

SDI for the Amazon



Questions

- Who am I?
 - Software Developer
 - Working with GIS application since 1991
- Ph.D from Maine in 2001
- Associate professor at Information Sciences at Penn State University since 2001



After 7 years

- Sabbatical
 - Question:
 - How to work with Gilberto
 - Amazon
 - and Clodoveu
 - SDI – spatial data infrastructures
 - and with myself of course
 - information integration from multiple perspectives
 - » Ontologies, philosophy, conflicting views on the same subject
 - SDI for the Amazon project
 - see web page: [google sdi for the amazon](#)



Special Issue of Earth Science and Informatics

- Cfp (google “SDI for the Amazon”)

- Miguel: “we have to think about our papers”

- Sven Schade

- Schema translation and data quality. Integrating sensor data in decision processes often requires translating their formats and underlying conceptualizations. Accounting for accuracy and other quality parameters is a key part of this translation. I will present recent work on ontological approaches and how it can help to improve our understanding of the environment.

- Patrick Maué

- Metadata and information communities. The traditional metadata models have failed in practice. New ideas evolving in the social web provide better answers to information seekers and decision makers. I will present a software architecture applying these ideas, showing how it can be used for environmental information.



The idea

- SDI is more than distributing maps
 - an enabler for understanding space
 - Multidisciplinarity
 - Policy making
 - Public participation
 - And of course data integration



Summary of the workshop

- Keynote
 - From today's SDI to tomorrow's digital earth(s)
(Max Craglia)
- Presentations based on position papers
 - Understanding global change (Clodoveu/Fred)
 - Building an SDI for a Sustainable Amazonia based on Brazil's policy needs (Gilberto)
 - Spatial data for scientific research in the Amazon
(Silvana Amaral – INPE)

Summary

- Presentations based on position papers (cont.)
 - Infra-estrutura de dados espaciais para a Amazônia (cap. Soraya Issmael – DSG/EB)
 - Status of Spatial Data Infrastructure in Brazil (Luiz Paulo Fortes – DG/IBGE)
 - Globo Amazonia (Eduardo Acquarone – Rede Globo)
 - Spatial data infrastructures: reuse beyond the metadata (Odilon Silva/Jugurta Lisboa – UFV)

Research Challenge

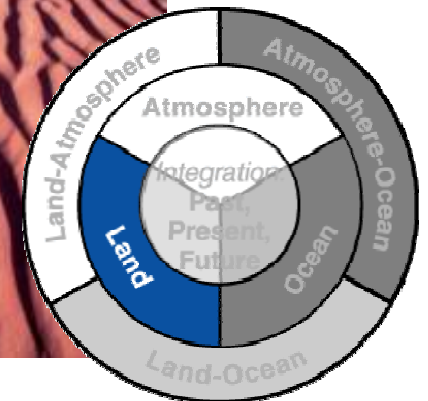
How is the Earth's environment changing and what are the consequences for human civilization?

GIScience Research Agenda

- Four proposed topics:
 - Modeling
 - Data collection
 - Knowledge discovery
 - Support for policy-making

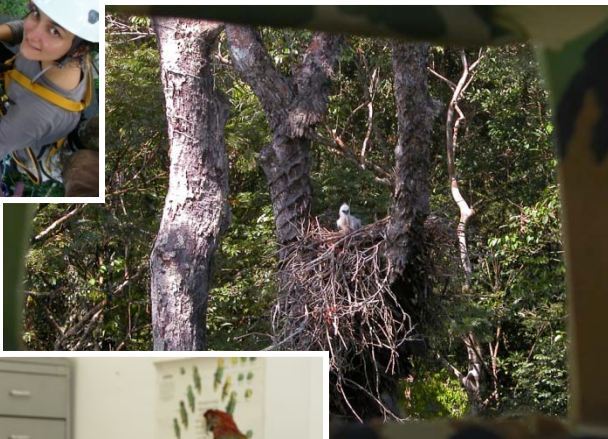
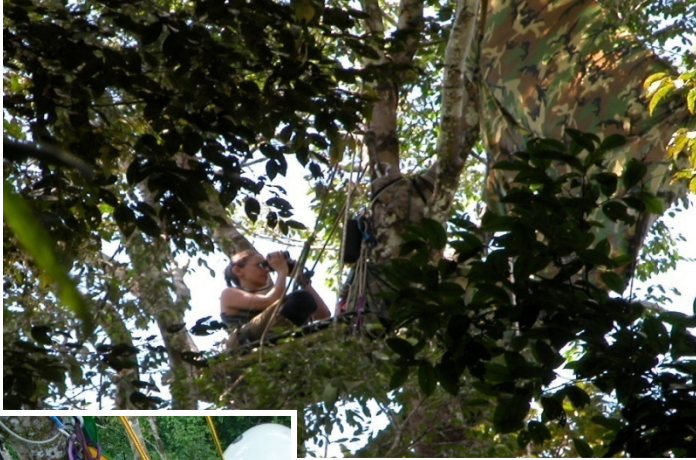
Global Land Project

- What are the drivers and **dynamics of variability and change** in terrestrial human-environment systems?
- How is the provision of **environmental goods and services** affected by changes in terrestrial human-environment systems?
- What are the **characteristics and dynamics of vulnerability** in terrestrial human-environment systems?



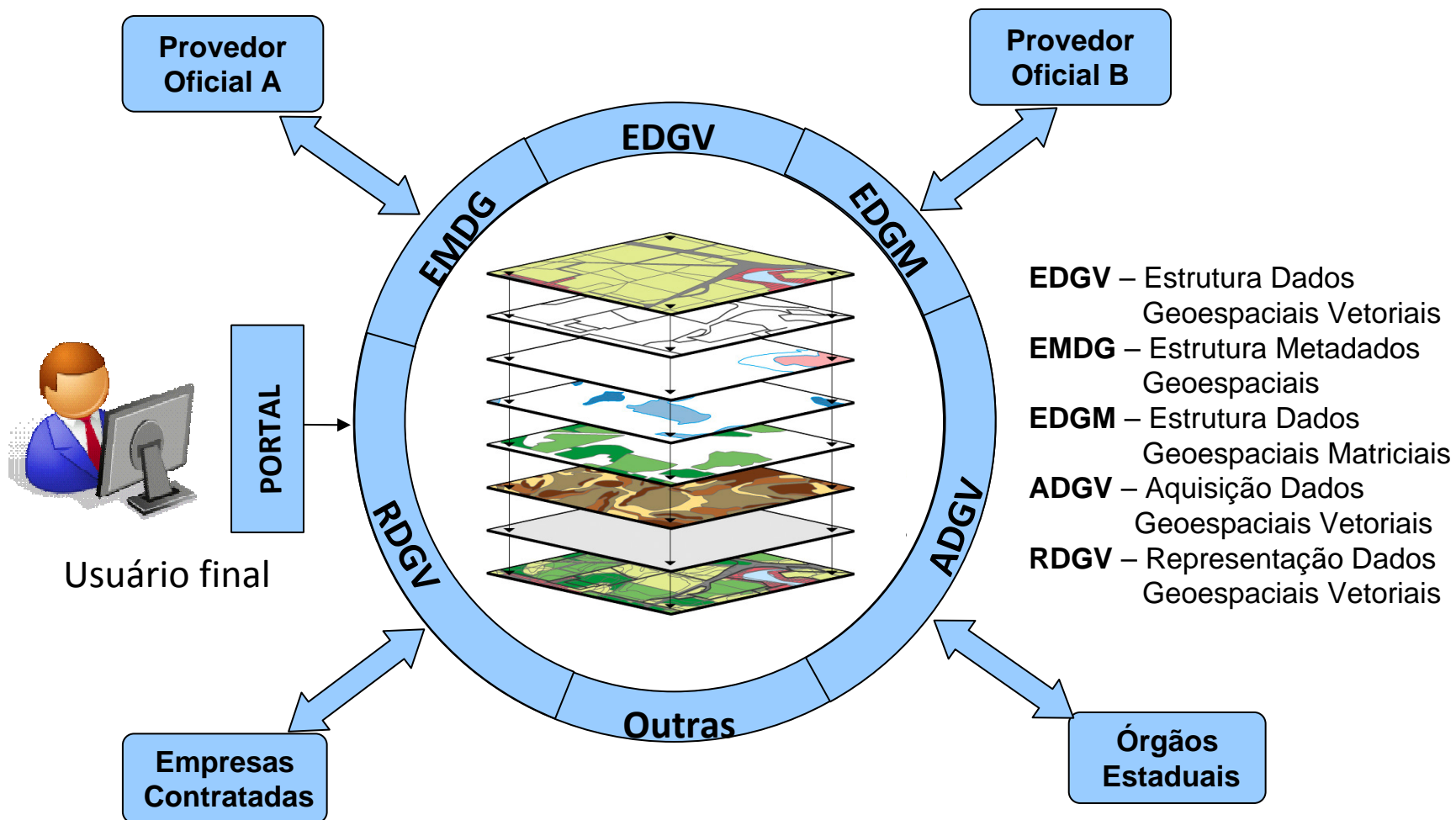
GLOBAL
I G B P
CHANGE

So hard to get... Why should I share???



Data availability
"Cultural task"

A INDE – Especificações Técnicas



1. Breve histórico: notícias + mapa interativo

The screenshot shows the website **globo.com** with a navigation bar containing **notícias**, **esportes**, **entretenimento**, and **vídeos**. A search bar is present with the text "no g1".

The main content area features a news article with the headline: **Empresas prometem não comprar de desmatadores**. The sub-headline reads: "Frigoríficos e supermercados se comprometem a cortar negócios com fazendas embargadas." Below the headline, there is a bullet point: "Produtos consumidos em SP ajudam a devastar".

Below the article, there are sections for "CONGRESSO" and "ENERGIA". The "CONGRESSO" section has the headline: **Câmara aprova medida provisória que cria o Fundo Amazônia**. The "ENERGIA" section has the headline: **Minc: não haverá 'licença política' para Jirau**.

To the right of the article is an interactive map titled **amazônia.vc**. The map shows the Amazon region with markers for fires (flames) and deforestation (brown patches). The map interface includes a legend with "queimadas" (fires) and "desmatamento" (deforestation), and a scale bar of 500 miles. The map is powered by Google Maps.

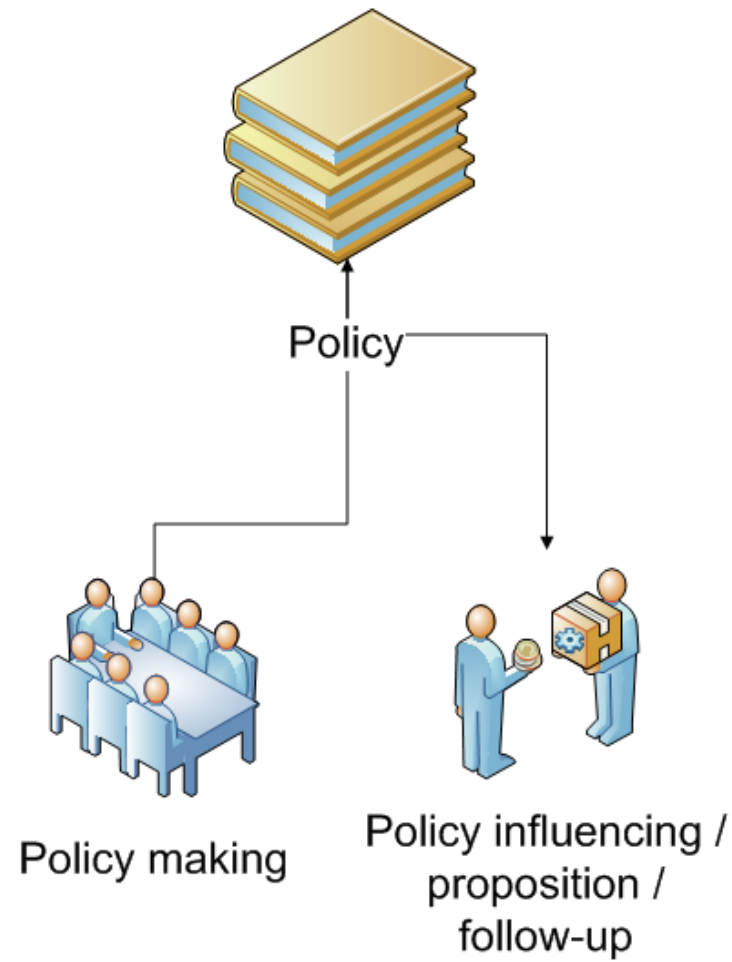
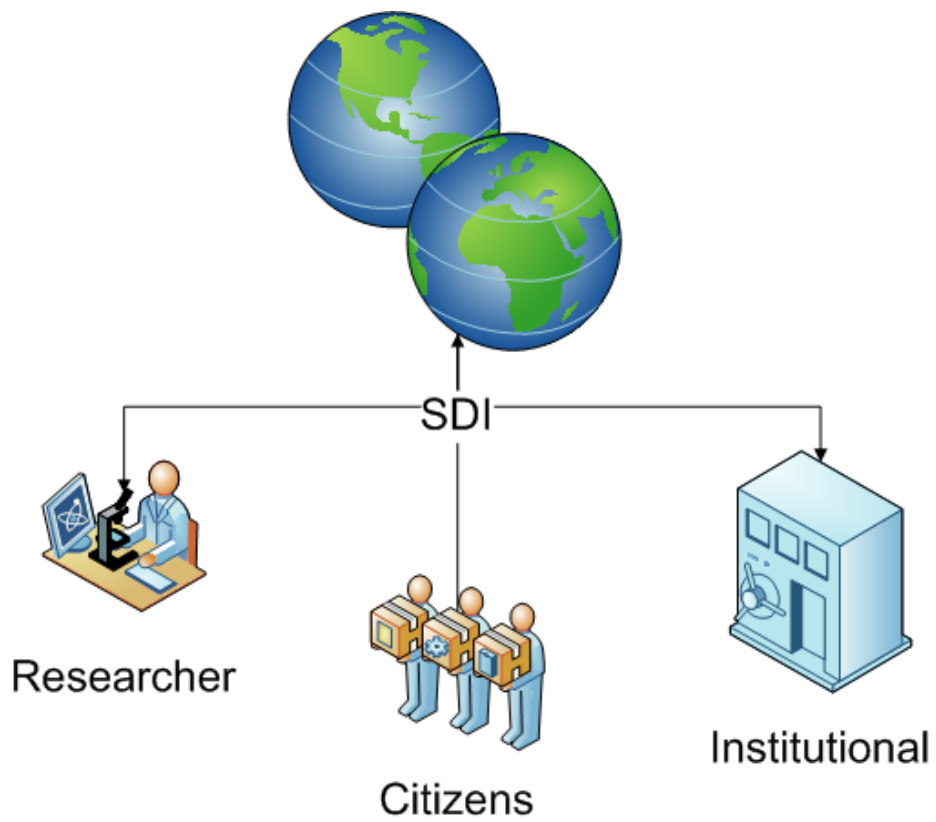
On the left side of the page, there is a sidebar with a "Banco do Planeta" logo and a list of links: "Primeira Página", "Amazônia no Orkut", "Notícias", and "Vídeos". Below this, there is a section for "editorias G1" with links for "Primeira Página", "Blogs e Colunas", "Brasil", "Carros", and "Celebridades".

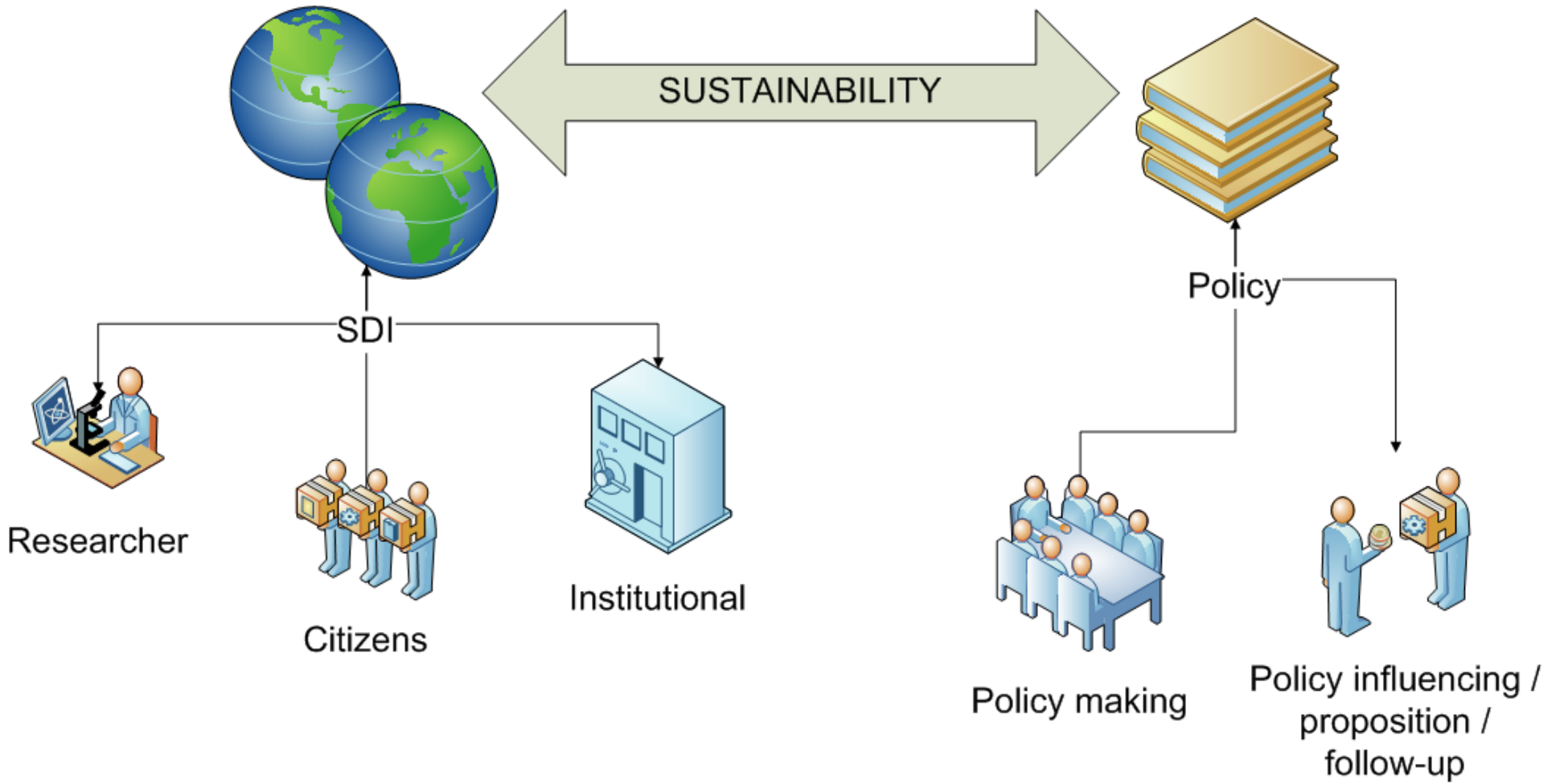
Perspectives

- SDI research
 - Sustainability: refine definition and establish requirements for data
 - Tools and techniques for creating SDIs
- Institutional data providers
 - Official/governmental SDI: INDE, INSPIRE
- Users / researchers
 - Scientific demand for data
- Voluntary/popular participation

Ideas

- We need ways to promote the interaction and collaboration among people regarding sustainability in the Amazon
 - Information sharing
 - Collaboration mechanisms
 - Opinions/validation
 - Wikis
 - Blogs
 - Community building
 - Digital Earth perspective: more than SDI
 - “Reading club vs. Library”
 - “e-Science”





Ideas

- A set of Web-based interaction resources
 - Facilitate access to actual data
 - Encourage researchers to make studies and data available
- Strong presence of recognized members of the community
- Inclusive
- “Just do it” versus “We’ll do it for you”
- Scientists influence policy making
- Citizens have a presence and can contribute

Opportunities

- Globally important
- Strong popular interest
- Much data is available, although not easily accessible

Challenges

- Not actually a SDI
- Available information has to reach different communities, which have different languages
- Interaction and collaboration resources have to show added value

Challenges

- Supporting Sustainability Science and Policy Making
 - What is sustainability? Can we define create a “community of practice” for sustainability science?
 - How can we motivate the community of practice to contribute and interact? Recognition mechanisms, gathering contributions from many sources
 - What are the specific spatial data needs of sustainability science?

Challenges

- Data
 - What's available? What are the data policies in place?
 - What's not available? What are the data gaps?
 - What will be available? What are the present and future data sources?
 - What can be made available (geosensors technology, future remote sensing, scientific data not on the Web)?
 - How can we obtain data about people and on the impact of human actions?

Challenges

- Individual contributions
 - How can citizens, scientists and policy makers interact as individuals?
 - Can the monitoring of the Amazon be “wikified”, i.e., can volunteers closely monitor environmental issues by working in their free time over freely-available geographic data? What kind of tools would they need?

Challenges

- Individual contributions (cont.)
 - Are volunteers able to obtain, analyze, and identify change vectors from online data sources?
 - Can the quality of this volunteer work be assessed?
 - How can people be motivated to contribute?
 - Is it possible to approach real-time monitoring if there are enough volunteers?

Challenges

- Modeling
 - How to model the interactions between nature and society, and how to measure the impact of governmental policies?
 - How can SDI and other sources of data be used for that?

