

Title: Cloud database for soil information

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Abstract:

The mere presence of scientific data is not enough. Reliable storage and ease of publication critically contribute to the data's usefulness.

The Africa Soil Information Service's mission is to describe and understand Africa's soil and landscape resources. To ensure its accomplishment the introduction of modern information technologies is essential - they provide the necessary means to safely store, easily share and analyse the information collected from soil samples and drone imagery.

In the presented work we develop a system that will tackle one part of the problem - how to store the information extracted from soil samples. The current method that is employed by scientists consists of making a record on paper by hand in one of the books in the laboratory's storage room. Such system, of course, does not allow to easily share the data, it is prone to damages (e.g. in case of fire) and leaves little room for analysis (especially using methods from machine learning, which require a large set of digital data). By contrast our system, developed in the form of a web application, stores soil information in the cloud secured by backups, provides a convenient user interface for searching and fetching the data and a flexible permission system to control access to the data.

The developed system underwent testing and is being successfully used in laboratories in Tanzania.

Keywords: cloud database web application soil information