

Terrain deformation in Poland based on Copernicus European Ground Motion Service (EGMS) data

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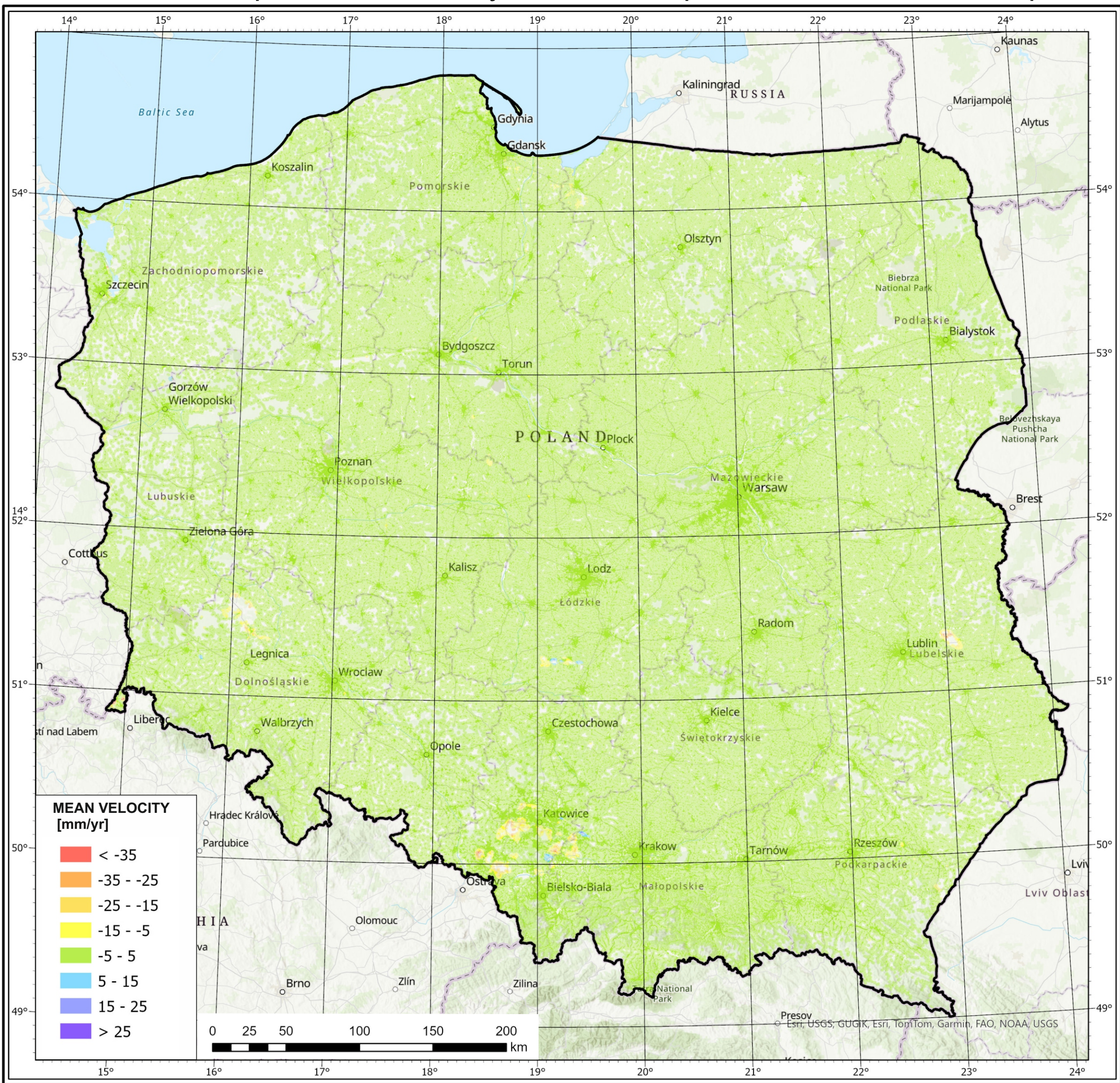
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The Polish Geological Survey (PGI) monitors geohazards like landslides, seismic shocks, deformations, and sinkholes. Commissioned by the Ministry of Climate and Environment, PGI runs the "Interferometric Monitoring of the Polish Terrain Surface" project. It tracks terrain deformations using satellite data and shares the results via geoportal to support public administration in managing geological risks.

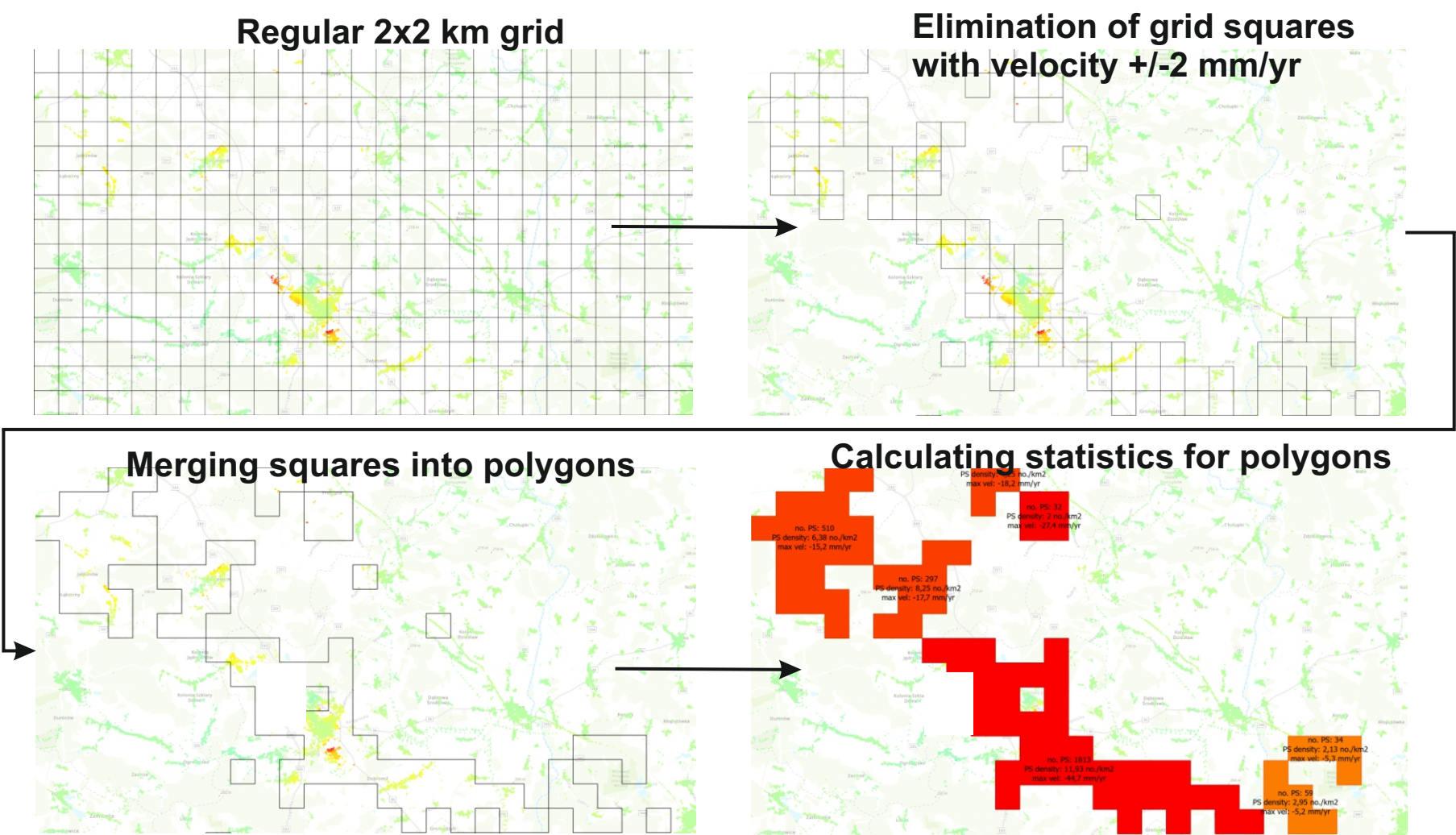
The project covers the entire country, focusing on key areas using advanced remote sensing techniques, mainly interferometric SAR analysis. This helps assess threats to infrastructure, especially in former mining areas where deformations continue. Nationwide subsidence and uplift data are available on PGI geoportal since 2024.

Natural and mining processes deformations were mapped as raster data and WMS services. The project uses Copernicus EGMS data for a national overview and detailed analyses on artificial radar reflector networks in areas of economic importance.

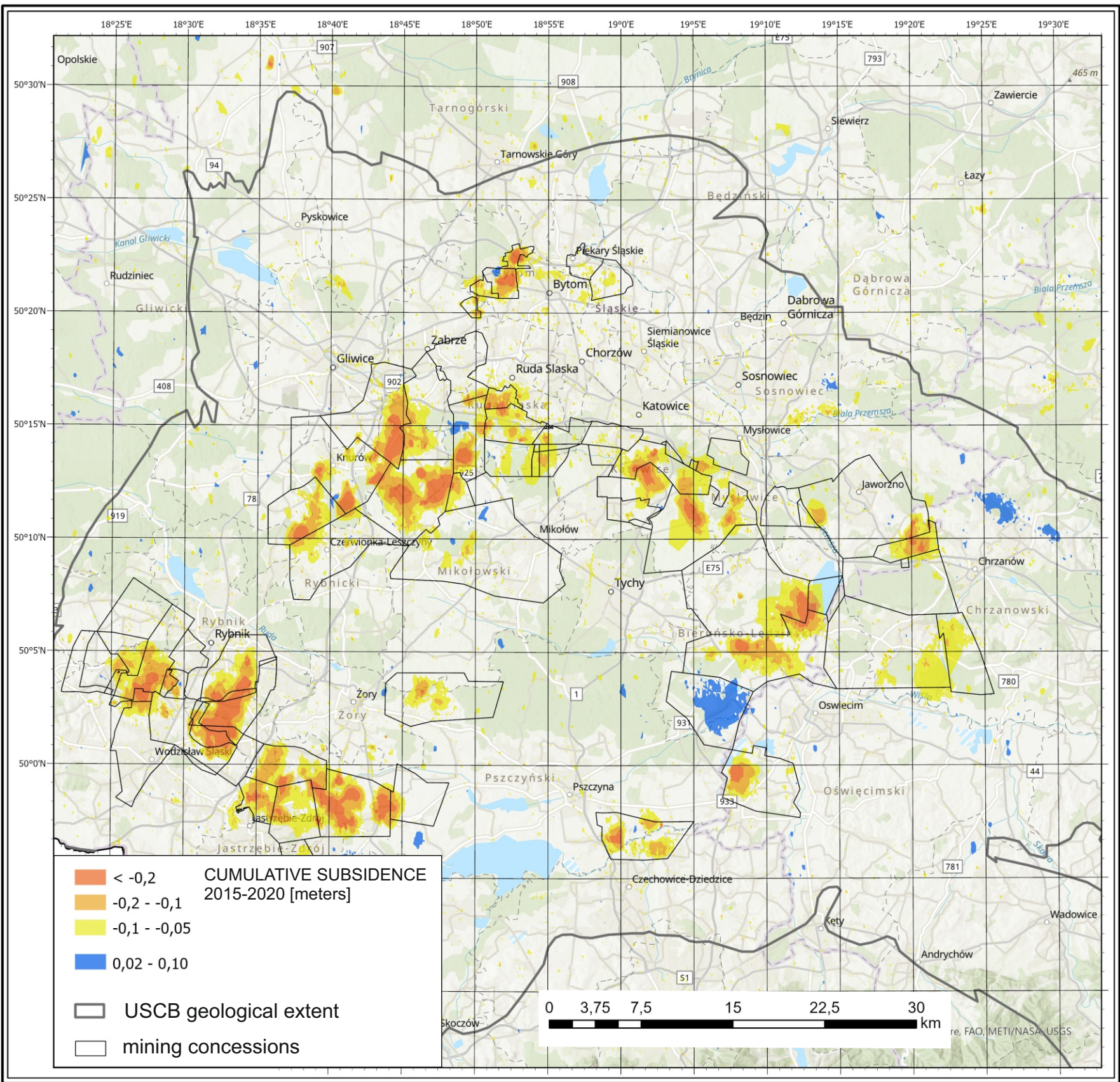
RESULT: Map of mean velocity of terrain displacements. Vertical component



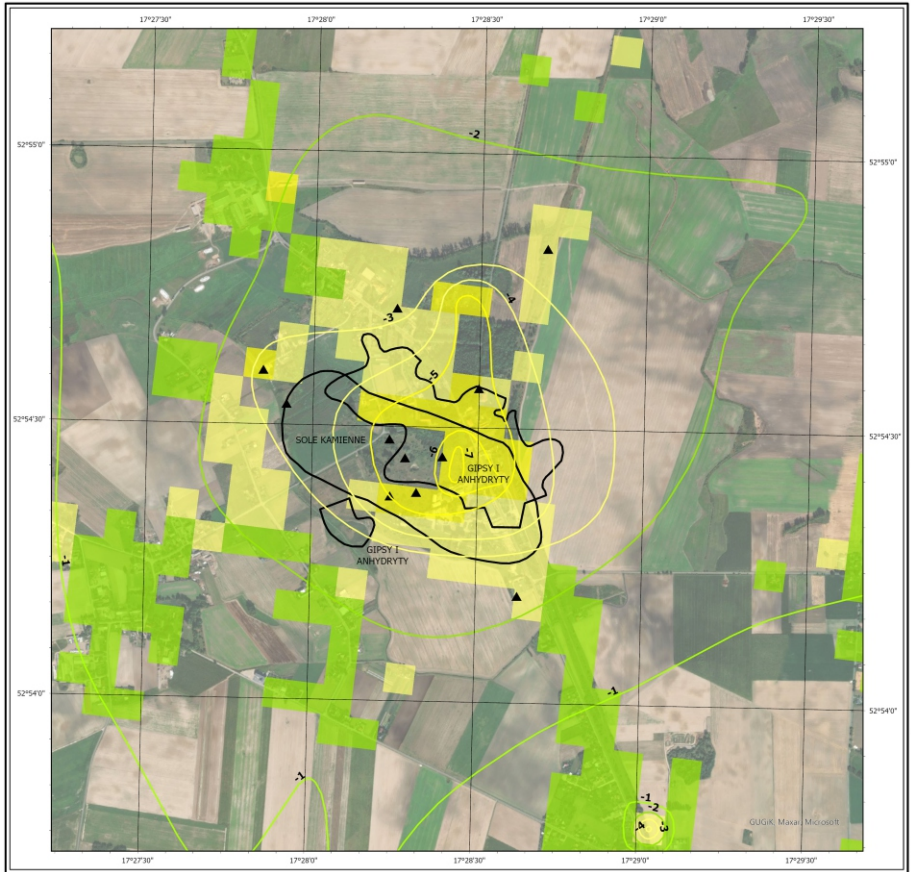
METHOD: Basic steps of the adopted geostatistical analysis methodology to identify locations of significant deformations on a national scale



EXAMPLES: Upper Sielasian Coal Basin (USCB)



EXAMPLES: Wapno, post-mining defromations



RESULT: website with the data browser

