BonaRes is short for “Soil as a sustainable resource for the bioeconomy”. It is a funding programme of Germany’s Federal Ministry of Education and Research (BMBF) contributing to the German National Research Strategy BioEconomy 2030. BonaRes consists of ten interdisciplinary research project consortia and the BonaRes – Centre for Soil Research.

**BonaRes Data Portal**

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<th>Aims</th>
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<td>Researchers retain their right of first use of data</td>
<td>Development of a common data policy</td>
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<td>Support availability and reusability of research data</td>
<td>Use of standards for metadata, network services and data specifications</td>
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<td>Increase visibility of research data</td>
<td>Integration into national and international data infrastructures like INSPIRE and DataCite</td>
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**Use of distributed data with standardized services**

- **Aerial View**
  - BKG
- **Long-term field experiment**
  - BonaRes
- **Soil**
  - BGR
- **Biodiversity**
  - SGN

In this example, data of the same spatial reference are combined from multiple sources via a WMS service. WMS (WebMapService) is a standardized service for visualization of geodata from the Open Geospatial Consortium (OGC). In the middle of the figure (User), the joint visualization of BonaRes research data is illustrated with a current aerial photograph. The aerial view is from the Bundesamt für Kartographie und Geodäsie (BKG) as part of the geodata infrastructure Germany (GDI-DE).

**Data from long-term field experiments (> 20 years):**
- Monitoring: soil changes (e.g. fertility, humus content, erodibility, pollutants)
- Understanding: processes by land-use strategies (e.g. fertilization) or climate change
- Development: of new land-use strategies (e.g. crop rotation)

**Research data from BonaRes projects:**
- Soil profile information
- Time series: soil sample, data logger, model data
- Detailed soil maps
- Soil fertility
- Farming Strategies
- Nutrient use efficiency
- Plant-soil-microorganism interactions
- Soil decline
- Soil structure and functionality
- C and N storage
- Biodiversity

**Data from soil inventories and administration:**
- Spatial datasets (general soil maps, soil properties) at different scales 1 : 5,000 to 1 : 3 Mio from federal and federal state agencies
- Soil profile and analytical databases
- Soil information derived from soil monitoring programmes

**Soil biodiversity - Edaphobase, SGN**
- Species’ distributions
- Species’ quantitative occurrences
- Complex relationships of species to habitats & soils
- Species’ ecological preferences
- Regional community composition

**Partner institutions in the BonaRes-Centre:**
- BGR Centre for Geoscientific Research and Rock Studies (Senckenberg)
- ZALF Zentrum für Agrarlandschaftsforschung (ZALF) e.V., Müncheberg
- Leibniz Centre for Environmental Research (UFEU
- SENckenberg world of biodiversity
- Technical University of Munich

www.bonares.de