



Improving sand and gravel utilization and land-use planning. - 3D-modelling gravel resources with geospatial data.

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The Norwegian aggregate industry produces approximately 14 million tons of sand and gravel aggregates annually to a value of approximately 100 million Euros. Utilization of aggregates are often linked to land-use conflicts and complex environmental impacts at the extraction site. These topics are managed on a local municipal level in Norway.

The Geological Survey of Norway has a database and a web map service with information about sand and gravel deposits with considerable volumes and an importance evaluation. Some of the deposits covers large areas where the land-use conflicts are high. To ease and improve land-use planning, safeguard other important resources like groundwater and sustainable utilization of sand and gravel resources - there is a need for more detailed information of already mapped important resources.

Detailed 3D-models of gravel deposits is a tool for a better land-use- and resource management. By combining seismic, GPR and resistivity geophysical profile data, borehole data, quaternary maps and lidar surface data, it has been possible to make 3D-models of deposits and to further research the possibilities for distinguishing different qualities and volumes. Good datasets and a detailed resource map is a prerequisite to assess geological resources for planners, extractors and neighbours. Future challenges lies in use of, often old, geophysical data, and combining these. What kind of information is it possible to grasp from depth-data that actually argues for a more detailed delineation of resources?