

WATERDRIVE case area in the catchment area of Gammelbacka stream / Storängsbäcken in Karjalaiskylä

Introduction to the case area

The Gammelbacka stream, also called Storängsbäcken, flows from the forests of Kuninkaanportti and Ernestas through Eestinmäki and Karjalaiskylä fields through the built-up urban area and park area of Gammelbacka to the issue of river Porvoonjoki. The length of the stream is about seven kilometers. Salmo trutta have been restocked in Gammelbacka stream in the urban area and park area. This part of the stream was restored in 2014.



1. Restored Gammelbacka stream nearby local school



Storängsbäcken has its own Drainage corporate body. Drainage corporate bodies are organizations that consist of those land owners that gets benefit or profit of the drainage. Drainage corporate bodies have been established in Finland since 1883 for maintaining the ditches. Storängsbäckens Drainage corporate body was established in 1932. First drainage plans have been made in 1916.

The most of drainage corporate bodies are not active and maintenance of the ditches has been delayed. Many cases drainage corporate body has not been active in 50 years. Farmers are trying to excavate small shots of the ditch in their own lands with locally-based contractors and the results are largely qualitatively weak.

The drainage main channel of Storängsbäcken is a typical case, not renovated during decades. The problems consist of small difference of field surfaces and channel water level. By drainage planning norms this difference should be at least 80 cm. This problem was caused by erosion which resulted silt and mud accumulation to the channel and also depression of the soil. Humidity and floods have during the years compressed and weakened soil structure and farming capacity, and also increased depression.



2. Problematic area in the upstream of Storängsbäcken



3. WATERDRIVE case area (Gammelbacka stream / Storängsbäcken)

Strategic tasks/goals in the catchment

Holistic drainage management pays attention to development potential of agricultural production and environmental protection as multidimensionally as possible. On agricultural fields the holistic drainage approach means functionality of basic and local drainage including also control of surface flows and taking into consideration biodiversity and fishery. On the fields a functional basic drainage enables functionality of local drainage and actions for soil structure improvement. When the soil structure and growing potential are in good condition, this ensures effective crop growing. At the same nutrient outflow and loading to natural water systems can be decreased.



Fishery restoration in the downstream has been made without drainage corporate bodies permission and those structures are raising the water level in the upstream on farming land. The strategy is to coordinate the drainage, fishery restorations and the urban runoff with the action plan that will be made in cooperation with all focus groups.

Focus Groups - local actions and implementation

The main focus groups are the farmers / land owners, Water protection association, Municipality of Porvoo and the local Centre for Economic Development and Transformation. The main focus will be implementation of actions of holistic water management.

Introduction of different holistic measures to the farmers is easy, when the problems can be addressed. Most of the farmers have a strong motivation to renovate their fields or local waterbodies. Quite often the farmers recognize the problems, but cannot spontaneously find their resolutions. Action plan will be consisting of possibilities for measures of basic and local drainage, soil structure management, two-stage ditches, controlling the urban runoff, saving the fisheries restorations / habitat restorations.



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Mainostoimisto Kuke. Menetelmiä ravinteiden ja vedenpidättämiseksi osana kokonaisvaltaista pellonkuivatusta. Granholm, K., E. Lundström, H. Äijö, M. Ortamala, S. Manninen-Johansen & S. Mäkelä (2018)

4. The illustration of the measures of holistic water management in agricultural areas



Challenges

The major challenges in the project are related to the activation of local actors. The main challenge is that all farmers maybe will be not interested in the project. Practical progress at the local level is often very slow and not in the rhythm of the project. However, these are also the reasons why local advisory projects are needed, because without targeted advice, it is difficult to have progress in holistic water management.

The project is prepared for the above mentioned risk by cooperation of different sector actors. Challenges are eliminated with personal contacts with different stakeholders and focus groups. On the other hand one challenge in the implementations in the case area is also related to combining the practices of different sector actors. Fishery restoration in the downstream has been made without drainage corporate bodies permission and those structures are raising the water level in the upstream on farming land. One of the most important challenge is try avoid the conflict between different actors and create win-win solutions.



5. The current institutional structure



Conclusions

The aim is to increase awareness of holistic catchment area restorations. Holistic agri-environmental water management consist of the combination of measures of basic and local drainage and environmental water management and water protection, taking into account soil structure, biodiversity and fisheries needs. The objective is cross-sectoral stakeholder work.

The aim is to get examples of how to combine production management and water management from the agricultural point of view, taking into account fisheries and aquatic ecology, as well as biodiversity through case area. Attention should also be given for increasing land value in the case area. The aim is to provide examples of good practices to coordinate the drainage, fishery restorations and the urban runoff in the agricultural areas.

The goal is cooperation with all focus groups. The aim is to develop regional co-operation, which provides the basis for a systematic operational chain of activities between the different actors from the catchment area to the water body. Cross-sectoral understanding of the objectives of each actor supports the achievement of good ecological status of waters and the simultaneous improvement of the production economy.



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6. Restored Gammelbacka stream in the park



Kuvat 24-26. Purokunnostus oli hyvin esillä paikallisissa sanomalehdissä, mikä auttoi tuomaan runsaasti väkeä talkoisiin ja herättämään yhteishengen puron ja asuinympäristön puolesta.

7. Restored Gammelbacka stream in the local newspaper



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8. Problematic area in the upstream of Storängsbäcken. Farmers are trying to excavate small shots of the ditch in their own lands.