

Geospatial data, analysis and mapping for service delivery

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Abstract:

Sustainable development is only met when citizens are provided with the necessary infrastructure and resources and management to enable economic growth; alleviating poverty and hunger, providing facilities for education and adequate health care, providing clean water and affordable clean energy. Together with this one must ensure that inequalities are avoided, sustainable cities and communities are promoted, partnerships are created and peace, justice and strong institutions are developed. All this done with responsible consumption and production activities, with responsible adherence to actions affecting climate, life below water and life on land.

To enable the responsible development of services infrastructure for economic activity and social services, access to integrated, relevant and current information is key together with the ability to visualise to support decision making and monitoring.

An Integrated Infrastructure Portal is created and is used by the province of Kwazulu-Natal in South Africa for integrated planning, strategic planning, design and development of the provinces' infrastructure. The use of GIS software using webservices is used to provide a common point of access to stakeholders for integrated planning, development and monitoring. "Talking to each other", then becomes a norm and sustainable and citizen focused social services needs are met through accessing integrated geospatial data.

In order for the integrated infrastructure geospatial portal to be realised a detailed knowledge infrastructure analysis or business and data analysis was done and developed that supported the design of the geodatabase framework. Key elements that were looked at was alignment with National standards for geospatial themes and categories as well as alignment with the UNGGIM themes. Standards for naming of datasets was then possible and more detailed recommendations on naming conventions for Key fields was recommended. This then enabled the integration of data records.

The final application is a web-based infrastructure portal that integrates data from the core databank as well as from distributed GIS data repositories via web services. Data integration is an important technical capability that supports and allows for planning for sustainable infrastructure development. The information requirements framework for a geospatial databank for sustainable infrastructure development is prepared and the framework for various provincial departments to integrate into was developed. The result is a decentralised point of access to integrate data for development planning.

The system has the geospatial data categorised in the sustainable development goals categories for ease of management as we are all now made to understand what these goals and the targets for these goals are meant to be. All data were collated, integrated and shared with national reporting requirements in mind, which is the country's National Development Plan. Alignment of the NDP and SDGs does exist, and therefore forward planning by feeding information into a national reporting environment allowing the country to report to international monitoring and evaluation environments of the Sustainable Development Goals was included. This is also to support a local municipal report to feed into district reporting and thereafter provincial reporting.

Sustainable development cannot exist without the inclusion of an assessment framework of land utilisation, a green building strategy and an oceans economy strategy. Integrated GIS information is critical in understanding the 'lay of the land' for developing and measuring these strategies.

References

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