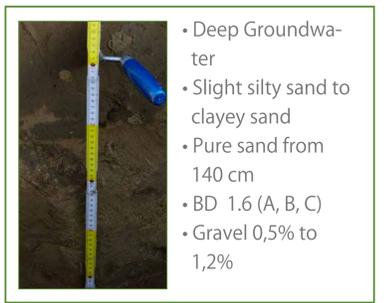
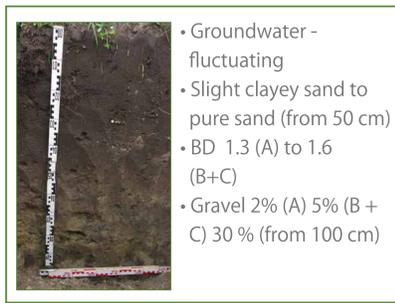
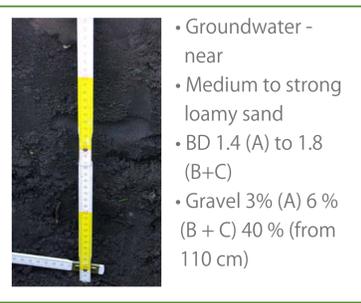
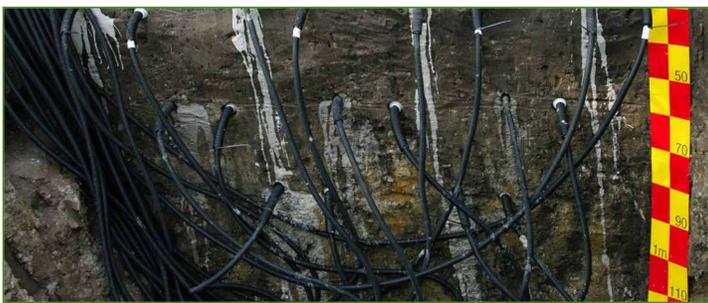


Monitoring and Modelling Set-up to Assess Water Availability and the Impact of Short Rotation Coppices on the Site Water Balance

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About the project

Dendromass4Europe (2017 – 2022) aims at establishing sustainable, Short Rotation Coppice (SRC)-based, regional cropping systems for woody biomass (dendromass) production on marginal agricultural land. The dendromass produced in SRC (ligneous biomass, bark and wood) are supplied to dedicated bio-based value chains that create additional income and job opportunities in rural areas. The supply chains will be tailored for optimum efficiency of supply logistics and for reducing CO₂ emissions. Innovative bio-based materials will help to replace fossil-based materials.

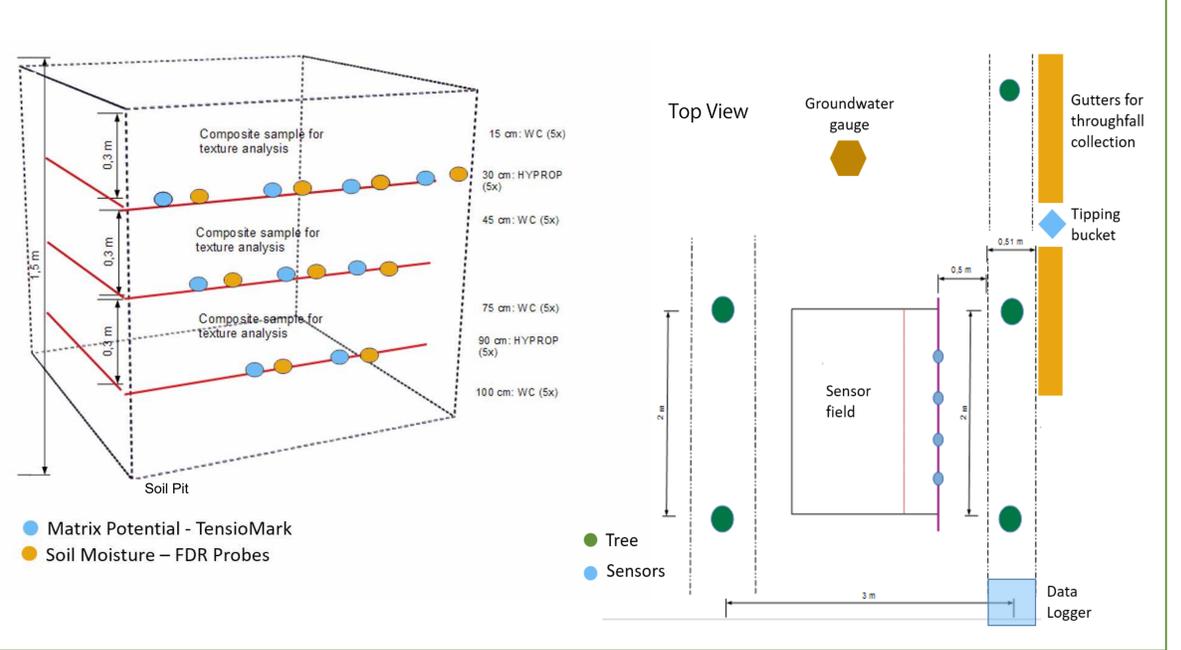


Our task

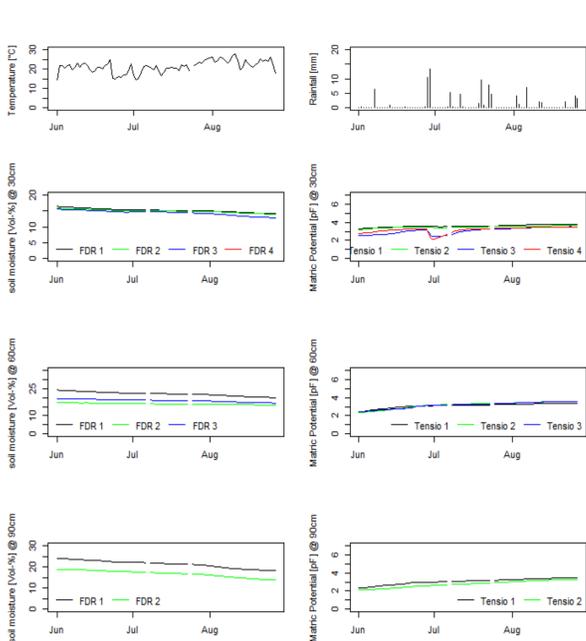
In our task we evaluate the site water balance of the SRC. Aim is to quantify the water use efficiency of the poplar plantations as well as the impact on groundwater level. In order to evaluate water supply and fluxes of the plantations, three continuous monitoring sites have been established representing a gradient of close, medium/fluctuating and far connection to the groundwater level. At all sites soil moisture, matrix potential, groundwater table, transpiration (sap flow via thermal diffusion/HRM) and throughfall are measured.



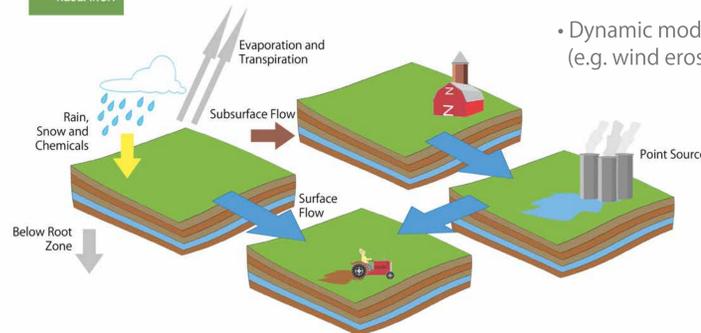
Monitoring Design



First Results and Outlook



- Installation of sap flow sensors Heat Ratio Method (HRM) to estimate stand transpiration
- Monitoring data for model parameterization and validation
- Site water balance modelling and scenario based **assessment of weather extremes and management practices** on the site water availability and biomass yield.



- Cropping systems model
- From field to watershed scale
- Models wide range of crop operations: tillage, fertilization
- Dynamic modelling of soil layers related to weather (e.g. wind erosion) and management



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