

Sand/gravel deposit as host resource for re-establishing cultivated soil

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In urban areas there is often a conflict between agriculture – the need for preservation of cultivated soil – and the need for society to use the same areas for building and infrastructure purposes. For Norway, the total amount of cultivated soil is only 3 % of the available land area. This makes the soil a non-renewable resource, and accentuates the conflict when other use of the area is imminent.

The present project was initiated when a developer would establish a commercial space of 130 acres on cultivated soil in Orkdal municipality about 50 km south of Trondheim. In this case the authorities required the soil to be taken care of for cultivation at a new location.

A major challenge for such a project will be to find areas within reasonable transport distance, which have suitable climatic, geological and soil-physical properties. The chosen area was a barren glaciofluvial deposit of sand/gravel, quite flat, and with limited vegetation.

Removing and moving of the cultivated soil was done in winter, when the ground was frozen. This made it possible to perform a very careful excavation, and to move and re-establish the soil without damaging package. Thus, an un-disturbed season of growth was obtained, and the re-established farmland could reveal a good growth of green grass already in the first spring.

Further research on this and related topics will be done, to establish a sustainable technology with criteria for soil parameters, methodologies and understanding of the influence of different kinds of soil. One next step will be to utilise quarry fines and to characterise the suitability of different rock types for building up the different layers of soil and sub-soil. The overall objective: Increase our poor 3 % cultivated soil area.