

Climate adaption due to flooding in Flen municipality

Suggestions on degree project within Future Energy Center

Background

The world is already facing climate changes in the form of increased temperatures, droughts, rise of the sea levels and extreme rainfall events. Severe rainfalls have recently occurred in Valencia, Spain for instance but these kinds of events have also occurred in the Nordic countries, in Copenhagen, Denmark in 2012 and 2014 and in Gävle, Sweden in 2020. To avoid the severe consequences of flooding caused by heavy rains falling in short periods of time, or flooding caused by prolonged precipitation, Swedish municipalities have started to adapt their municipalities to mitigate the potential consequences.

Some municipalities have created so called cloudburst maps in which areas where flooding is likely to occur are identified. Flen municipality in the middle part of Sweden, is one municipality where a cloudburst map has been created and some areas identified as areas where severe consequences will arise when a heavy rain occurs. The areas in Flen municipality are all situated in the central part of Flen municipality and therefore, many people will be affected in case of flooding since roads and a passage under the railway will be flooded.

Task

Flen municipality, along with the municipal company Sörmland Vatten och Avfall AB responsible for water and wastewater treatment in the municipality, are now searching for methods to mitigate the consequences of problems caused by flooding.

The task for the MSc student is flexible and can be discussed. The student could conduct the project in Flen to further investigate the central parts of the municipality and the conditions at the identified sites where severe consequences might arise. One, or several, of these spots could be selected for further investigation regarding possible methods to adapt the sites and the water sheds to flooding. The study could also be based on a literature survey suggesting methods that could be used in Flen to manage large water volumes in the identified sites. Sörmland Avfall och Vatten AB (the municipal waste and wastewater company) might host a student.

Further information

The project is suitable for environmental students in the first place. The project could be conducted on an individual basis but two students might as well work together. The project could be conducted as a MSc degree project or as a BSc project. The project can be completed online or at campus (Flen).

Contact

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