

Switzerland

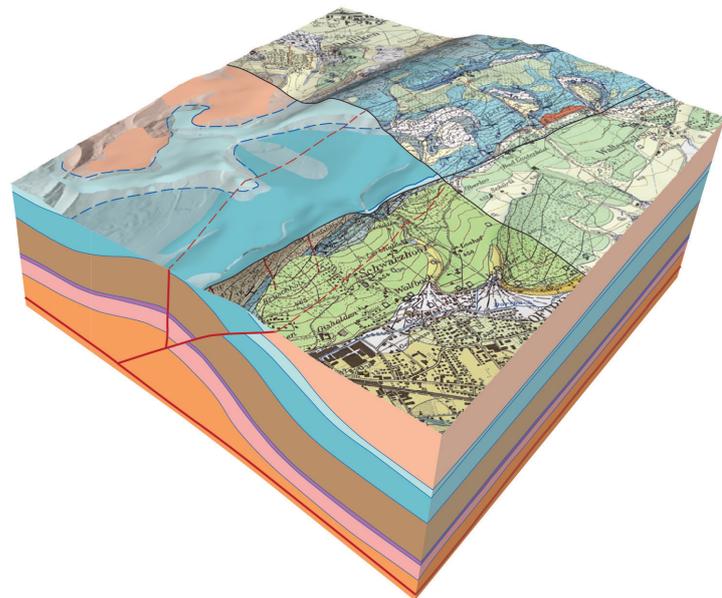
From geological maps to underground models in Switzerland

The Swiss Geological Survey is restructuring its core activities to follow the vision of “integrated geological surveying”.

This move reflects the changing role of the geological map as one piece of a wider suite of co-existing datasets, methods and technologies, which necessarily complement each other and interact according to common data models.

By changing its focus from initially discussing formats (analogue, digital) and products (maps, models) to primarily satisfying the client’s requirements, the Swiss Geological Survey can prioritise topics relevant to society, politics and research, as well as the development of new products to meet customer demands.

In contrast to other countries, the geological mapping program in Switzerland, which started in the 1930s, is still ongoing and will be finished within the next 10 years. In parallel, enormous efforts have been undertaken to validate the information stored in the existing geological maps, such as the vectorisation of analogue maps, semantic and geometric harmonisation of data sets, and the development of a new, nationwide vector dataset under the name GeoCover. Additionally,



Geological block model based on sub-surface information such as boreholes and geophysical data in combination with a geological map (upper right) and a geological vector data set (lower left).

geological 3D models of the shallow and deep subsurface have become another important component of the Swiss Geological Survey’s product suite, aiming to integrate existing data from the survey as well as from third parties, such as universities, cantons and private companies.

To facilitate the transition of geological data from a professional product for experts to a well-known tool for the non-geologist, all available geological data (complete, harmonised and nationwide) are being visualised and made accessible and downloadable from one single location. The Swiss National Geological Model integrates the geological surveying, the centralised

access and the 3D visualization. Although it will raise access, inquiries, analysis and supply of geological data to a new level, the geological map (and its 2D-derivatives), in combination with boreholes and geophysical data, will remain as the fundamental base data.

Other products, such as 3D geological models, overcome the limits of geological maps. Their production is perhaps more time consuming, but the result will save time in the long term. They not only simplify the derivation of new products or updated maps, but also facilitate the understanding, acceptance and communication of geological complexity to the broad public.