

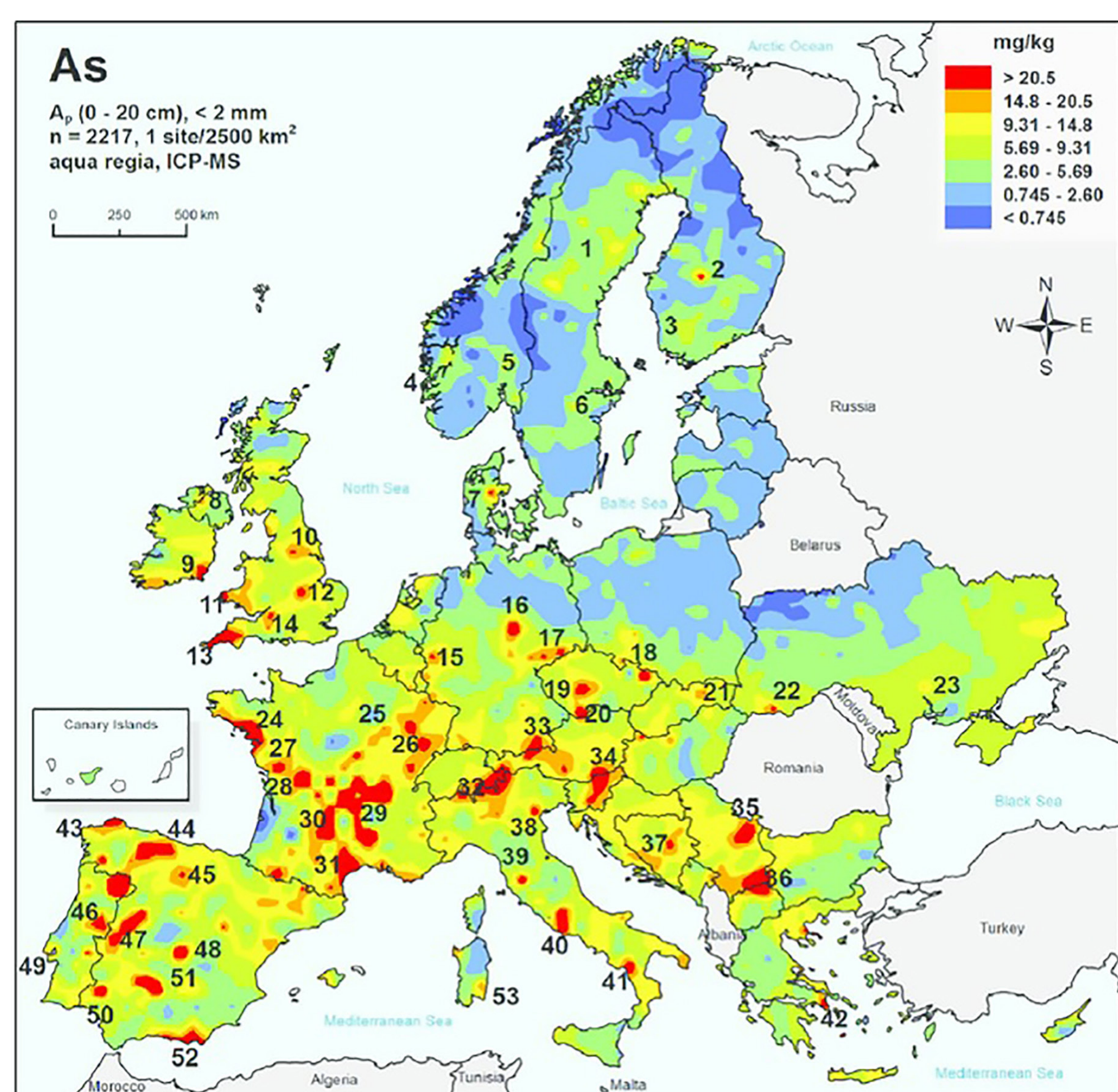
# AgriAs - Evaluation and management of Arsenic contamination in agricultural soil and water

AgriAs Team. 2017.

## Introduction

The overall goal of AgriAs is to provide the European Union with reliable data on the existing risks of As exposure through agriculture, a complete summary of existing tools available for As remediation as well as an array of tools for ecotoxicity and bioavailability assessment.

AgriAs will build on existing knowledge by using comprehensive national and European databases, developing and testing new technologies aiming to solve problems and carry out efficient risk monitoring. A particular attention will be paid to the demonstration and dissemination phase in close cooperation with stakeholders.

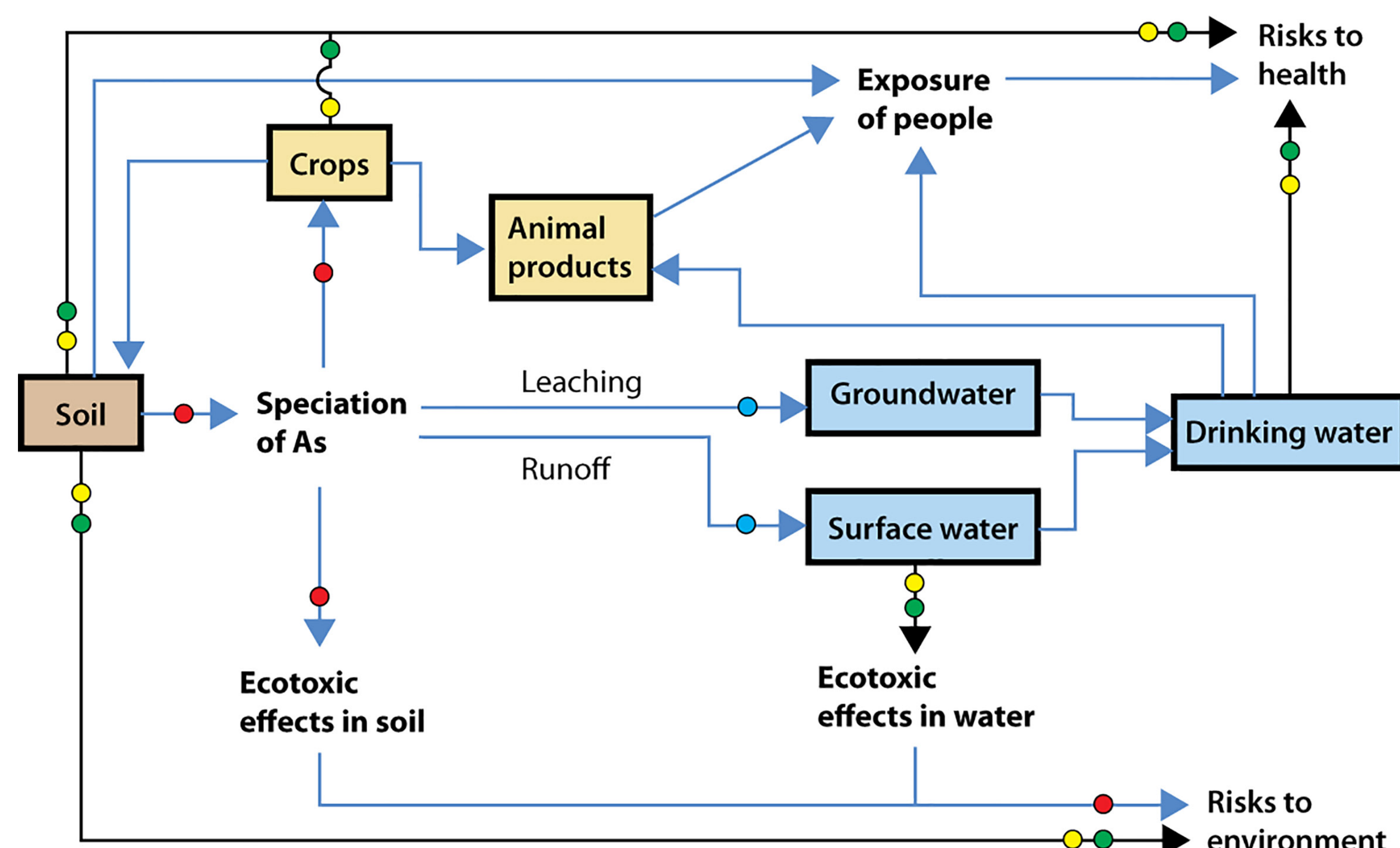


Tarvainen, T. & GEMAS project team. 2013. Arsenic in agricultural and grazing land soils of Europe. *Applied Geochemistry* 28.

## Main objectives of the project

- To address water and soil pollution by As highlighting the needs for sustainable development and healthy food chain,
- To summarize national and European databases to assess the scale of As contamination in European agricultural soils and water,
- To develop recommendations/guidelines for sustainable management of As risk together with stakeholders,
- To demonstrate As removal technology at target sites and to assess its technological and economic feasibility,
- To apply biological tools in different contexts to assess environmental quality and to manage ecological, environmental and human risks,
- To disseminate the results of the project to stakeholders.

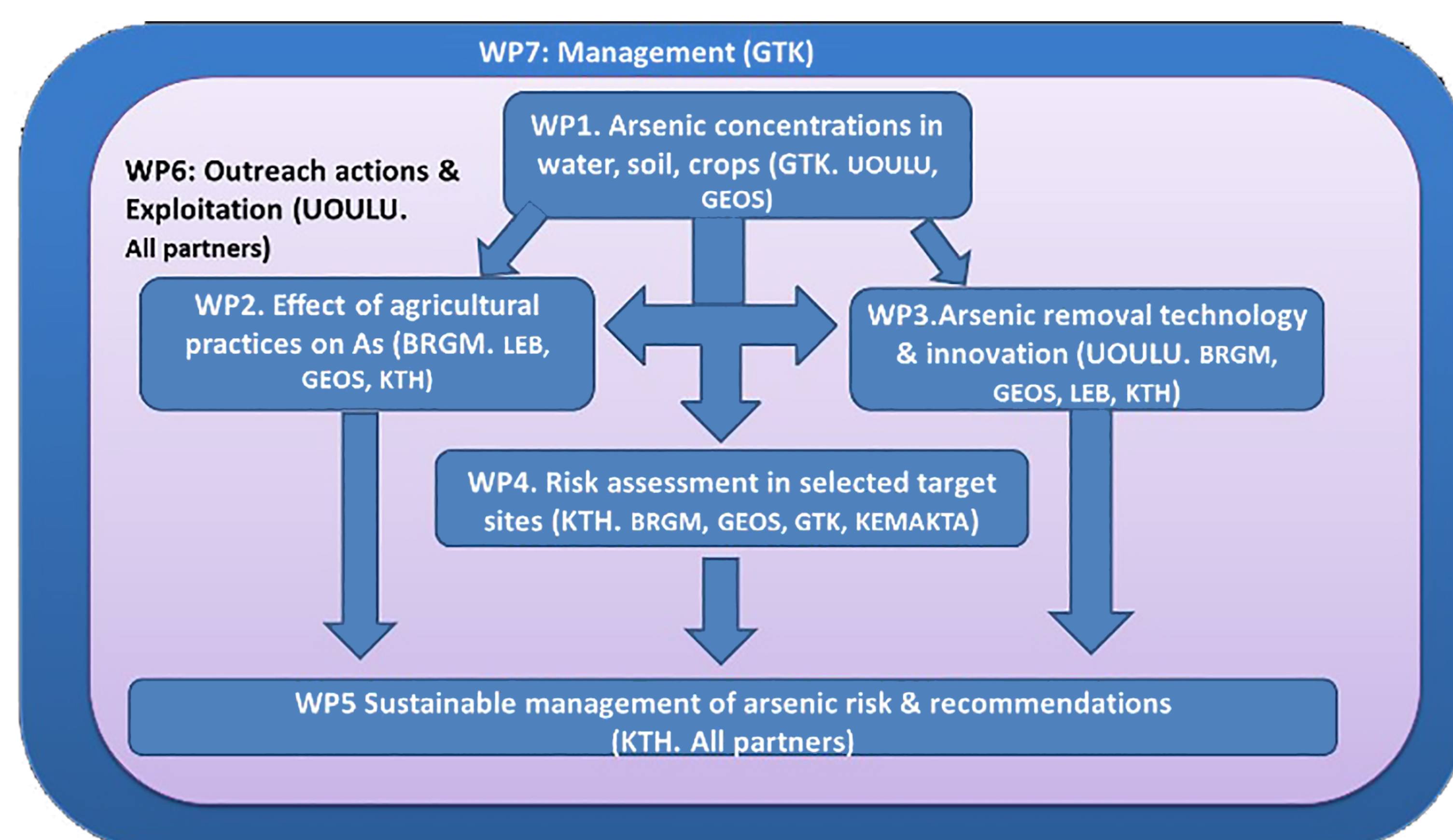
- Concentrations from site data compilation
- Limit guideline values from WP 4:1
- Bioavailability and mobility (WP 2:1 - 2:3)
- Geochemical modelling (WP 2:4)
- WP 4:2 (1) and 4:2 (2) Comparison of concentrations with guideline/limit values
- WP 4:2 (4) Risk Assessment Model\*



\* Calculation of exposure and comparison with toxicological reference values.

Risk assessment methods and sources of information for AgriAs risk assessment.

## AgriAs Work packages



## AgriAs consortium

- Geological Survey of Finland – GTK, Finland
- University of Oulu, Finland
- G.E.O.S. Ingenieurgesellschaft mbH, Germany
- Bureau de Recherches Géologiques et Minières – BRGM, France
- LEB Aquitaine Transfert, France
- Kungliga Tekniska Högskolan, Sweden

## AgriAs test sites

**A former chemical ammunition treatment facility of the interwar period converted into agricultural land near Verdun, France**

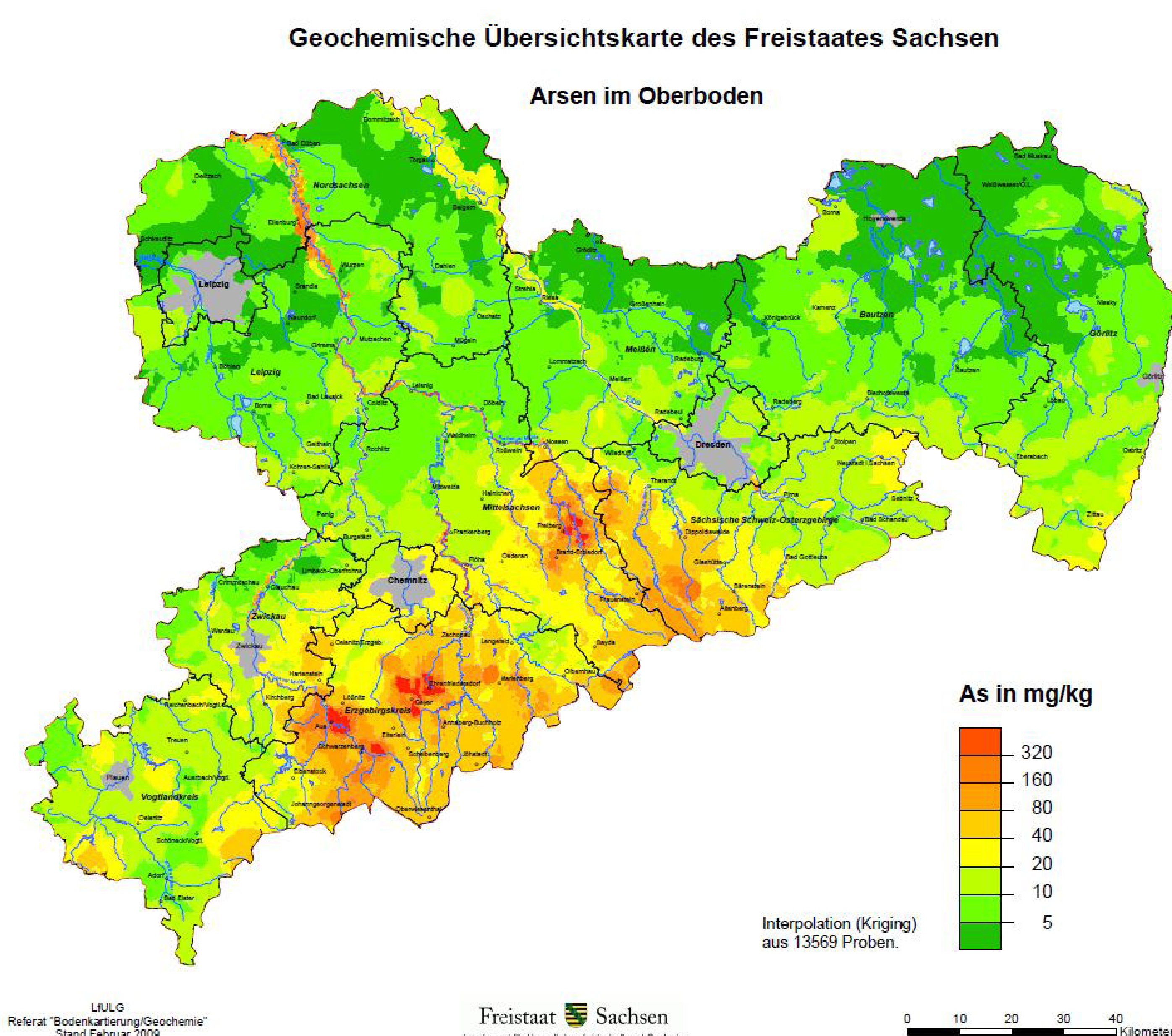
One of the most important historical area of chemical ammunition destruction of WW I, containing arsenical chemical warfare agents, located in a sensitive zone for agriculture and groundwater. The site will be used to assess the impacts of agricultural practices on As speciation, bioavailability and mobility through groundwater.



A historical view of the ammunition destruction facility near Verdun, 1921. Preparation of an open-burning operation of shells (source Private archives, D. Hube, BRGM).

## Centre of mining industry, Saxony, Germany

Characterized by 800 years of ore mining; with focus on silver, lead and zinc. According to the Saxon State Office for Environment, Agriculture & Geology (LfULG), arsenic contents are high in agricultural land, up to several hundred mg/kg in soil.



Arsenic concentration in topsoil in Saxony, Germany (Saxon State Office for Environment, Geology and Agriculture, Geochemical Survey, Dresden 2010).

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