WaterProtect - Innovative tools enabling drinking water protection in urban and rural environments

Scope and results & governance evolution through multiactor processes





BACKGROUND









High-quality, safe, and sufficient water is essential for life

European river and lake bodies: less than good ecological status and poor chemical status

Pollution of drinking water sources by pesticides (and fertilizers) used by the agricultural sector remains a big challenge







Best management practices are described...



... But the uptake and implementation remains limited





MAIN OBJECTIVE OF WATERPROTECT



Contribute to effective uptake and realisation of management practices and mitigation measures to protect drinking water resources





METHODOLOGY WATERPROTECT



Action research in local "action labs" with multiple actors (multi-actor)

New governance: alternative financing
Share data: participatory monitoring
Best management into practice

Bring information closer to actor using IT tools

Fertilizer and pesticide industry Bottled **Farmers Environment** water advisory Agency producers (farmer) Consumer Water producer Agricultural Nature Research/ and land agencies and nnovation **NGOs** Agencies Food industry and retail

(collaborative tools)





PARTICIPATORY MONITORING IN 7 ACTION LABS



Designing, aligning and bringing together monitoring data from scientists, environment agencies, drinking water companies, local farmers and citizens

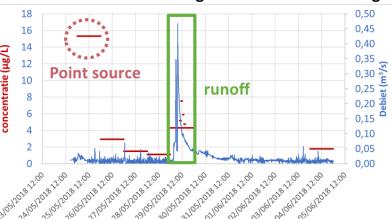
Targeted participatory monitoring being performed at each action lab on the basis of the information gathered and the main identified gaps

- producing the first data ever available for the area of study (certain pesticides in the vineyards of Italy)
- getting **involved additional actors**, such as school children, in the monitoring, as done in Romania through the use of simple kits for analysis of nitrogen species in groundwater
- focusing potential mitigation measures by identifying source, most critical compounds and sites and most critical pathways
- evaluating the efficiency of new best management practices (BMPs) implemented

within the project







BEST MANAGEMENT PRACTICES



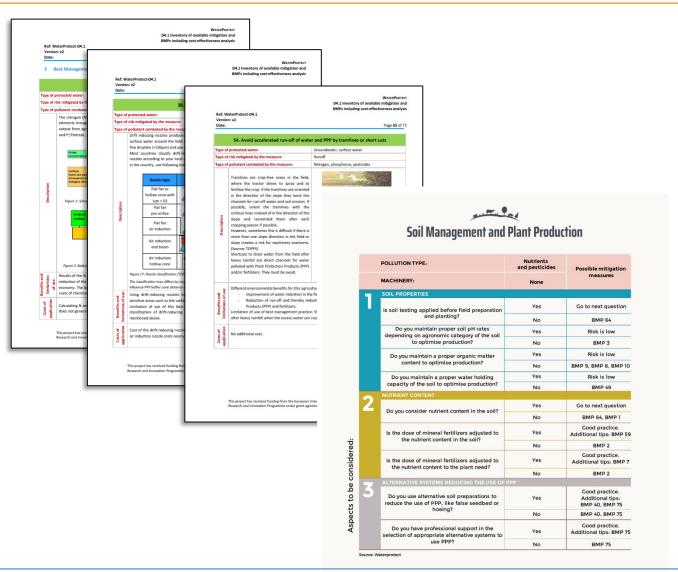
Inventory of available mitigation and BMPs including cost-effectiveness analysis – includes synthetic fact sheets about 77 BMPs

Inventory of applied mitigation measures and BMPs in pilot case study areas and assessment of the **potential for the uptake** of new ideas

Practice Abstracts of selected BMPs in EIPAgri database

Decision trees to develop local strategies

Identification of weaknesses of the current legislative and organisational set ups inhibiting the successful implementation of mitigation measures and BMPs

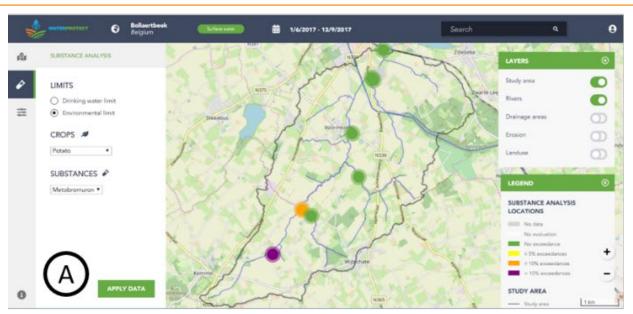


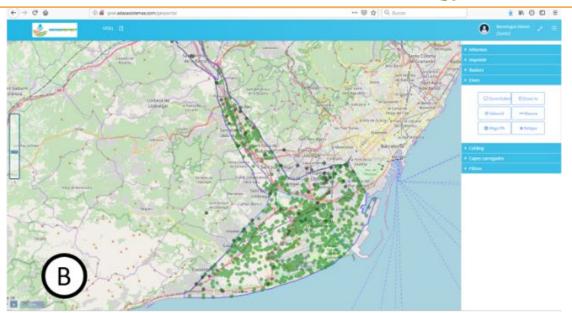
This project has received funding from the Europe Horizon 2020 Research and Innovation Programm grant agreement No. 727450

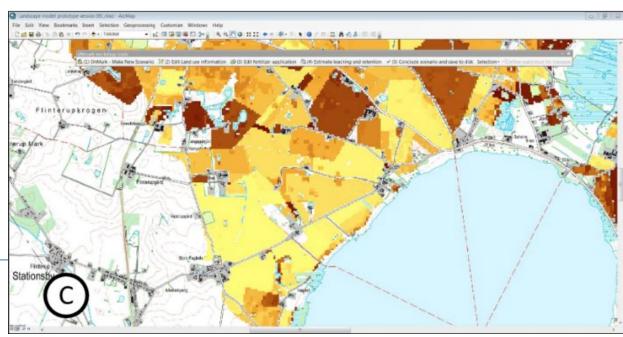


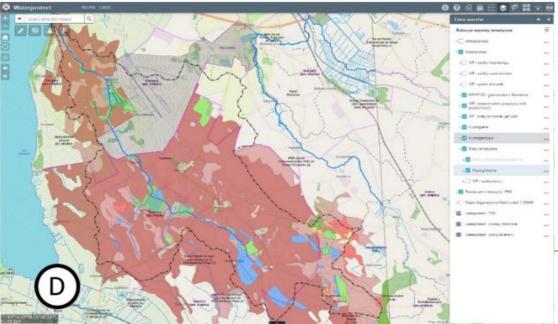
WATERPROTECT COLLABORATIVE APPS







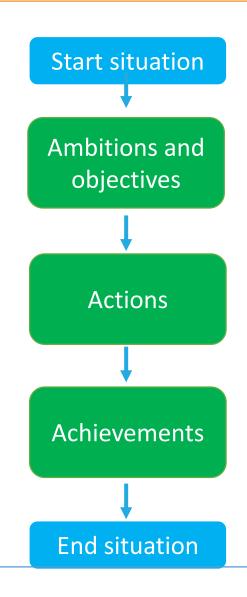






ACTION RESEARCH STEPS





Knowledge building

Choosing strategies (RESET)

- 1. Regulation
- 2. Education and information
- 3. Social pressure
- 4. Economics
- 5. Tools





KNOWLEDGE BUILDING



Compatibility of agriculture and water production?

Identifiability of the pollution sources?

What are suitable implementation measures?

Who are the relevant stakeholders?

How do the stakeholders perceive the local water quality?

How can stakeholders benefit from a better water quality?

Understanding the physical system

- Water quality monitoring (BE, IRL, PO, IT, DK, RO, ES)
- Risk maps (BE, IRL)
- Mathematical and/or capture zone modelling (PO, DK, IT)
- Field observations (PO, RO)

Understanding the governance system

- Workshops with local actors (BE, DK, ES, RO, IRL, IT, PO)
- Collection of information on crop rotation and fertilizer application (DK)
- Survey about drinking water wells (IRL), general activies in the catchment area (PO) and spraying and handling of PPP (BE)





ACTIONS – RESET FRAMEWORK



1. REGULATION

How can regulation be improved?
How can we urge farmers to not violate regulations?

e.g. gather difficulties and limitations, participate in consultation processes, provide extra information to farmers, improve information flow between institutions

2. EDUCATION AND INFORMATION

How can we raise the awareness of actors on the problem?

How should different actors be targeted?

e.g. newsletter, website, mobile app, fact sheets, local newspaper, farm visits, workshops, demonstrations, field observation with stakeholders

3. SOCIAL PRESSURE

How can farmers stimulate each other to improve WQ?
Which instruments can we use to improve social
pressure?

e.g. investigate alternative land use models, find local leaders, public-private partnerships, charter for a good WQ, voluntary agreement for the use of common washing platform, reward system for farmers

4. ECONOMICS

How can we give economic incentives to farmers to improve WQ?

How can we gather financial resources for investments?

e.g. convince drinking water company to finance farmers, set-up a common water fund, payment schemes for environmental services, additional fees related to non-compliance, support process of allocation of funds

5. TOOLS

Which tools can be developed to stimulate farmers to improve WQ?
Which infrastructure can help farmers to improve WQ?

e.g. development of online tools, provision of infrastructure (communal of private), improvement of design flaws, set-up of social arrangements





OVERALL FINDINGS



Main barriers inhibiting the effectiveness of measures identified in the majority of our action labs are:

- Too complex organizational set up of responsible institutions: many institutions involved in water management at national and regional/local levels which causes roles and responsibilities to be unclear and sometimes overlapping
- Little cooperation between stakeholders at local level lack of communication and exchange of information between institutions and towards farmers/NGOs
- Lack of coordination between regulations from different policy areas, creating situations where finding practical solutions at a local level is very difficult
- Low awareness of farmers regarding impacts they may cause on the environment little transparency of environmental monitoring programmes which do not inform farmers about their findings. Farmers are not aware about water quality results from national/regional water monitoring campaigns in their areas and as such are not aware of impacts they make.
- Action labs have formulated common ambitions on establishing long-term cooperations, knowledge building, raising actor awareness and improve uptake of BMPs and applied a variety of incentive structures to reach this
- The majority of the efforts in the action labs were focused on awareness raising, some action labs could convince their stakeholders rather quickly of the need to take action and spend efforts on the development of tools or financial incentives.



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