

Holistic Catchment Area Renovation, Success story of Hardombäcken in Loviisa, Finland



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NUTRINFLOW River Loviisa - Project



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Mikko Ortamala, 11.06.2019
Drainage Center of Southern Finland
ProAgria Southern Finland



Background for NUTRINFLOW- project in Hardombäcken ditches catchment area

Hardombäckens water capacity was not enough for the waters from the catchment area. The floods existed on area of 60 - 80 hectares round the year.

Problems consisted of:

- Erosion
- Outflow of nutrients and sedimentation of solid matter
- Water capacity of Hardombäcken ditch
- Subsidence of soil
- Not renovated during decades

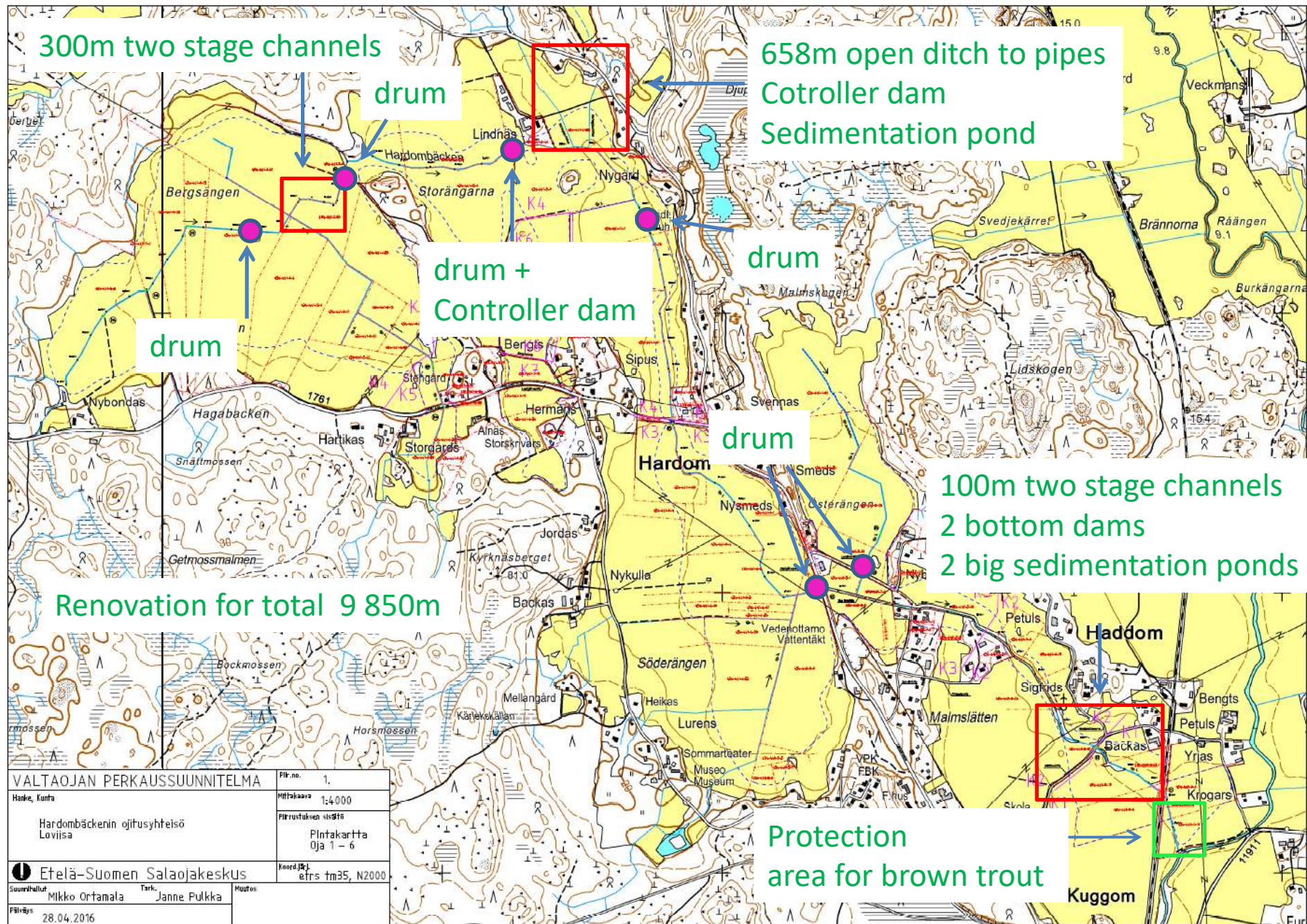


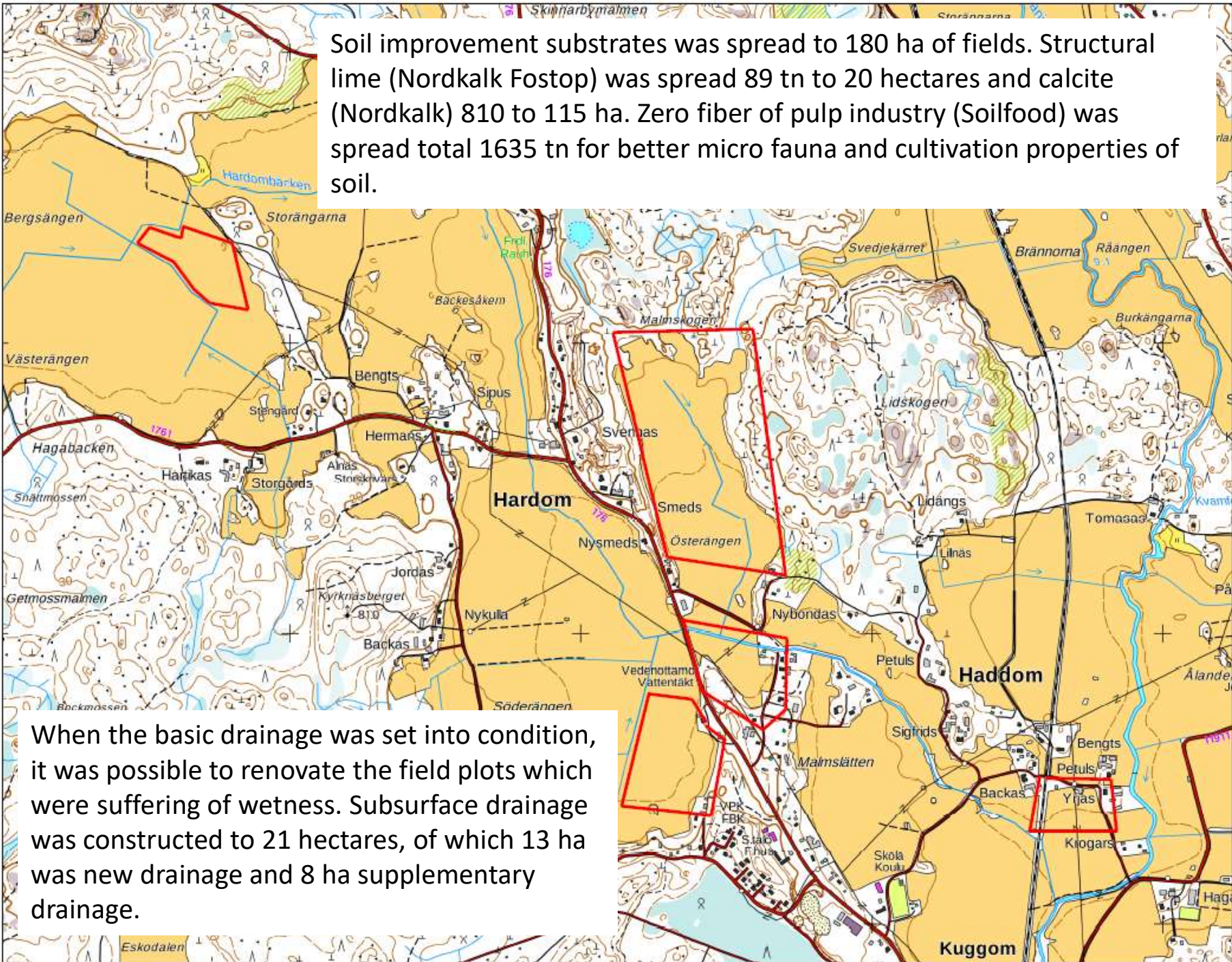
Holistic water management

- Holistic water management consist of the measures on the fields, ditches and the rivers, lakes and sea.
- Basic drainage, local drainage and environmental water management
- Our priority is to prevent flooding and surface flow and outflow of solid matter and nutrients and taking into consideration biodiversity and fishery.
- Good soil structure and workable water management are basic requirements for productive agriculture and on the other hand to reduce the outflow.



Holistic renovation measures for Hardombäckens catchment area (Loviisa Finland)





Soil improvement substrates was spread to 180 ha of fields. Structural lime (Nordkalk Fostop) was spread 89 tn to 20 hectares and calcite (Nordkalk) 810 to 115 ha. Zero fiber of pulp industry (Soilfood) was spread total 1635 tn for better micro fauna and cultivation properties of soil.

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Results of NUTRINFLOW-project in Hardombäcken ditch, international exemplary pilot area of holistic water management and catchment area renovation in Finland:

- According to the landowners opinion sprouting and vegetation was more uniform in many fields. Year 2017 was not representative for comparison due to heavy rains and year 2018 due to exceptional drought. **Autumn flood 2017 were caught to control and water did not enter to the fields on the entire renovation area!**
- Operational basic drainage enabled measures for local drainage improvement and further soil structure improvements.
- Turbidity of Hardombäcken waters has decreased, because the sediment on ditch bottom does not flush out. This decreases the solid matter and nutrient loading of the river Loviisanjoki and Baltic Sea.
- Ensured the secure traffic on the road from Loviisa to Lapinjärvi (prevented the road flooding).
- The water protection structures built have improved landscape values and solid matter retention. Along the channel has been several wild duck litters, thanks to the larger open water parts.
- Positive feedback from the landowners. Information has been disseminated both nationally and internationally. Hardombäcken is a reference object for holistic drainage management.



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Thank you!

