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The Austrian mineral resources plan - evaluation of aggregates

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The Austrian mineral resources plan provides the framework for supplying the domestic industry with mineral resources. This includes political measures to secure prospective areas and to increase economic competitiveness, legal measures to protect mineral occurrences, and land use planning to harmonize conflicts of interest. The goal is to preserve sustainable access to valuable mineral resources for future generations.

Mineral resource data on occurrence, nature and quality of the material, are of vital importance for the preparation of future mining projects. Economic planning, optimal usage of the resource, ecologically sound methods of extraction and processing, as well as proper site recultivation all require detailed maps documenting the geological setting and lithological properties of the deposits.

The Geological Survey of Austria has the task of describing the regional distribution, extent, age, origin, usage and reserves of mineral resources as far as building material is concerned. This includes aggregates and clay as well as dimension or ornamental stones. The poster focuses on aggregates, i.e. sand and gravel, presenting the evaluation process as well as giving some practical examples from different regions in Austria.

The lithological classification of Paleogene, Neogene and Quaternary unconsolidated sediments serves as the basis for assessing quality, quantity and resource potential of the material. Data on abundance and size of quarries are then used to estimate the importance of the resource for local or regional supply. These data are collected in archives and data bases at the Geological Survey of Austria. Resource potential and

importance are combined in a matrix to derive the suitability of a resource for future exploitation. Additional information affecting future mining operations - groundwater aspects, sediments covering the resource, or remoteness and accessibility of the area of occurrence - is gathered to further characterize the deposit and facilitate the planning of extraction operations.

The evaluation procedure is implemented in a GIS to carry out matrix calculations, adjustments and calibration in a semi-automatic way and to present results directly as maps of resource suitability. This is a direct and useful measure for federal and provincial land use planners deciding whether a given resource is worth protecting. The work represents an important step towards the sustainable use of aggregates as building material.