

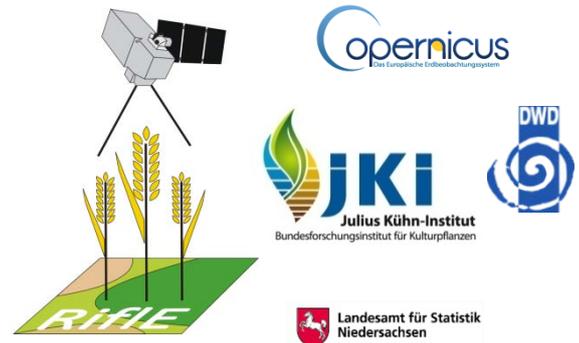
Regional detection of the current agricultural yield potential by remote sensing – RifLE

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Abstract:

Yield estimations are an important source of information for food security and the assessment of the agricultural market situation. They are further an essential component in precision farming. At present, information on agricultural yield is provided by official German agricultural statistics only on district and state level, and with a considerable time delay. Because remote sensing offers spatially and spectrally differentiated information over large areas it may contribute essential supplementary information to conventional agricultural statistics.

With the framework of the European Copernicus Initiative, the Sentinel-2 mission is expected to deliver high-resolution optical images with 13 spectral bands and a swath width of 290km. Its revisit time of 2–3 days at mid-latitudes provides a vital prerequisite for vegetation monitoring during the growing season. In preparation for this mission the pilot study “RifLE – Regional detection of the current agricultural yield potential by remote sensing” was initiated. The objective of the RifLE project is to provide yield estimates on a regional scale by linking remote sensing with a growth modeling approach. Within RifLE image data from existing earth observation missions such as Landsat 8 or RapidEye is tested to explore the potential of the Sentinel-2 mission for yield estimates from space. The project is conducted in close cooperation with farmers and consulting agencies for plant cultivation. Methods and results are validated and assessed together with these partners and the regional authority for statistics (Landesamt für Statistik, LSN).



RifLE

Duration: 01.10.2013 – 31.03.2016

Data source: Landsat, RapidEye, EnMAP_{sim}, PentaSpek, Hyperion

Support program: Copernicus services for public authorities in Germany

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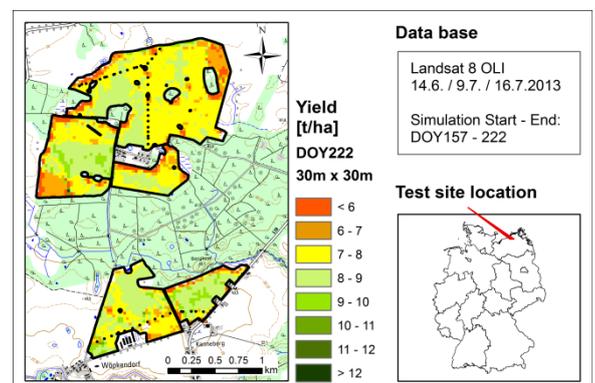


Fig. 1: Example of yield estimations based on Landsat 8 OLI data for a test site in the German federal state Mecklenburg-Vorpommern (© JKI).