNO VODO - izpisi podatkov površinskih virov pitne vode za leto 2020**

- Površinske vode, ki se odvajajo za oskrbo s pitno vodo – izpis podatkov površinskih virov pitne vode za leto 2020 [xlsx, 23.1 KB]

**Podatki samodejnih hidroloških postaj - podzemne vode**

Za prikaz podatkov izberi postajo na sliki

graf za 1 dan graf za 7 dni graf za 30 dni tabela za 1 dan tabela za 7 dni tabela za 30 dni

**Legenda:**

- ▲ RRP požarne vode
- enkrat dnevni prenos podatkov
- ▲ RRP požarne vode-trenutno ni podatkov
- enkrat dnevni prenos podatkov-trenutno

### 3012 Dravska kotlina: NITRAT 1996-2016



### ARSO OKOLJE

Šifra VTPV	Ime vodnega telesa	Površinska voda	Obdobje	Ocena stanja glede na PO	Raven zauspejja ocene	Razlogi za zmerno stanje za PO
SI188979	VT Voglajna zadrževalnik Slivniško jezero – Celje	VOGLAJNA	2014-2019	DOBRO	srednja	
SI188871	VT Hudinja povišje – Nova Cerkev	HUDINJA	2014-2019	ZELO DOBRO	visoka	
SI188872	VT Hudinja Nova Cerkev – sočeloje z Voglajno	HUDINJA	2014-2019	ZMERNO	visoka	sulfat
SI1889VT	VT Gračnica	GRAČNICA	2014-2019	DOBRO	visoka	
SI189731	VT Krka povišje – Sotška	KRKA	2014-2019	ZELO DOBRO	srednja	
SI189777	VT Krka Sotška – Otočec	KRKA	2014-2019	ZELO DOBRO	srednja	
SI189797	VT Krka Otočec – Brežice	KRKA	2014-2019	ZELO DOBRO	srednja	
SI184772	VT Račešnica	RAČEŠNICA	2014-2019	ZELO DOBRO	srednja	
SI184771	VT Črmošnjica	ČRMOŠNJIČICA	2014-2019	ZELO DOBRO	srednja	
SI188733	VT Temenica I	TEMENICA	2014-2019	ZMERNO	visoka	otok, kobalt
SI188755	VT Temenica II	TEMENICA	2014-2019	DOBRO	visoka	
SI188775	VT Radulja povišje – Klevčevž	RADULJA	2014-2019	ZELO DOBRO	visoka	
SI188777	VT Radulja Klevčevž – Dobrava pri Škocjani	RADULJA	2014-2019	DOBRO	visoka	
SI188777	VT Prečna	PREČNA	2014-2019	DOBRO	visoka	
SI187119	VT Soča povišje – Bovec	SOČA	2014-2019	ZELO DOBRO	srednja	
SI187157	VT Soča Bovec – Tolmin	SOČA	2014-2019	ZELO DOBRO	srednja	
SI187330	MPVT Soča Sotška elektrarne	SOČA	2014-2019	ZELO DOBRO	srednja	
SI187113	VT Idrija povišje – Podrožja	IDRIJA	2014-2019	ZELO DOBRO	srednja	
SI187170	VT Idrija Podrožja – sočeloje z Blažo	IDRIJA	2014-2019	ZELO DOBRO	srednja	
SI1828VT	VT Trebušica	TREBUŠIČICA	2014-2019	DOBRO	visoka	
SI1828VT	VT Bača	BAČA	2014-2019	ZELO DOBRO	srednja	
SI1834VT	VT Koren	KOREN	2014-2019	DOBRO	visoka	
SI184757	VT Vipava povišje – Bije	VIPAVA	2014-2019	ZELO DOBRO	srednja	
SI184750	VT Vipava Bije – Miren	VIPAVA	2014-2019	ZELO DOBRO	srednja	
SI1844VT	VT Hubelj	HUSELJ	2014-2019	DOBRO	visoka	