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The National Policy Data Observatory

The National Policy Data Observatory (NPDO) is a government-led initiative housed at the CSIR that strengthens evidence-informed policymaking through advanced data analytics, geospatial intelligence and the National Integrated Cyber Infrastructure System (NICIS). Established during the Covid-19 pandemic, the NPDO has evolved into a multidisciplinary platform that integrates data, analytical methods and domain expertise to generate actionable intelligence for government planning and decision-making.

The NPDO is currently undertaking several data-driven projects across key public-sector priorities. These include Improving Service Delivery Using Data Science, Crime Detection, Prevention and Prediction, Census in the Digital Age, and Data-Driven Quality and Clean Water. Collectively, these projects demonstrate how the NPDO applies data science, spatial analytics, digital infrastructure and domain expertise to complex policy and service-delivery challenges.

The Improving Service Delivery Using Data Science project focuses on integrating municipal-level indicators on access to basic services, infrastructure performance, vulnerability, service gaps and priority areas into interactive dashboards and spatial decision-support tools. This work supports more targeted planning, monitoring and prioritisation of service-delivery interventions.

The Crime Detection, Prevention and Prediction project combines police-reported crime data, geospatial analysis, socio-economic indicators and social media-derived signals to identify spatial and temporal crime patterns, monitor emerging risks, support hotspot analysis and provide evidence to guide prevention strategies and resource allocation.

The Census in the Digital Age project explores how administrative records, geospatial datasets, digital platforms, and aggregated and anonymised mobile network operator data can complement traditional census methods. The project aims to improve demographic, mobility and settlement-pattern analysis by strengthening the timeliness, granularity and usability of population-related insights.

The Data-Driven Quality and Clean Water project applies data analytics and spatial intelligence to water quality and clean water challenges. It supports the integration, monitoring and analysis of water-related data to strengthen evidence-based planning, risk identification and decision-making around safe, reliable and sustainable water services.

Through strategic collaborations across government, research institutions and implementation partners, the NPDO is positioning itself as a central platform for integrated, data-driven decision support in South Africa. Its work translates complex and diverse data sources into practical intelligence for improved public service delivery, safety, planning, environmental management and national development outcomes, while remaining open to new partnerships and emerging areas of public-sector need.

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