

# Beyond spatial data infrastructures...

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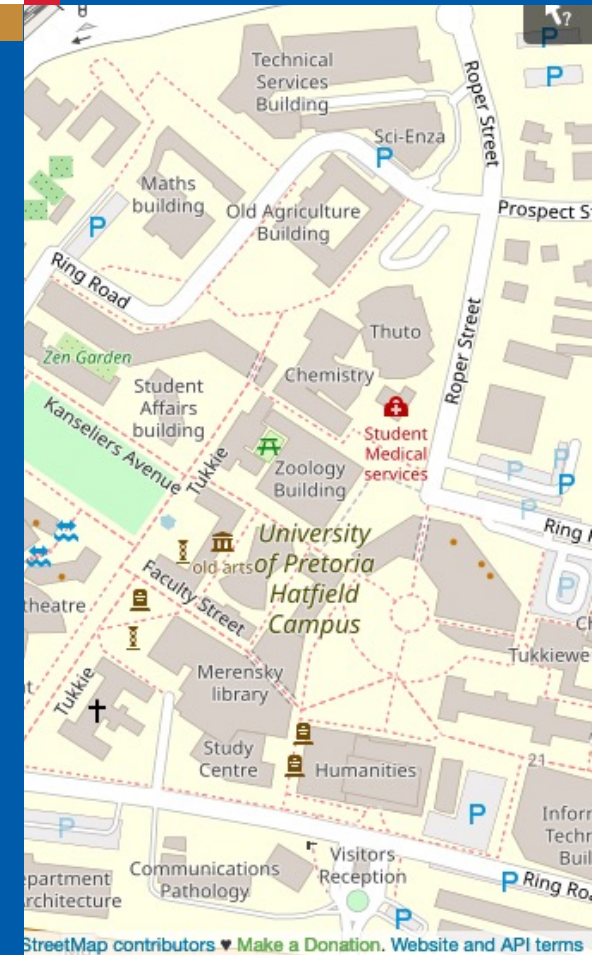
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III Simpósio Brasileiro de Infraestrutura de Dados Espaciais:  
Geoinformação aberta para desenvolvimento sustentável

Make today matter



**Ever-increasing volumes of  
geospatial information  
and the challenges of  
making the information  
available, accessible and usable**

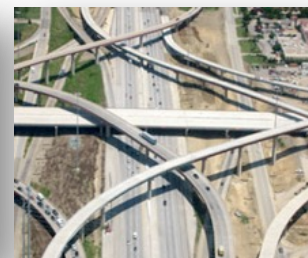
# An infrastructure is...

the *fundamental facilities and systems* serving a country, city, or area

the *basic facilities, services and installations* needed for the functioning of a community or society

the *basic, underlying framework or features* of a system or organization

Source: [www.dictionary.com](http://www.dictionary.com), [www.wiktionary.org](http://www.wiktionary.org)



<http://www.cbase-ng.com/services/telecoms/>, <http://bahuvida.com/Business-Divisions/Infrastructure/Electrical/>, <http://www.unece.org/>, <http://kclr96fm.com/>

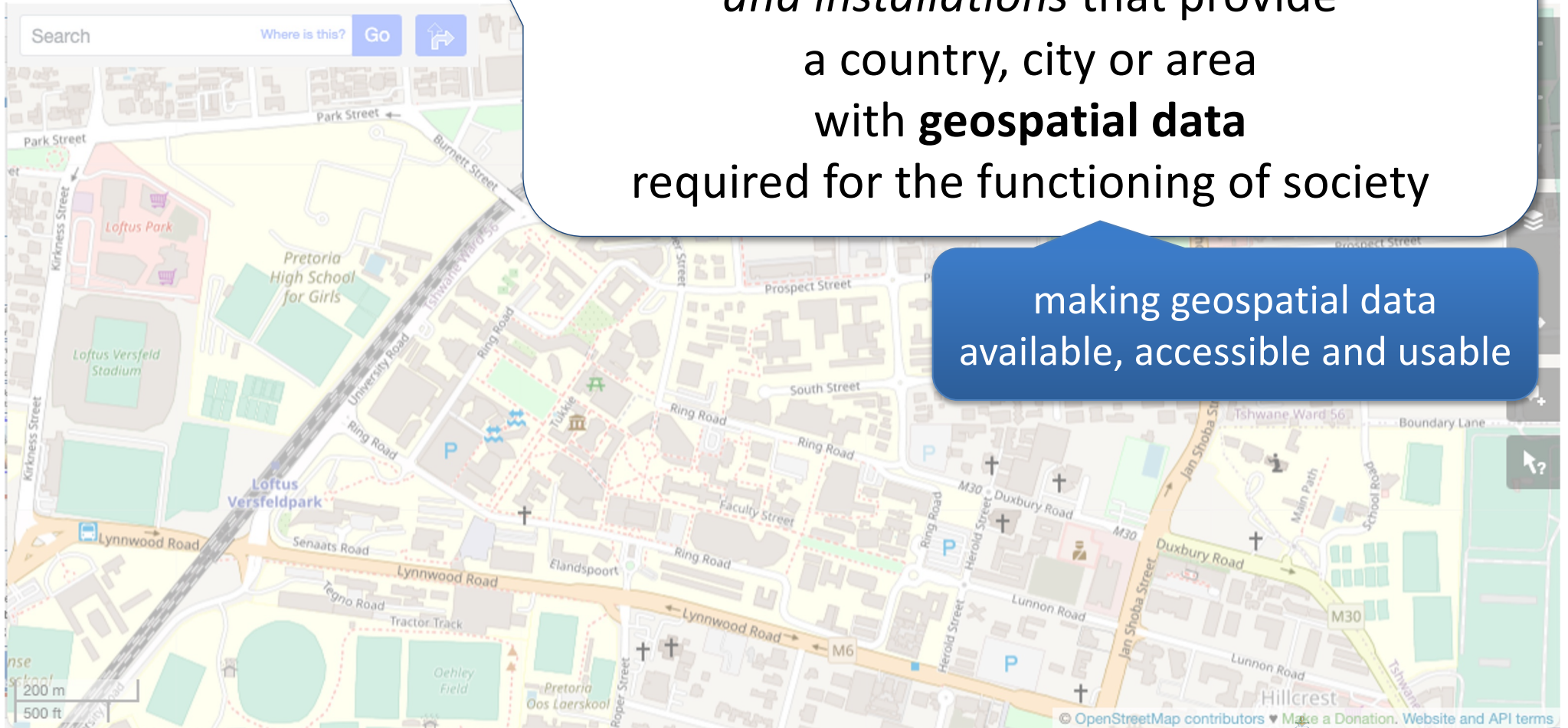


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# A spatial data infrastructure is...

the *fundamental facilities, services, systems and installations* that provide a country, city or area with **geospatial data** required for the functioning of society

making geospatial data available, accessible and usable

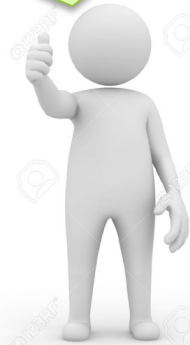




Many of today's infrastructures originate from the 1800s and evolved into public services with centralized bureaucratic operations subject to government regulation

# Spatial data infrastructures are evolving...

SDIs change to **decentralized** and **bottom-up**



Rajabifard 2006  
Elwood 2010

SDIs driven by **government** do not readily evolve in response to new technological trends



Diaz et al. 2012

SDI s will **'disappear'** to become integral parts of information infrastructures in general



de Man 2007

SDIs are evolving in response to **crowdsourcing** and **mobile technologies**



Coetzee et al. 2013

Coetzee and Wolf-Piggott (2015)

# Towards a sustainable geospatial ecosystem beyond SDIs

- The world is changing faster than ever before
  - New data sources: crowdsourcing, IoT, satellites...
  - Technological advances
  - More automation, analytics, intelligence
  - User expectations are changing
  - Organisations are changing

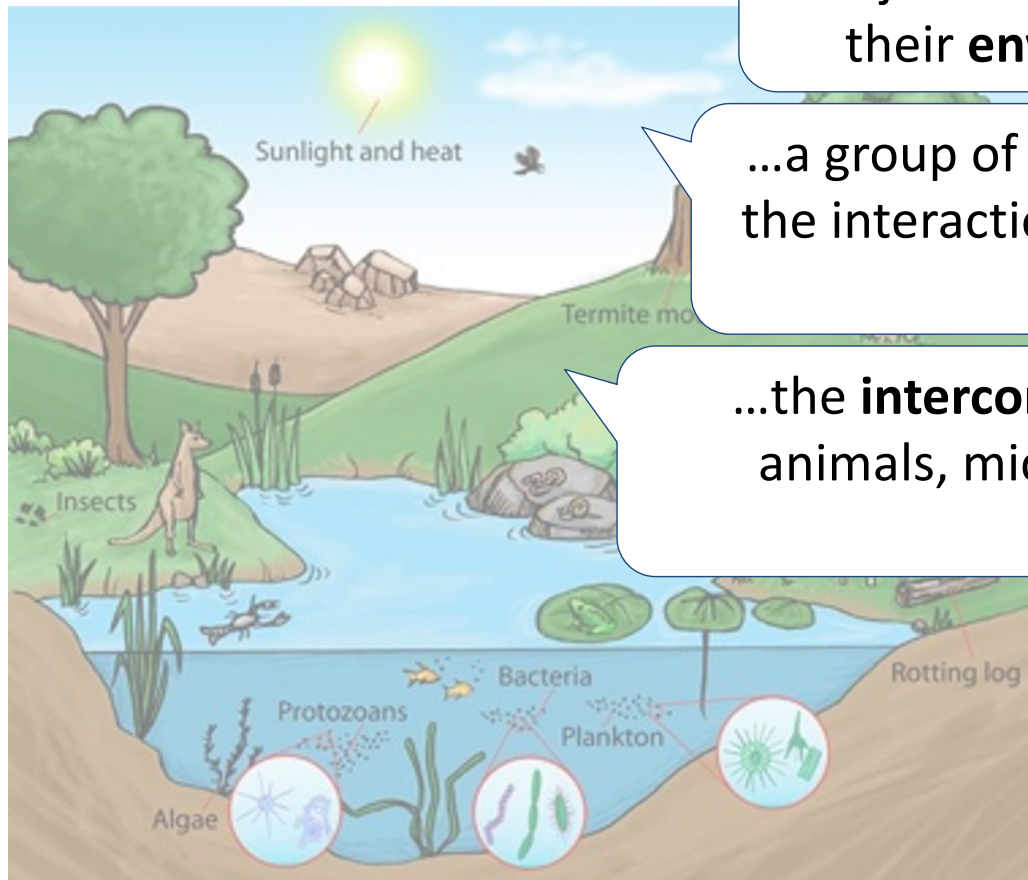
We need to rethink how geospatial information is made available and usable...

# An ecosystem is...

... a community of living **organisms** in conjunction with the non-living components of their **environment**, **interacting** as a system

...a group of **interconnected** elements, formed by the interaction of a community of **organisms** with their **environment**

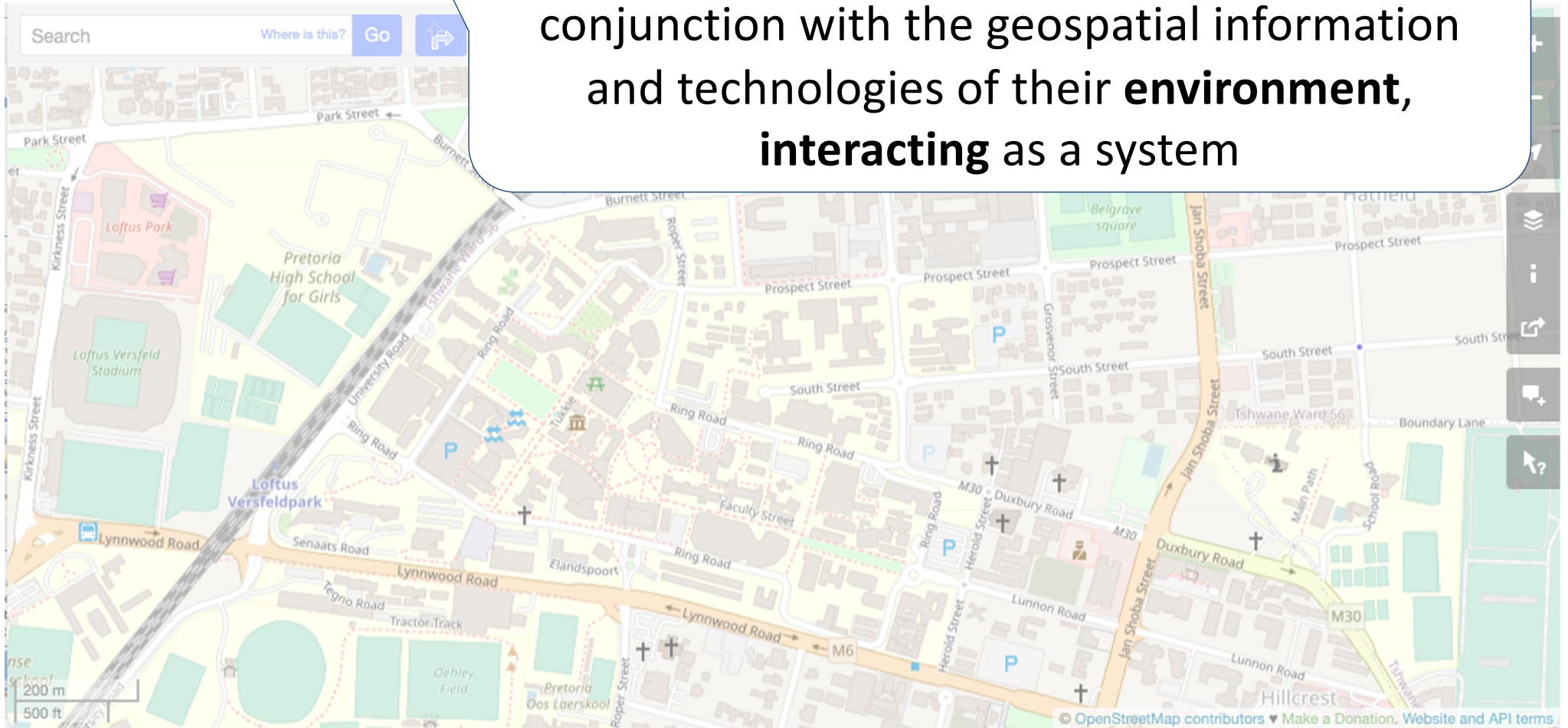
...the **interconnectedness** of **organisms** (plants, animals, microbes) with each other and their **environment**



Source: [www.wikipedia.org](http://www.wikipedia.org), [www.dictionary.com](http://www.dictionary.com), [www.wiktionary.org](http://www.wiktionary.org)

# The geospatial ecosystem is...

... a community of **providers and users** in conjunction with the geospatial information and technologies of their **environment, interacting as a system**



# How can the geospatial society drive the transition to a sustainable geospatial ecosystem?

# Suggestions for...

- Governments
- Geospatial industry
- Academia (research and educators)
- Civil society

# Suggestions for governments...

- Replace control with coordination
  - Devolve control to multiple stakeholders and take on a facilitating role
- Widen representation on SDI coordinating bodies
  - Representation from entire user community, not only governments

# Suggestions for governments...

- Develop agile frameworks to facilitate interoperability and avoid project silos
  - Avoid monoliths and silos
  - Cater for diverse and changing user needs
- Continue with policy development
  - To support the agile frameworks
  - To guide the multiple stakeholders, e.g., for pricing, licensing, use, reuse

# Suggestions for governments...

- Re-focus on niche areas
  - Don't compete with data and services that are better provided by others, e.g. OpenStreetMap, Bing Maps and Google Maps
  - Refocus to support municipalities with data at scales useful to them
- Identify niche geospatial information themes and custodians
  - Focus on datasets that are critical for governance, functioning for society, and not readily available elsewhere
  - Coordination is key

# Suggestions for governments...

- Get involved in e-government and data management initiatives
  - Move closer to these initiatives, they typically have the same objectives
- Be strategic when initiating an SDI within the geospatial ecosystem
  - Focus on what is really needed
  - Keep it simple, then expand and grow

# Suggestions for governments...

- Actively engage in collaborations
  - To survive in the ecosystem, smaller public bodies (e.g. municipalities) can strengthen their competitive advantage by collaborating with others
- Provide authoritative stamp of approval, where necessary
  - Due to expected increases in disinformation, authoritative government stamp of approval even more important in future

# Conclusion

**Geospatial or location-based information will be commonplace in future**

SDIs (and governments)  
will continue to play an important role,

but it will be a different role in a different environment,  
and if they do not adapt, there is trouble ahead...

# Acknowledgements

This presentation is largely based on a paper which was the outcome of a series of discussions about a future vision beyond spatial data infrastructures, initiated by the Policies Portfolio Group of the European Umbrella Organization for Geographic Information (EUROGI):

Coetzee S, Gould M, McCormack B, Sadiq Z, Scott G, Kmoch A, Alameh N, Strobl J, Wytzisk A, Devarajan T, 2021., Position Paper for the 11th Session of *Towards a sustainable geospatial ecosystem beyond SDIs* the United Nations Global Geospatial Information Management (UN GGIM),  
[https://ggim.un.org/meetings/GGIM-committee/11th-Session/documents/Towards a Sustainable Geospatial Ecosystem Beyond SDIs Draft 3Aug2021.pdf](https://ggim.un.org/meetings/GGIM-committee/11th-Session/documents/Towards_a_Sustainable_Geospatial_Ecosystem_Beyond_SDIs_Draft_3Aug2021.pdf)

# Thank You

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