The TRUST Tool for Water Risk Management

Dr. Andreas Abecker
Disy Informationssysteme GmbH

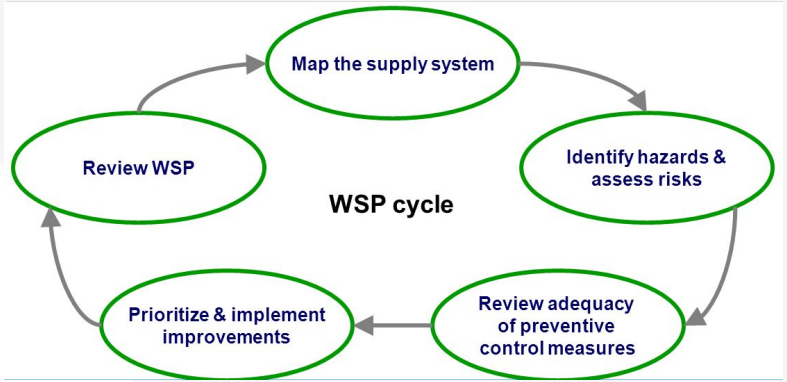
GRoW Final Conference - Stakeholder Forum C: Decision support systems to prevent water conflicts

Universität Stuttgart
KIT Karlsruher Institut für Technologie
TZW Technologiezentrum Wasser
disy
decon international
OTT Hydromet
INGENIEURBÜRO PABSCH & PARTNER
GEFÖRDERT VOM Bundesministerium für Bildung und Forschung
GRoW GLOBALE RESSOURCE WASSER

The WHO Water Safety Plan (WSP) Approach

A **water safety plan**

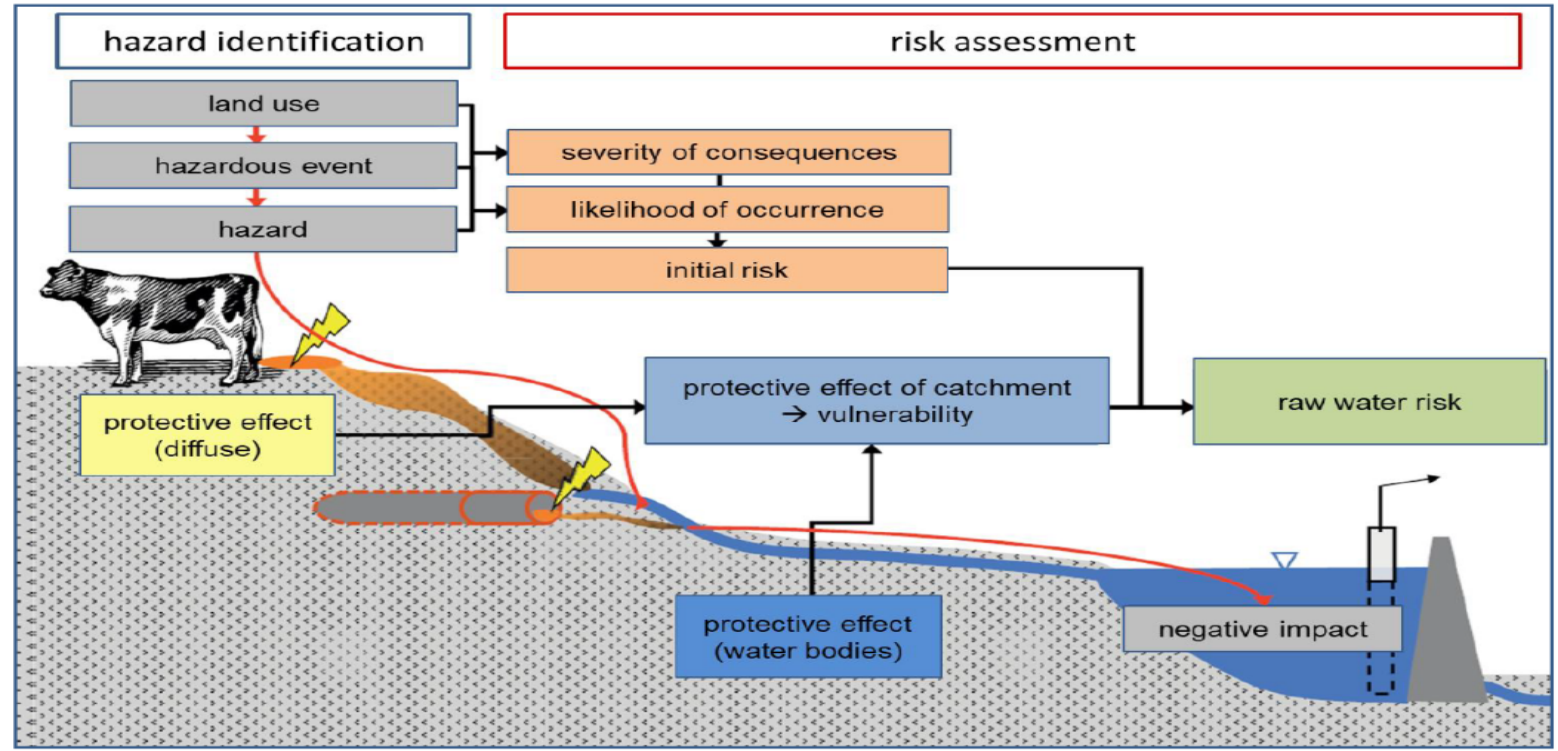
- is a plan to ensure the safety of **drinking water**
- through the use of a comprehensive **risk assessment** and **risk management** approach
- that encompasses **all steps in water supply** from catchment to consumer.



The WSP approach has been defined by the World Health Organisation (WHO) in their Guidelines for Drinking-water Quality (GDWQ).

Closely related to existing and upcoming European and German **norms, regulations, guidelines**, and best practice recommendations – like the European standard EN 15975-2 "Security of drinking water supply - Guidelines for risk and crisis management - Part 2: Risk management".

Risk Assessment at the Core of the WSP Approach

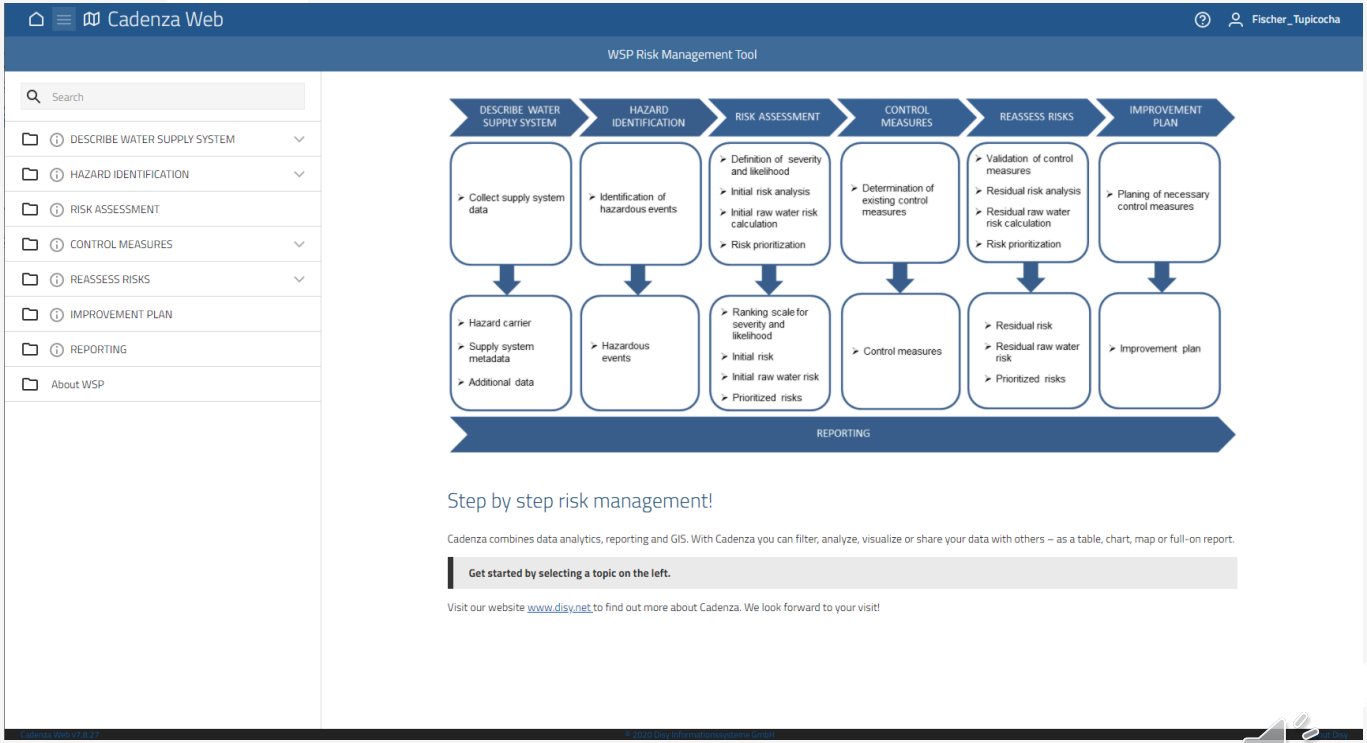


The TRUST WSP Tool

The tool aims at …

… input masks,
database persistency,
map-based interaction,
automated reporting

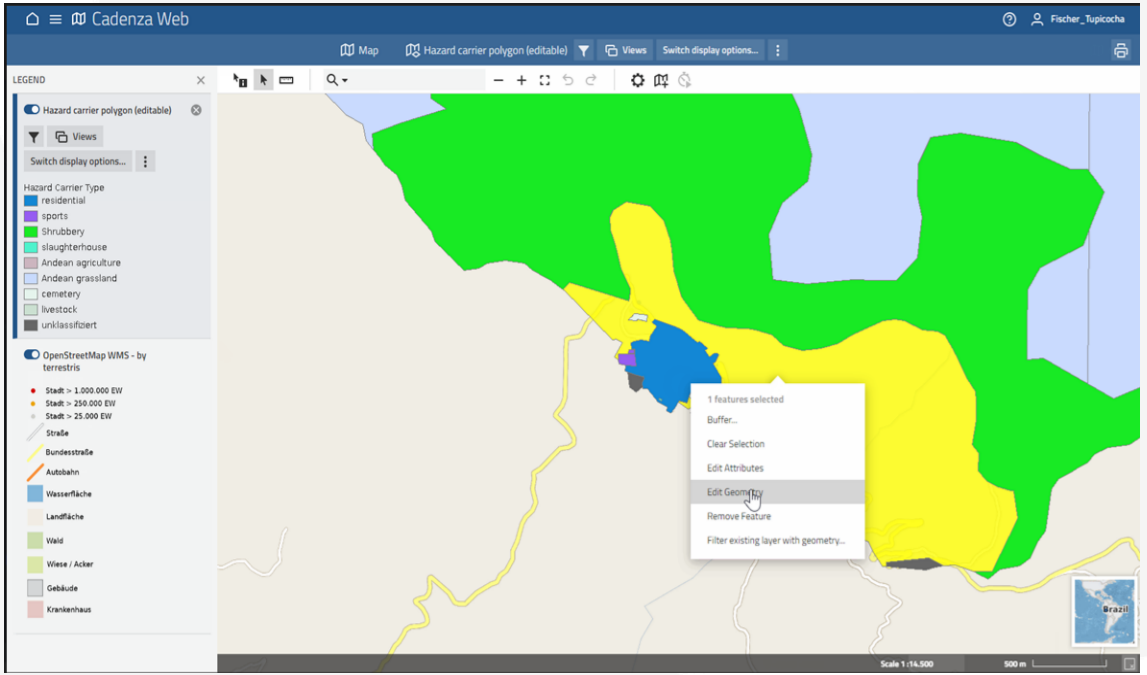
… for the full WSP cycle



Universität Stuttgart
Karlsruher Institut für Technologie
TZW Technologiezentrum Wasser
disy
decon international
OTT Hydromet
INGENIEURBÜRO PABSCH & PARTNER
ipp
GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung
GRoW GLOBALE RESSOURCE WASSER

Land-Use Map as the Starting Point for Risk Assessment

Geographic Information System (GIS) allows to edit geometries to be used as hazard carriers

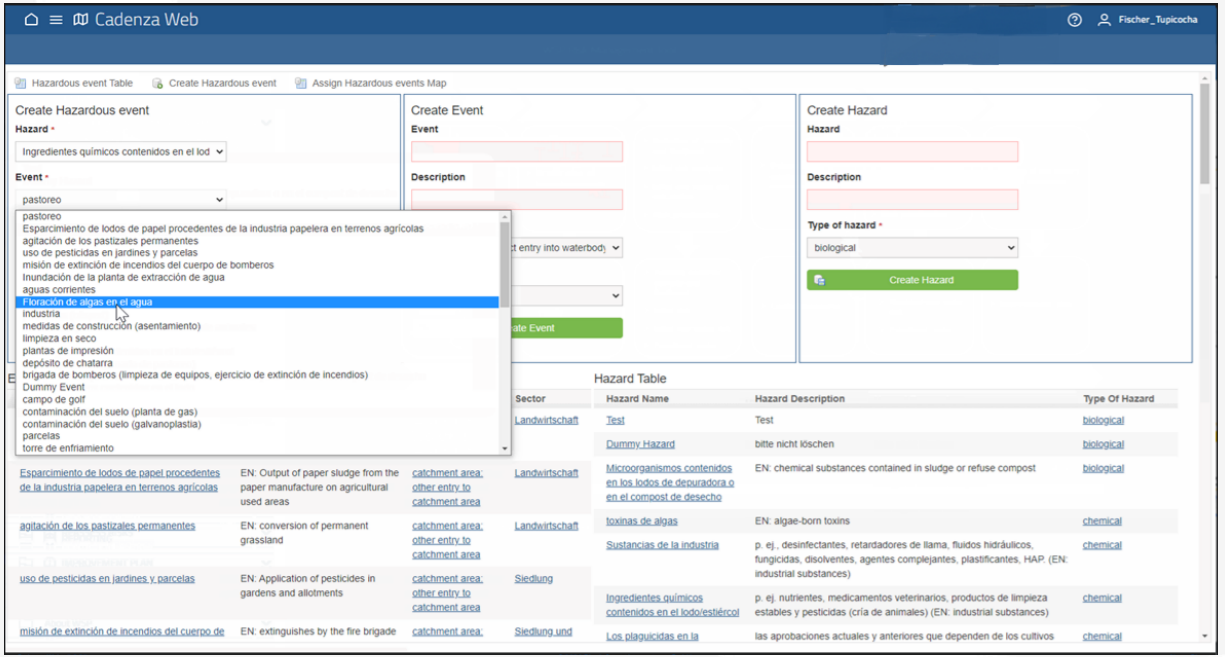


Universität Stuttgart
KIT Karlsruher Institut für Technologie
TZW Technologiezentrum Wasser
disy
decon international
OTT Hydromet
INGENIEURBÜRO PABSCH & PARTNER
ipp
GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung
GRoW GLOBALE RESSOURCE WASSER

Hazard Identification Based

Pulldown menus offer typical kinds of hazards

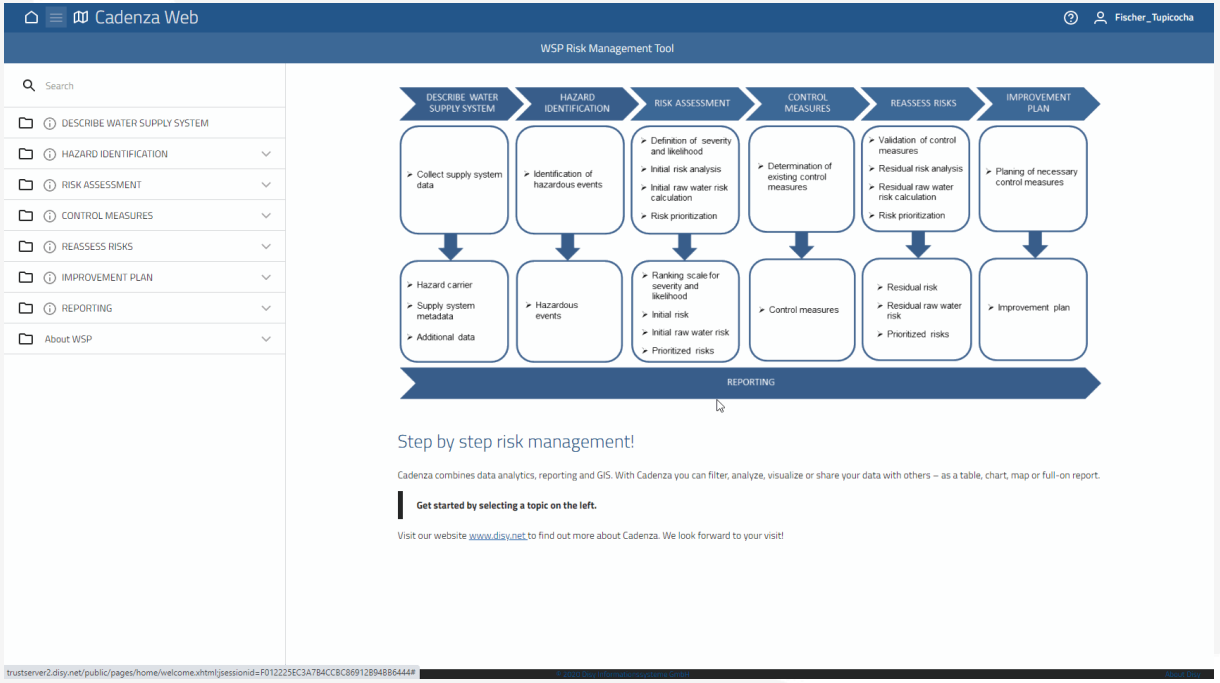
Hazardous events are attached to hazard carriers (geometries) in the GIS maps



Universität Stuttgart
Karlsruher Institut für Technologie
TZW Technologiezentrum Wasser
disy
decon international
OTT Hydromet
INGENIEURBÜRO PABSCH & PARTNER
ipp
GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung
GRoW GLOBALE RESSOURCE WASSER

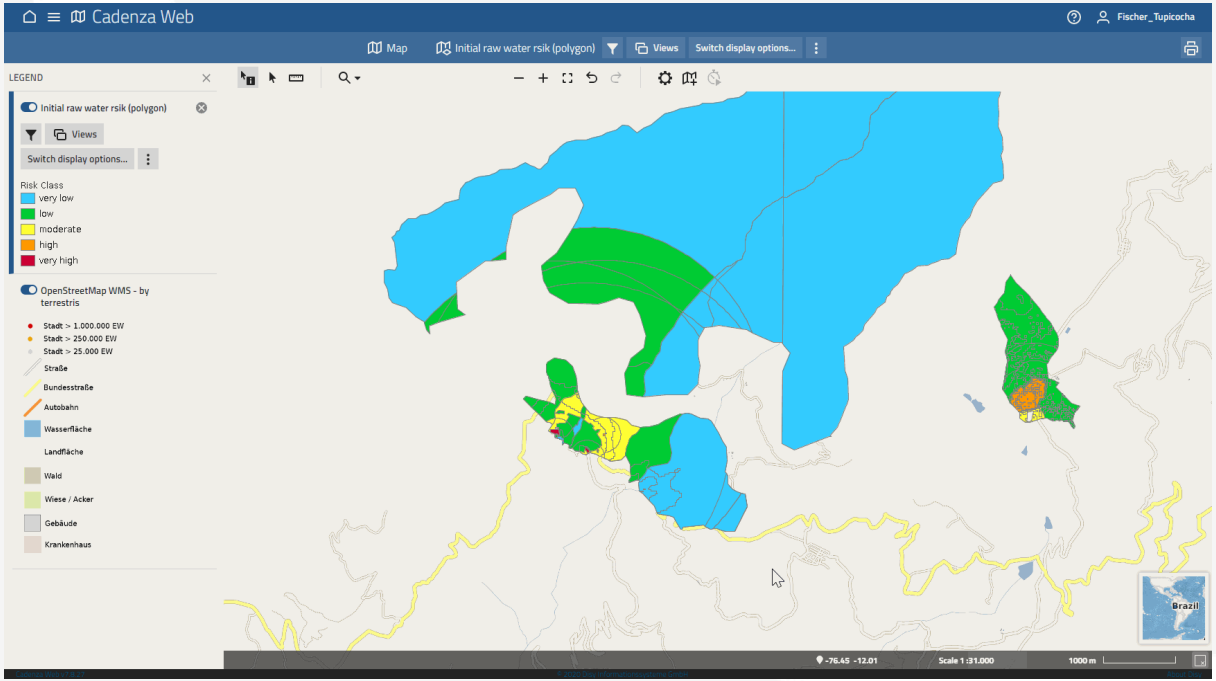
Description of Vulnerability

Vulnerability of groundwater resources is characterized as a GIS layer



Initial Raw Water Risk is Calculated

Intersection of accumulated risk with vulnerability leads to initial raw water risk



Universität Stuttgart
KIT Karlsruher Institut für Technologie
TZW Technologiezentrum Wasser
disy
decon international
OTT Hydromet
INGENIEURBÜRO PABSCH & PARTNER
pp
GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung
GRoW GLOBALE RESSOURCE WASSER

Summary

TRUST prototype covers significant parts of the WSP risk assessement step for a catchment area.

GIS, basic database support and reporting as the basis for sustained risk management and comfortable user functionalities.

Pilot implementations in TRUST test regions in Peru and in Germany.

Further development (coverage of full WSP cycle, further usability improvements, intelligent assistance functions) planned for future projects.

Have a look at our virtual exhibition booth!

http://trust-grow.de/

Universität Stuttgart · KIT Karlsruher Institut für Technologie · TZW Technologiezentrum Wasser · disy · decon international · OTT Hydromet · Ingenieurbüro Pabsch & Partner · ipp · Gefördert vom Bundesministerium für Bildung und Forschung · GRoW Globale Ressource Wasser

Some References

- Gottwalt, 2017): Jonas Gottwalt: Designing a web-based application for process-oriented risk management of drinking-water catchments according to the Water Safety Plan approach. Master thesis, Hochschule für Technik und Wirtschaft Dresden, Fakultät Geoinformation, Dezember 2017.
- (Rickert et al., 2016) B. Rickert, I. Chorus, O. Schmoll: Protecting surface water for health - Identifying, assessing and managing drinking-water quality risks in surface-water catchments. Geneva: World Health Organization, 2016.
- (Schmoll et al., 2014) Oliver Schmoll, Detlef Bethmann, Sebastian Sturm, Bastian Schnabel: Das Water-Safety-Plan-Konzept: Ein Handbuch für kleine Wasserversorgungen. Dessau-Roßlau: Umweltbundesamt, 2014.
- (Sturm & Kiefer, 2010) Sebastian Sturm, Joachim Kiefer: Risikomanagement im Ressourcenschutz. In: energie|wasser-praxis, DVGW, Nr. 6/2010.
- (Sturm et al., 2016) S. Sturm, F. Villinger, J. Kiefer, J.: Neuer Ansatz zum Risikomanagement für Talsperren-Einzugsgebiete - Teil 1. In: energie|wasser-praxis, DVGW, Nr. 5/2016.
- (WHO, 2011) World Health Organization (ed.): Guidelines for Drinking-Water Quality (4th ed). Geneva: World Health Organization, 2011.

Universität Stuttgart · KIT Karlsruher Institut für Technologie · TZW Technologiezentrum Wasser · disy · decon international · OTT Hydromet · Ingenieurbüro Pabsch & Partner · ipp · Gefördert vom Bundesministerium für Bildung und Forschung · GRoW Globale Ressource Wasser