



Improved Management of Contaminated Aquifers by Integration of Source Tracking, Monitoring Tools and Decision Strategies



Notes from the second INCOME workshop: *'Farming and water protection area – how to bridge the conflict of interest?'*



Ljubljana, 10.2.2011

Notes from the second INCOME workshop: 'Farming and water protection area – how to bridge the conflict of interest?'

On Thursday 27.1.2011, the second INCOME workshop 'Farming and water protection area – how to bridge the conflict of interest?' was held on the premises of JP VODOVOD-KANALIZACIJA d. o. o. The purpose of this meeting was to face the many conflicting opinions of farmers, professional institutions, local communities, government institutions and operators of water distribution systems, to consider the efficacy and acceptability of the proposed measures by the Slovenian Environmental Programme (SAEP) also in water protection areas, and to find constructive answers and solutions to enable the simultaneous preservation of farming activities and the supply of drinking water while taking into account both the interests and characteristics of farming and the water protection area. Project INCOME is implemented at the water sources of the Ljubljana Field and Marshlands, but the participants' views also related to experiences from other environments. The workshop was held from 9am to 1pm with 38 participants attending.

The professional introduction to the workshop was provided by mag. Joerg Prestor from the Geological Survey of Slovenia who introduced the present agricultural use of land and pollutants whose source is agricultural use. In his presentation, he estimated with what excess of nitrates and pesticides in g/ha, and an infiltration of 625L/m² per year, can we avoid in the future the occurrence of contaminants from pesticides and the increase of pollutants from fertilisers above the permitted or recommended concentrations in groundwater. He touched on the Municipality of Ljubljana spatial plan that provides for continued agricultural use of land in the Water Protection Areas (WPA) labelled I and IIA, where urbanisation should not intervene. However, it has been established that in the implemented Municipality of Ljubljana spatial plan, there are 1,083 hectares of agricultural land, both in WPAs and outside them, that are having their land use category changed even though most of those are prime agricultural land.

The participants continued their work in four groups and four assemblies.

ASSEMBLY 1.

Summary of the discussion on the effectiveness, acceptability, and possible control of the SAEP measures for WPAs.

The participants discussed the SAEP measures relative to their possible effectiveness for a WPA, and the measures summarised from 'FAL Maßnahmen zur Reduzierung von Stickstoffeinträgen in Gewässer - eine wasserschutzorientierte Landwirtschaft zur Umsetzung der Wasserrahmenrichtlinie'.

Among the measures discussed by the participants, the following were deemed effective:

- reduction of nitrogen intake,
- ban on the use of sewage sludge,
- fertilisation based on fertilisation plans,
- education,
- keeping records on the use of plant protection products (PPP),
- a ban on the use of mineral fertilisers and PPPs,
- prognosis based use of PPPs, (critique: there is no prognosis)





- abandoning fields,
- organic farming,
- intermediate crop with normal (early) ploughing,
- a mandatory year round green cover,
- fertilisation management with organic fertilisers.

The participants placed among the ineffective measures mandatory five-year or three-year crop rotation. They were also of the opinion that, given normal weather conditions, it makes no sense to consider extending deadlines for the prohibition of fertilisation with organic fertilisers and mandatory coverage of soil with winter hardy crops.

Among the measures recognised as unacceptable by the participants are the following:

- complete abandoning of fields,
- two-year lying fallow,
- intermediate crop resistant to winter,
- early ploughing,
- crop rotation (3 and more per year),
- absolute ban on mineral fertilisers and PPPs.

According to participants, control is feasible, but only to a certain extent with the question remaining whether it is actually implemented. Some measures (e.g. quantity of mineral fertilisers used) are difficult to control, while control of organic farming is possible.

The role of surveillance is complex and is not solely directed at finding those who act contrary to the regulations. Results from monitoring (note: not from an inspection) serve farmers as an information base to implement appropriate actions (e.g. for preparing fertilising plans).

The debaters were unable to avoid the issue of compensating farmers for their loss of income. An example of a farmer cultivating land on WPA I was presented. The law prohibits the use of pesticides and the farmer observed the ban. This area is now a meadow generating a revenue loss. The farmer expects a systemic solution. Water distribution system operators bound by legislation to pay out compensations are unnecessarily in conflict with farmers. However, they have no financial resources for payments because the pricing methodology does not allow it. Considering the possibility of paying compensations from water fees was proposed.

The main purpose of agriculture is the production of food. Given that a belief has been created that farmers are acting contrary to the rules, the public demands that they are strictly controlled. Monitoring shows that this is not the case and that farmers deserve more trust. It is necessary to establish a different attitude towards farmers by spreading information and raising public awareness.





ASSEMBLY 2.

In terms of the quality of groundwater and the sustainability of agriculture, is the current method of use of agricultural land on WPAs acceptable?

A trend of general improvement has been identified in terms of contamination of the quality of groundwater by agriculture. The workshop participants agreed that the current management of farming on WPAs, with an emphasis on WPA I and WPA IIA is unacceptable in terms of farming, because the general package of equal or similar actions on all WPA I in the Republic of Slovenia is irrational and not entirely feasible. The current provisions of the law (note: WPA Regulations) do not allow normal agricultural production; the restrictions are too strict and vague, while the methods of farming are insufficiently well defined. With restrictions in place, it is necessary to offer alternatives to farmers that they do not have currently. A specific set of measure should be defined relative to the different natural conditions (precipitation levels and dilution of pollutants, soil type, etc.). The profession must define what is good practice for a specific area (and not only what is good practice in general). Farmers need a concrete model, and a parallel system of compensation or subsidies for the loss of income which are a prerequisite for environmentally sound agriculture. The present concept of the compensations is inadequate. Drawing on experiences from abroad is logical, but as these experiences are not always directly transferable to our environment there are serious doubts that require careful consideration. It is necessary to define the entire system, including the technology, required by a type of farming. Land consolidations directed into organic farming are needed on WPAs. The participants centred on farmers coming aboard voluntarily, but are aware that this is a long-term process, which is largely based on trust.

In which areas have you ascertained or anticipate (depending on the type of agricultural activities, natural resources, and current work of professional services) greater or lesser impact on groundwater?

Major impacts are felt in areas where the soil is shallow, where groundwater is close to the surface, on karst ground, and in areas agricultural practices have been based for many years on monoculture (corn in Dravsko polje). Where crop rotation is present, leaching of pollutants is smaller. Occasionally, due to improper use, contamination may occur anywhere. The effects on an annual level are strongly dependent on rainfall. The agricultural method of production is not adapted to natural conditions, mainly because there is no alternative and the traditional methods of production are bound to available land and available labour.

Are the proposed SAEP measures appropriate and a sufficient solution for the stability of farming on WPAs with the parallel maintenance of environmental quality?

The proposed SAEP measures are aimed at protecting the environment with the parallel sustainability of agriculture, but are not a sufficient solution, as ascribing to these measures is on a voluntary basis, while agricultural activities on WPAs are expected to follow the compulsory measures that would be prescribed. While SAEP actions are not directly aimed at protecting water, some of them may have a greater or smaller effect on water. Therefore, it is important that the existing SAEP measures are specifically evaluated for their effects on water. Those with greater effects should be additionally encouraged on WPAs.





The opinion of a farmer with a tradition of organic farming is that organic farming is possible. The same experienced organic farmer would expect a higher degree of voluntary orientation into organic farming from other farmers. Organic farming would have irrigation needs as supply by tanker is too expensive a solution. According to the profession, fertigation, irrigation with the controlled addition of nutrients is an appropriate approach for land use on a WPA. From this perspective, it is reasonable to consider the possibility that certain irrigation on a WPA is allowed for those who farm organically.

ASSEMBLY 3.

The role of farming in a water protection area

According to workshop participants, farming in water protection areas (WPA I and II) should remain the dominant activity, where it has the role of preserving the natural and cultural landscape and the role of supplying the population with food that is grown locally. Water protection areas should be managed properly, preventing uneconomic and inappropriate use, as they could become overgrown or illegal dumpsites. Farming is within the context of agreed, clear and feasible ways of protecting water protection areas from urbanisation.

The role of the government, local communities, professionals, and farmers in maintaining the quality of groundwater

It is necessary to establish at the state level appropriate legislation that will allow the creation of specific farming models, control, compensation, and effective sanctions. Political influence should withdraw before professional opinion. A more intensive cooperation is required between ministries and the bodies in their composition. Education of farmers should become mandatory. The state must show greater interest for participating in managing land substitutes. The network of quality control of drinking water should be updated, leaving out irrelevant sites.

Local communities have the main role of directing the use of space in their environment. Much can be done with proper spatial planning and long-term planning for safe drinking water (combining smaller systems into larger ones), as well as by raising awareness and providing information. Soil analyses implemented by Municipality of Ljubljana (for instance) are shown as a good experience and the foundation for the establishment of fertilisation plans, but they also have the role of moral incentives when results show an adequate effect (e.g. an economic result or when there are no incompatibilities). According to some participants, under the current management, the local community should assume the role of the main operator and junction for the problems and solutions. The transfer of regulating the legal framework to the national level has not yet relieved local communities of responsibility for the environment. Local issues cannot expect to be addressed at the national level; neither can critical situations be recognised. For this reason, the role of local communities, among others, is to ensure that the formally set legislative provisions come to life in the field. As water and the supply of drinking water cannot know municipal boundaries, some participants believe that task operators are necessary to accurately guide long-term agriculture, the regions, as well as the union of municipalities. The role of local communities is also the intensive cooperation in the processes of land consolidation or purchase of lands, where appropriate and possible. The local community also has the potential to promote the sale of food produced on a WPA on the local market (schools, kindergartens), in order to encourage municipal self-sufficiency with healthy food.





A clear layout of models and criteria to determine what is allowed on a WPA and what is not, is expected from professional institutions. The transfer of specific knowledge alone is not enough in Slovenia; one reason for this is the overburdening of the agricultural profession in the field with administration work. The task of the profession is raising awareness, the transfer of knowledge, support, and advice with specific models of farming new to farmers, as well as aid in decisions. The role of the profession in the field is currently too small and not sufficiently involved in the decision process.

The predominant view at the workshop was that farmers will take into account the arrangements implemented by legislation if these are professional and stimulating. Farmers must see their activities on WPAs as promising, but today's circumstances do not support this. Farmers are expected not only to know what are the impacts of inappropriate agricultural use of land on a WPA, but also to comply with the instructions and examples of good practice.

ASSEMBLY 4.

Is farming on a WPA with an acceptable long-term impact on the environment even possible? With agricultural impact, will the quality of drinking water sources still be suitable in the long-term?

According to workshop participants, farming with acceptable long-term impact on the environment on a WPA is feasible, but under certain conditions, discussed in previous sections.

How do you envision farming on WPAs in 30 years?

Workshop participants believe that coexistence of farming and WPAs will also be possible over the decades, but with the proper organisation of conditions discussed in previous sections.

How do you assess the current relations: farmers-profession-water distribution system operators, local community-state, and what should be changed in their relation if we want a stable agriculture with acceptable impacts on the environment?

We need equal participation of all stakeholders (farmers, professionals, water distribution system operators, communities and countries) for a stable agriculture with acceptable impacts on the environment. Relations are not currently in place and conflicts arise as a result of unestablished relations.

Which institution should be the main driving force for balancing the interests of agriculture and the interests of using quality water resources?

The participants chose two operators as the driving force for balancing the interests of agriculture and the interests of using quality water resources: the local community and civil society acting apart from political interference. Some participants were of the opinion that civil society cannot replace the role and functions of local communities that must have the greatest interest in proper spatial management, in addition, municipalities are also responsible for providing safe drinking water.





Conclusion of the workshop

One of the key findings of the workshop was that the current law governing farming on WPAs is inappropriate, since the prohibitions and restrictions on WPA I and WPA IIA are too general and do not allow agricultural activities in the long-term. What is needed is a fundamental change of the legislation directing agricultural activities on WPAs in a way that, when determining prohibitions and restrictions, greater attention is given to the characteristics of individual WPAs, and that, examples of good practice are logically considered for individual areas. This field expects the important contribution of the agricultural profession, yet this will not be feasible without the intensive cooperation and coordination of interests and views of all stakeholders, farmers, professional institutions, water distribution system operators, local communities, and the state.

The workshop confirmed that constructive discussion of complex problems, such as the coordination of interests of land use, is possible and that such meetings are one of the ways that lead to sustainable solutions.

Note

Based on the discussion from the workshop, the INCOME project group will form a proposal of measures.

Dr. Brigita Jamnik
INCOME Project leader

