

**Appendix A:** SDI-related activities and milestones for the different periods. Only developments during the respective period is shown, not the accumulation of developments.

	<b>Before 1994</b>	<b>1994-2000</b>	<b>2001-2009</b>	<b>Since 2010</b>
<b>International context</b>	<p>Development of GIS software products</p> <p>Digitalization and digital cartography</p> <p>First mention of SDI (1990)</p>	<p>The Internet and World Wide Web (Web 1.0) become mainstream (mainly read-only)</p> <p>SDIs are product-based, focusing on datasets and catalogues</p> <p>GSDI established in 1996</p>	<p>Web 2.0 (read-write)</p> <p>SDIs evolve from being process-based and coordinated, focusing on users and their needs, to being uncoordinated and decentralized, aimed at problem solving and decision-making</p> <p>Non-professionals become involved in geospatial data collection and use, e.g. VGI, open data, OpenStreetMap, Google Maps</p> <p>A European SDI is established through the INSPIRE Directive (2007)</p>	<p>Web 3.0 (Semantic Web)</p> <p>Geospatial data is ubiquitous, available on many different devices and used in many different ways</p> <p>UN-GGIM established (2011)</p> <p>UN-GGIM Africa established (2014)</p> <p>In Europe, SDIs are being integrated into e-government infrastructures, focusing on governance</p> <p>IGIF Parts 1 and 2 published by the UN-GGIM</p>
<b>Focus</b>	<p>Changing from people making paper maps to computers making digital maps</p>	<p>Establishing an SDI for South Africa through voluntary participation</p>	<p>Establishment of SASDI, CSI and the EMC through legislation</p>	<p>SASDI implementation through the legislative framework</p>
<b>Legislative framework</b>	<p>Copyright Act No. 98 of 1978</p>	<p>Promotion of Access to Information Act No.2 of 2000</p>	<p>Spatial Data Infrastructure Act No. 54 of 2003</p> <p>Draft Regulations in support of Act No. 54 of 2003</p>	<p>CSI Policy on Custodianship and CSI Policy on Pricing (2015)</p> <p>SDI Amendment Bill (2012)</p> <p>Draft SASDI Compliance</p>

	Before 1994	1994-2000	2001-2009	Since 2010
				<p>Guidelines (2013)</p> <p>Stakeholder workshops to collect comments on the Draft Regulations in terms of the SDI Act (2016)</p> <p>Initial work on the SA Geospatial Information Strategy (until 2014)</p>
<b>Coordinating bodies</b>	<p>National Programme for Remote Sensing, established in 1975</p> <p>State Inter-departmental Coordinating Committee for the National Land Information System, established in 1988</p>	<p>CSI, an inter-governmental committee with 3 subcommittees (Policies, Liaison, Technical)</p> <p>Coordinated by the NSIF in the Department of Land Affairs (DLA)</p> <p>SC71E, Geographic information, the local mirror committee for ISO/TC 211, established in 1999</p>	<p>CSI, a statutory body with 6 subcommittees (Policies, Data, Systems, Standards, Marketing &amp; Communication, Education &amp; Training)</p> <p>NSIF in the Department of Rural Development and Land Reform (formerly DLA) serves as CSI Secretariat</p>	<p>SABS/TC 211, Geographic information (renamed from SCI71E)</p>
<b>International involvement</b>	Limited international involvement due to sanctions	South Africa becomes a member of ISO/TC 211 (1994)	South Africa joins the GSDI	<p>GSDI disbanded in 2018</p> <p>South Africans participate in UN-GGIM Africa working groups</p>
<b>Available resources</b>	ReGIS, locally developed GIS software, the first GIS to run on the Windows operating system	<p>International GIS providers entered the market when sanctions were lifted</p> <p>SDDF, established by the NSIF</p>	None	<p>EMC outsourced to SAEON, (2015-2018)</p> <p>SASDI website (since 2020)</p>
<b>Outputs</b>	National Exchange Standard (1987)	SDDF populated with metadata, mainly by users outside of	Design of a metadata capturing tool based on ISO 19115:2003	SANS 1878-1:2011, South African spatial metadata standard Part 1:

	<b>Before 1994</b>	<b>1994-2000</b>	<b>2001-2009</b>	<b>Since 2010</b>
	National Topographic Information System, by the CD: NGI (then CD: SM) (1997)	<p>government</p> <p>EIS/NSIF Special workshop on Africa Spatial Data Infrastructure (1999)</p> <p>4th GSDI Conference held in South Africa (2000)</p>	<p>SDDF has 3,000 metadata records about public and private sector datasets covering the SADC region</p> <p>SANS 1877:2004, A standard land-cover classification scheme for remote-sensing applications in South Africa</p> <p>SANS 1883-1:2009, Geographic information - Addresses Part 1: Data format of addresses</p> <p>SANS 1883-3:2009, Geographic information - Addresses Part 3: Guidelines for address allocation and updates</p>	<p>Core metadata profile</p> <p>SANS 1880:2014, South African geospatial data dictionary (SAGDaD) and its application</p> <p>SANS 1876:2018, Rules for unique feature identifiers in South African geospatial datasets</p> <p>SANS 1883-2:2018, Geographic information - Addresses Part 2: Addresses data exchange, based on ISO 19160-1:2015</p> <p>List of fundamental geospatial data themes (2016/17) and datasets for each theme published by the CSI subcommittee on Data</p> <p>Identification and appointment of data custodians</p>
<b>Role of municipalities</b>	In the 1980s, larger municipalities, such as Durban, Cape Town, Johannesburg, Randburg, Midrand and Pretoria, acquire GIS software and start capturing (digital) geospatial data	<p>Many changes in municipal boundaries, therefore municipalities focus on integration of their GIS</p> <p>Municipalities participate in the inter-governmental CSI and its subcommittees</p>	<p>In principle, municipalities are represented on the CSI, but no is CSI members are appointed</p> <p>A number of municipalities actively contribute to the development of the South African addressing standard (SANS 1883)</p>	<p>Municipal representatives, each with an alternate member, are appointed as CSI members:</p> <ul style="list-style-type: none"> <li>– one person representing the National Department for Provincial and Local Government</li> <li>– one person from a local municipality which is mainly rural in character</li> </ul>

	Before 1994	1994-2000	2001-2009	Since 2010
				<p>– one person from a local municipality which is mainly urban in character (City of Johannesburg, City of Tshwane)</p> <p>These CSI members and other municipal representatives participate in various subcommittees</p>

CD: NGI Chief Directorate: National Geo-spatial information  
 CD: SM Chief Directorate: Surveys and Mapping  
 CSI Committee for Spatial Information  
 EIS Environmental Information Systems  
 EMC Electronic Metadata Catalogue  
 GIS geographic information system  
 GSDI Global Spatial Data Infrastructure Association  
 NSIF National Spatial Information Framework  
 SAEON South African Earth Observation Network  
 SASDI South African spatial data infrastructure  
 SDDF spatial data discovery facility  
 SDI spatial data infrastructure  
 UN-GGIM United Nations Committee of Experts on Global Geospatial Information Management  
 VGI volunteered geographic information