OPERATIONALISATION STAKEHOLDER WORKSHOP

04.12.2018, NEUFAHRN BEI FREISING, GERMANY

LOCATION: HOTEL MAISBERGER, NEUFAHRN (GERMANY) – PP 12 (HOST)

«LANDNUTZUNG UND INTEGRIERTER SCHUTZ *VON* UND *VOR* WASSER II – ERGEBNISSE UND ERFAHRUNGEN»

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1. Invitation

EINLADUNG

Workshop
"Landnutzung und integrierter Schutz *von* und *vor* Wasser II - Erfahrungen und Ergebnisse "

Sehr geehrte Damen und Herren,

Im Rahmen des Projektes PROLINE-CE, konnten wir, der Lehrstuhl für Hydrologie und Flussgebietsmanagement der TU München, anhand unseres Pilotgebiets Neufahrn bei Freising sogenannte *Best Management Practices* für den Trinkwasser- und den Hochwasserschutz determinieren. Unsere gewonnenen Erfahrungen und Resultate wollen wir nun, gen Ende des Projektes, mit Ihnen besprechen und diskutieren, bevor diese endgültig in den Projektergebnissen festgehalten werden.

Zu diesem Zwecke freuen wir uns, Sie heute zu unserem 2. Nationalen Stakeholder Workshop einladen zu dürfen. Dieser wird am

4. Dezember 2018 von 10.00 Uhr - 16.00 Uhr
im Hotel Maisberger,
Bahnhofstr. 54, 85375 Neufahrn bei Freising

stattfinden.

Bitte teilen Sie uns bis zum 14. November 2018 via E-Mail mit, ob und mit wie vielen Personen Sie an dem Workshop teilnehmen werden. Wir freuen uns über Ihre zahlreiche Teilnahme sowie auf interessante und zielorientierte Diskussionen.

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2. Minutes

2.1. Presentation of pilot action outcomes

The following Best Management Practices (BMP's) were discussed during our national stakeholder workshop:

2.1.1. BMP1: Finding site-specific solutions by means of hydrological modelling

Public engagement should take place already at early steps of the decision process. The development of action plans for the implementation of protection plans should be carried out in close cooperation with land owners that are directly affected by future regulations in the delineated protection zones. Possible actions and measures should be elaborated based on land owner's possibilities to use existing structures/facilities/machinery.

Hydrological models can be used to test how any kind of changes (such as land use changes) affect the hydrological processes in the considered area. Moreover, a fully coupling between monitoring and model can provide a powerful tool for on-the-fly decision making. Modelling results can provide relevant information for stakeholders regarding water quantity and quality and support decision makers in the implementation procedure for final management plans. In close cooperation between land owners and decision-makers, site-specific solutions can be found which can reduce the trade-offs between all stakeholders.

Engaging local stakeholders and affected land owners in the process of finding adequate, site-specific solutions can increase the acceptance of the finally proposed measures and potentially decrease the costs for compensation measures. Due to their daily business, land owners know best about potentials of how to restructure or manage their field operations. The hydrological model can be a joint working tool for all stakeholders (given a short introduction) and helps to evaluate the impacts of a planned management practice. The proposed measure can significantly reduce the existing mistrust between authorities and land owners.

A particular challenge of the proposed BMP is that little involvement generally leads to less acceptance of planned measures that could be decreased if site specific actions would be planned in cooperation with the affected land users.

2.1.2. Continuous monitoring in both, surface water and groundwater

This BMP proposes to enlarge the infrastructure of the existing monitoring network towards a higher temporal and spatial resolution of relevant water quality and quantity data. Therefore, in a first instance, an overview over existing data needs to be gathered to identify relevant, i.e. site-specific and question-related, data gaps. Once relevant gaps were identified, suitable installation points for new measuring devices have to be found and the temporal resolution at which each measuring device should operate have to be set. Finally, the enhanced monitoring program can start.

Generally, the value of a continuous monitoring of water-related data should be more emphasized in existing policy guidelines. Water suppliers as well as water authorities should receive incentives to better manage available data and to collect hydrological data more frequently and with a higher spatial resolution.

A comprehensive monitoring of relevant hydrological data provides valuable insights into the functioning of a regarded catchment or study area. Well-managed and highly temporally and spatially resolved data form the base for an in-depth understanding of the ongoing hydrological processes as well as for understanding the effects of external impacts, such as land use and climate change, on the natural system.

We assume the greatest challenge will be to implement a better structure for data management between and in different responsible authorities. Moreover, data transfer from privately owned measuring devices should be made more interesting for the owners to share their data.

2.2. Presentation of measures and funding systems for supporting ecosystem services

Regarding our pilot area in Neufahrn bei Freising, related measures and possibilities for funding are related to agricultural sites. These comprise the following:

- mitigation of soil erosion through permanently covered soils,

- groundwater recharge through preferential flow paths given by the root zones and bioturbation,

- soil water storage provided by the soil texture and organic matter,

- purification of infiltrating water on grasslands and

- protection from evapotranspiration on grasslands.

All mentioned measures are eligible in the framework of the funding program KULAP (Kulturlandschaftsprogramm) in Bavaria. However, only farmers are eligible who manage at least 3.00 hectares of land used on their own for the entire 5-year commitment period.

Another important funding system is the private cooperation between farmers and public water suppliers. These are voluntary and private-law cooperations in drinking water protection zones with the aim to reduce the leaching of nitrate and pesticides.

2.3. Carousel discussion

The focus of our carousel discussion was related to the BMP's derived for the pilot area Neufahrn bei Freising, which are Hydrological Modeling and Data Monitoring. Moreover, the focus was on drinking water and flood protection in agricultural areas. Generally, the stakeholders asked a lot questions with respect to the possibilities of modelling approaches in terms of what they really can model.

Different stakeholders raised the issue, that the implementation status of both BMP's can be considered closely related: a general use of modelling tools to evaluate and predict recent and future trends is strongly coupled to data availability.

2.3.1. BMP1: Finding site-specific solutions by means of hydrological modelling

Stakeholders have different necessities of what has to be modelled depending on the requirements of their particular catchment. The modelling requirements stated by the stakeholders are:

- modelling nitrification processes in the soil (e.g. if water is extracted from a shallow aquifer and the water quality is strongly coupled to agricultural practices),

- modelling the hydrological effects of drought and flood events on the water availability and quality,

- detection of reasons for nitrate trends

- making long-term predictions of water quantity and quality for water suppliers and

- evaluation of soil water retention potentials.

Different stakeholders proposed, that the use of modelling approaches can be in particular helpful in the process of prioritization, i.e. evaluation of areas where a defined status quo related to water quality and quantity has to be achieved. Water consultants can use a modelling approach as a communication tool to discuss with farmers. The stakeholders further mentioned that, under this condition, farmers might be willing to provide data for the models.

All in all, the acceptance of modelling approaches as BMP's can be considered high to find site-specific solutions. All stakeholders agreed on the fact, that using modelling approaches in a participative framework, i.e. as a communication tool, the willingness of stakeholders to enter into communication can increase. Models can further help to elaborate regional differences regarding the effectiveness of implemented (land use) measures as well as to avoid global perspectives on different measures, e.g. the opinion that maize is generally bad for drinking water protection.

2.3.2. BMP2: Continuous monitoring in both, surface water and groundwater

Generally, we discussed about how data availability can be improved and what it needs to improve monitoring strategies for hydrology-related data. An issue raised by the stakeholders is that if given data pools should be enlarged with data from other sources (e.g. private people), data comparability and reliability has to be ensured. This can be a challenge if information about measuring techniques cannot be gathered.

A first step towards increasing data availability and monitoring should be to evaluate existing data to identify data gaps. This can help to develop tailored monitoring plans. However, a general issue raised by some stakeholders, is that data monitoring is mostly performed as an action of the public domain. This means, that each action for which costs occur have to fulfil a particular need of a considered public institution (e.g. water supplier or water authority). This is a strong limiting factor for performing data monitoring with a better resolution in time and space.

However, all stakeholders agreed on the fact that data monitoring is a crucial BMP for status quo evaluations as well as to identify possible problems as early as possible. Dr. Philipp Theruring

from SEBA Hydrometrie presented recent advances in measuring technique developments and showed, that also water quality parameters (e.g. nitrate) can nowadays be continuously measured and that the near future will further offer new opportunities to continuously monitor more (water quality) parameters. We discussed that these new measuring techniques can potentially reduce lab analysis costs in the near future.

Finally, we discussed the possibility of measuring nitrate isotopes to determine possible sources of nitrate in a defined catchment. Stakeholders liked this idea, but still the analysis costs for this measure is limiting the application (ca. 350€ for one sample).

2.3.3. Common strategies towards future drinking water protection

It can be stated that all stakeholders generally agreed on our defined BMP's and accepted their values to improve an integrated water resources management. Therefore, it will be important to increase public awareness and to get more people involved in common problematics in a considered region. Our stakeholders proposed, that discussions about drinking water and flood protection should not be considered as a single topic, but discussed together with other environmental topics, e.g. biotope protection and bee mortality. It is important that interested people have to go to one discussion round for several topics and not to several discussion rounds with single topics. By this, public engagement can be increased.

For a common strategy towards drinking water protection, it is of crucial importance to bring all relevant stakeholders together. Therefore, all participants agreed that our proposed BMP's can significantly contribute to improve common and participative strategies.

3. Main Results/Feedback

3.1. Impact and benefits for the stakeholders

Generally, we experienced intensive and interesting discussions with the stakeholders. All participants were highly engaged and interested in the presented topics. Although not required, we performed a survey after the workshop in order to see whether or not the stressed topics were of interest and if the stakeholders felt engaged enough during the event.

We figured out that, all topics were of interest for the different stakeholder groups and that each participant felt comfortable during the discussions. Most of the stakeholders also agreed that the raised topics have an impact on their daily operations and that they all see benefits in the outcomes of the PROLINE project.

During our discussions, we could further see that for some stakeholders, we could raise the awareness about the possibilities different modelling tools can offer and which new technologies exist for continuously monitoring water quality parameters in different hydrological systems, i.e. groundwater and surface water.

3.2. Transferability to other stakeholders and territories

The connections we built during the project time of PROLINE-CE will probably last also after the end of the project. Regarding the outcomes of the stakeholder discussions, we are sure that the way how we conducted the stakeholder workshop and how we stressed the different, partly technical topics (e.g. hydrological modelling) can be transferred to other stakeholders and other territories. We also heard from different stakeholders that they discussed the PROLINE topics with other colleagues, thus, we already know that the transferability of our outcomes to other stakeholders and territories is given.

3.3. Lessons learnt

We learnt that proposing Hydrological Modelling as a BMP cannot be considered solely related to modelling hydrological processes and related effects of land use operations. However, different modelling approaches need to be considered for different sites with respectively varying modelling requirements, e.g. in some parts the interest is more on simulating trends of nitrification processes while somewhere else the focus should lie on long-term predictions of the effects of floods and droughts on a considered water reservoir.

Moreover, we further saw that in particular the discussions with farmers can be a challenge. This was not only stated by stakeholders coming from the water part, but also from farmers themselves. Thus, we learned that communication with all stakeholders involved in water resources protection needs to be tailored and include incentives for each of them.

4. Photos

5. Participant list

name	first name	institute/company
Kainzmaier	Barbara	WWA München
Lutz	Hans	
Reiter	Josef	Zweckverband Harpfing
Pfeiffer	Thomas	Bayerischer Bauernverband
Stemmer	Maria	Bayerischer Bauernverband
Margraf	Christine	BUND
Pflügler	Stephanie	Gemeinderätin Neufahrn
Pflügler	Johann	Feldsaatenerzeugerring Bayern
Heinrich	Rene	WUK Ingenieurbüro
Bellinger	Johannes	WWA Weilheim
Huber-Garcia	Verena	LMU München
Perosa	Francesca	TU München
Sheikhy N.	Tahoora	TU München
Theuring	Philipp	SEBA
Schöber	Johanna	LfL
Kilian	Michael	WZV Freising-Süd
Rauch	Franz	WZV Freising-Süd