

## The idea of Green cadastre for sustainable development of agricultural land - case study of Poland

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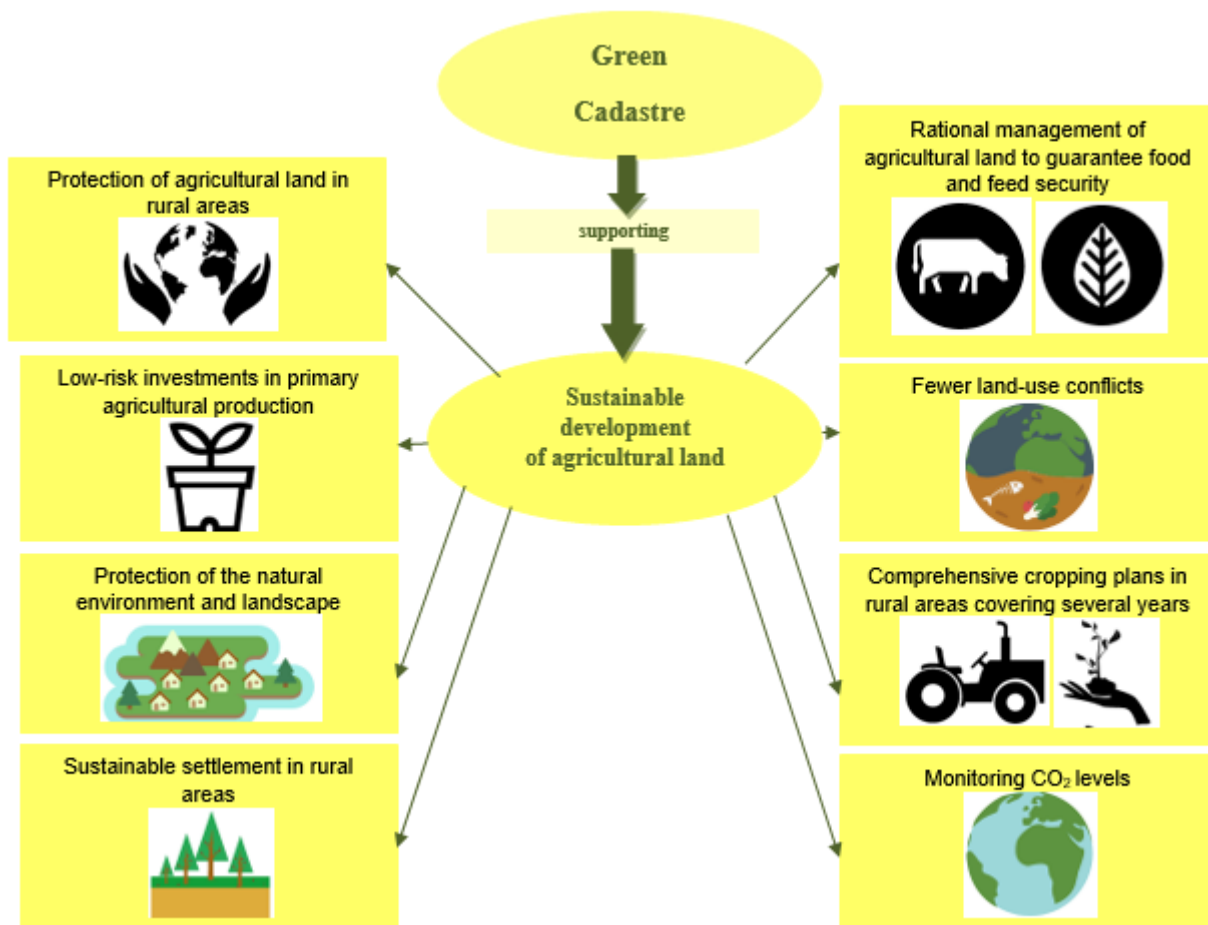
The decrease in the area of agricultural land resulting from global population growth requires active monitoring and protective measures to prevent the loss of this valuable resource. The relevant measures involve the collection of detailed data on global food production which are indirectly required to maintain adequate levels of farmland. In Poland, there is currently no single geographical information system comprehensively supporting agricultural policy. However, there are many dispersed systems containing various data on agricultural production. The aim of this study was to propose a concept for the development of a uniform Green Cadastre for Poland based on international guidelines and standards.

Rural areas play important economic, social and environmental roles. The scope and quality of information about agricultural land available to the responsible entities influence agricultural performance. They are important in the sustainable development of land agriculture.

Land administration systems integrated with databases on agricultural production contribute to the achievement of the above goals. Extensive spatial data infrastructures should constitute the reference resource for agricultural production sites. This task will be facilitated by the latest GIS technology.

The proposal for the sustainable development of agricultural land is based on the combination of spatial data infrastructure with GIS technology and the creation of the Green Cadastre.

Proposed Green Cadastre with specific functionalities would considerably contribute to the sustainable development of agricultural land (Figure 1).



**Figure 1.** The aim of the Green Cadastre. Source: own elaboration.

The aim of this study was to propose a concept for the development of a uniform Green Cadastre (GC) for Poland based on the reference data from the Polish Land Administration System, referred to as the Integrated Real Estate Information System (IREIS), and national Spatial Data Infrastructure (SDI) (Figure 2).

Methods - Legal analysis (Existing procedures and limitations); Drivers analysis (Identification of competencies); Trend analysis (Identification of projects and needs); System analysis (Identification of technical solutions).

Tools- GIS;

Place- Poland,

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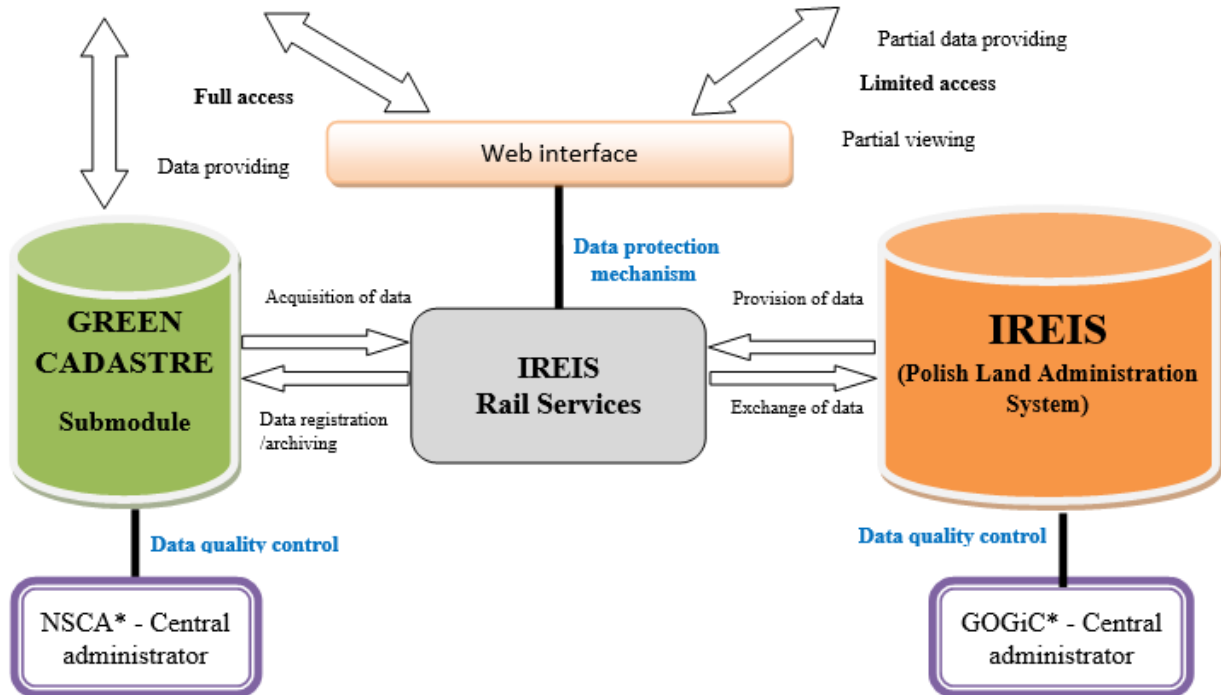


### INTERNAL USERS

Public administration and institutions collecting data on agricultural land

### EXTERNAL USERS

Farmers, other individuals, research institutes, other public institutions



\*IREIS – Integrated Real Estate Information System  
 \*NSCA - National Support Center for Agriculture  
 \*GOGiC – General Office of Geodesy and Cartography

**Figure 2.** Data flow in the GC. Source: own elaboration.

The proposed GC will be a part of the European Union's green infrastructure, and it will be fully consistent with European standards (for example from the ISO 19100 series), especially INSPIRE in the context of Agricultural and aquaculture facilities. The Green Cadastre can have a contribution to the power supply the CGIAR (Consultative Group for International Agricultural Research) Platform for Big Data in Agriculture.

The discussed concept is fully consistent with Sustainable Development Goals and develops the application of GIS to create a strategic system for administering agriculture in the country.

### References:

- INSPIRE Directive. 2007. Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) (L 108/1).
- ISO Standard 19152, 2012. Geographic information. Land Administration Domain Model (LADM) ISO 19152, International Organization for Standardization.