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Building Data Infrastructure for Public Use and Informed Decision Making in Developing Countries-Nigeria

Authors : Busayo Fashoto, Abdulhakeem Shaibu, Justice Agbadu, Samuel Aiyeoribe

Abstract : Data has gone from just rows and columns to being an infrastructure itself. The traditional medium of data infrastructure has been managed by individuals in different industries and saved on personal work tools; one of such is the laptop. This hinders data sharing and Sustainable Development Goal (SDG) 9 for infrastructure sustainability across all countries and regions. However, there has been a constant demand for data across different agencies and ministries by investors and decision-makers. The rapid development and adoption of open-source technologies that promote the collection and processing of data in new ways and in ever-increasing volumes are creating new data infrastructure in sectors such as lands and health, among others. This paper examines the process of developing data infrastructure and, by extension, a data portal to provide baseline data for sustainable development and decision making in Nigeria. This paper employs the FAIR principle (Findable, Accessible, Interoperable, and Reusable) of data management using open-source technology tools to develop data portals for public use. eHealth Africa, an organization that uses technology to drive public health interventions in Nigeria, developed a data portal which is a typical data infrastructure that serves as a repository for various datasets on administrative boundaries, points of interest, settlements, social infrastructure, amenities, and others. This portal makes it possible for users to have access to datasets of interest at any point in time at no cost. A skeletal infrastructure of this data portal encompasses the use of open-source technology such as Postgres database, GeoServer, GeoNetwork, and CKan. These tools made the infrastructure sustainable, thus promoting the achievement of SDG 9 (Industries, Innovation, and Infrastructure). As of 6th August 2021, a wider cross-section of 8192 users had been created, 2262 datasets had been downloaded, and 817 maps had been created from the platform. This paper shows the use of rapid development and adoption of technologies that facilitates data collection, processing, and publishing in new ways and in ever-increasing volumes. In addition, the paper is explicit on new data infrastructure in sectors such as health, social amenities, and agriculture. Furthermore, this paper reveals the importance of cross-sectional data infrastructures for planning and decision making, which in turn can form a central data repository for sustainable development across developing countries.

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