



Providing Data to SDI: the Role of the Public and Private Sectors

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Public-Private Partnership for Spatial Data Infrastructure
Exchange Forum

Amsterdam, April 26, 2012

To present this topic from the Brazilian perspective showing:

- **The legal and institutional framework which states the participation of both sectors in data production during the past 4 decades**
- **Examples of participation of the public and private sectors' data production during this time period**
- **The current open data context in Brazil and in the Americas**
- **Some examples of benefits of NSDI to public and private sectors**
- **Situation of PPP in the country**
- **Final remarks**

BRAZIL

Land area	8,514,876.599 km ²
Sea area	3,600,000 km ²
States	27
Municipalities	5,565
Population (2010 Demographic Census)	190,755,799



- ✓ **Constitution of 1988:** Union is responsible for:
 - ✓ organizing and maintaining the National Cartographic Services
 - ✓ legislating on the National Cartographic System: composed by **national public** and **private entities** responsible mainly for cartographic (or related) activities
- ✓ **Decree-Law 243/67:** establishes the directives of the brazilian cartographic activities
- ✓ **Decree 89817/1984:** establishes the Technical Standards of the National Cartography
- ✓ **Decree 6666/2008:** establishes the National Spatial Data Infrastructure of Brazil (INDE)



GI Institutional

Arrangement in Brazil



Ministry of Planning

- Manager of the National Cartographic System
- Responsible for NSDI data sharing agreements



National Commission of Cartography

- Cartographic Policy
- NSDI Coordination

Examples of GI Producers



Instituto Nacional de Colonização e Reforma Agrária – INCRA



Instituto Nacional de Pesquisas Espaciais – INPE



Cidades
Ministério das Cidades



Diretoria de Hidrografia e Navegação – DHN



Departamento Nacional de Infraestrutura de Transportes – DNIT



Diretoria de Serviço Geográfico do Exército Brasileiro – DSG



Ministério do Meio Ambiente – MMA



Transportes
Ministério dos Transportes



Secretaria do Patrimônio da União – SPU



Empresa Brasileira de Pesquisa Agropecuária – EMBRAPA



Instituto Brasileiro de Geografia e Estatística – IBGE



Instituto de Cartografia Aeronáutica – ICA



Agência Nacional de Transportes Terrestres – ANTT

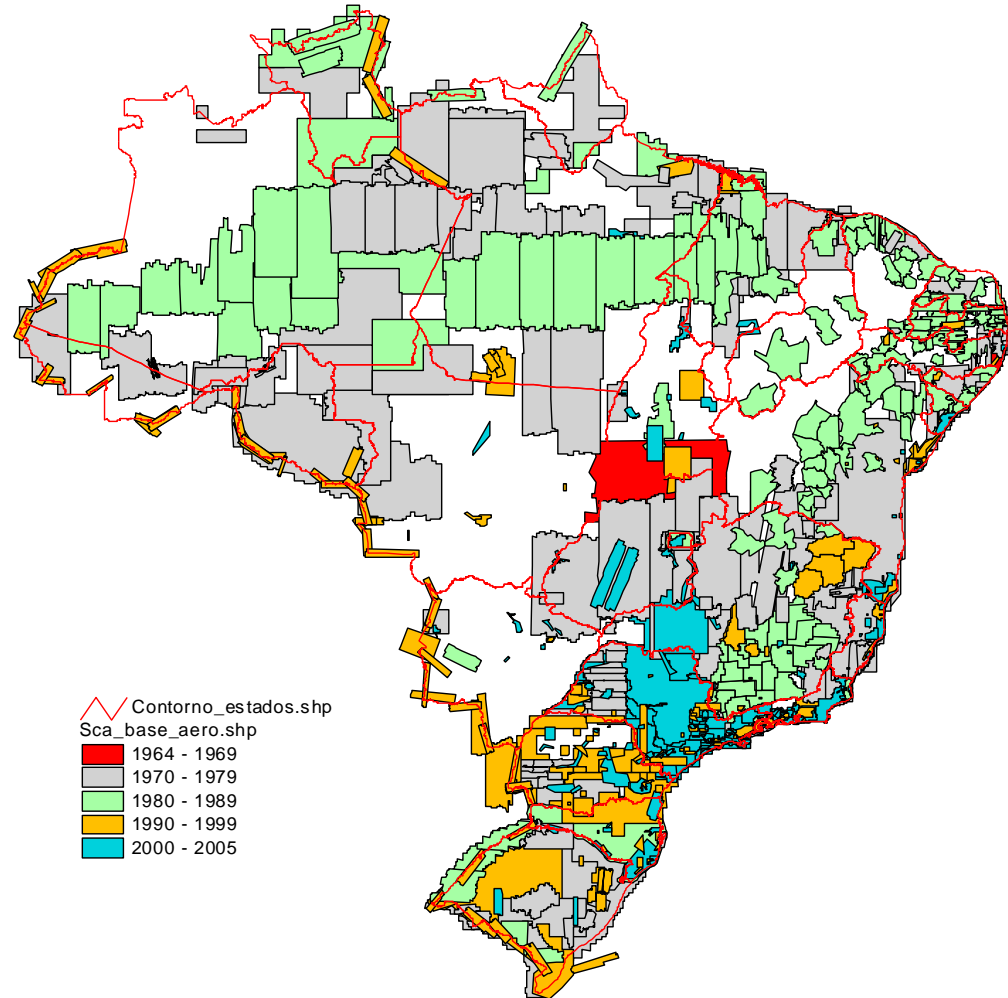


Centro Gestor e Operacional do Sistema de Proteção da Amazônia -CENSIPAM



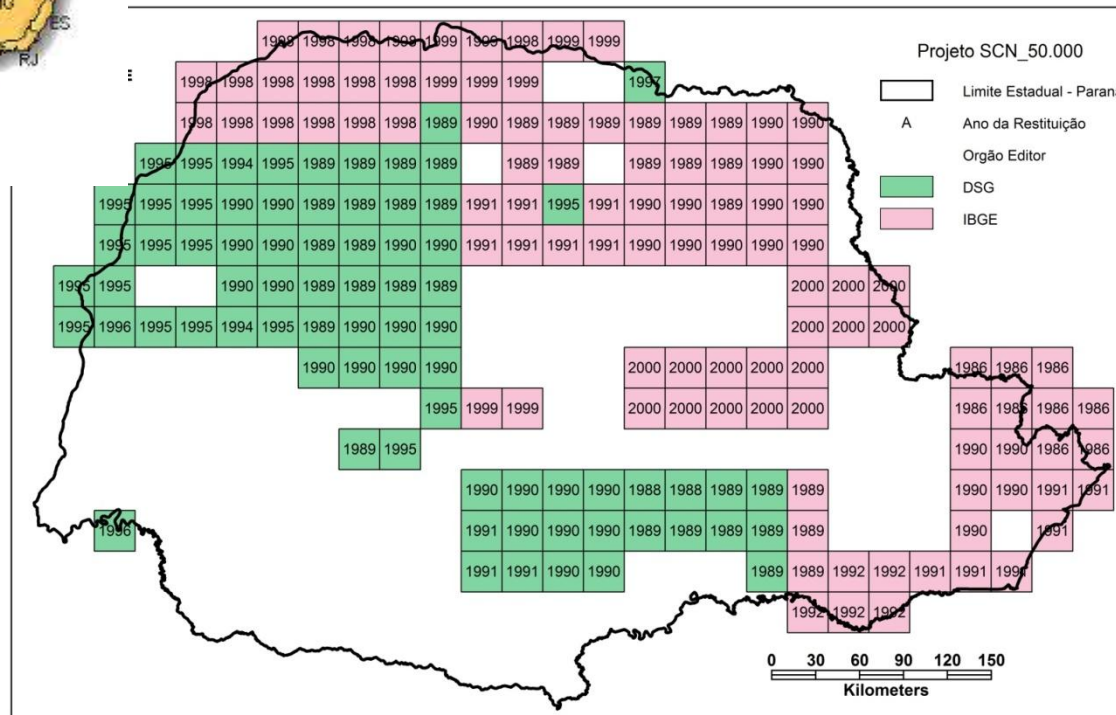
Serviço Geológico do Brasil -CPRM

- 700+ flights
- Great majority by private companies contracted by the federal and state governments
- A few ones by the Brazilian Air Force



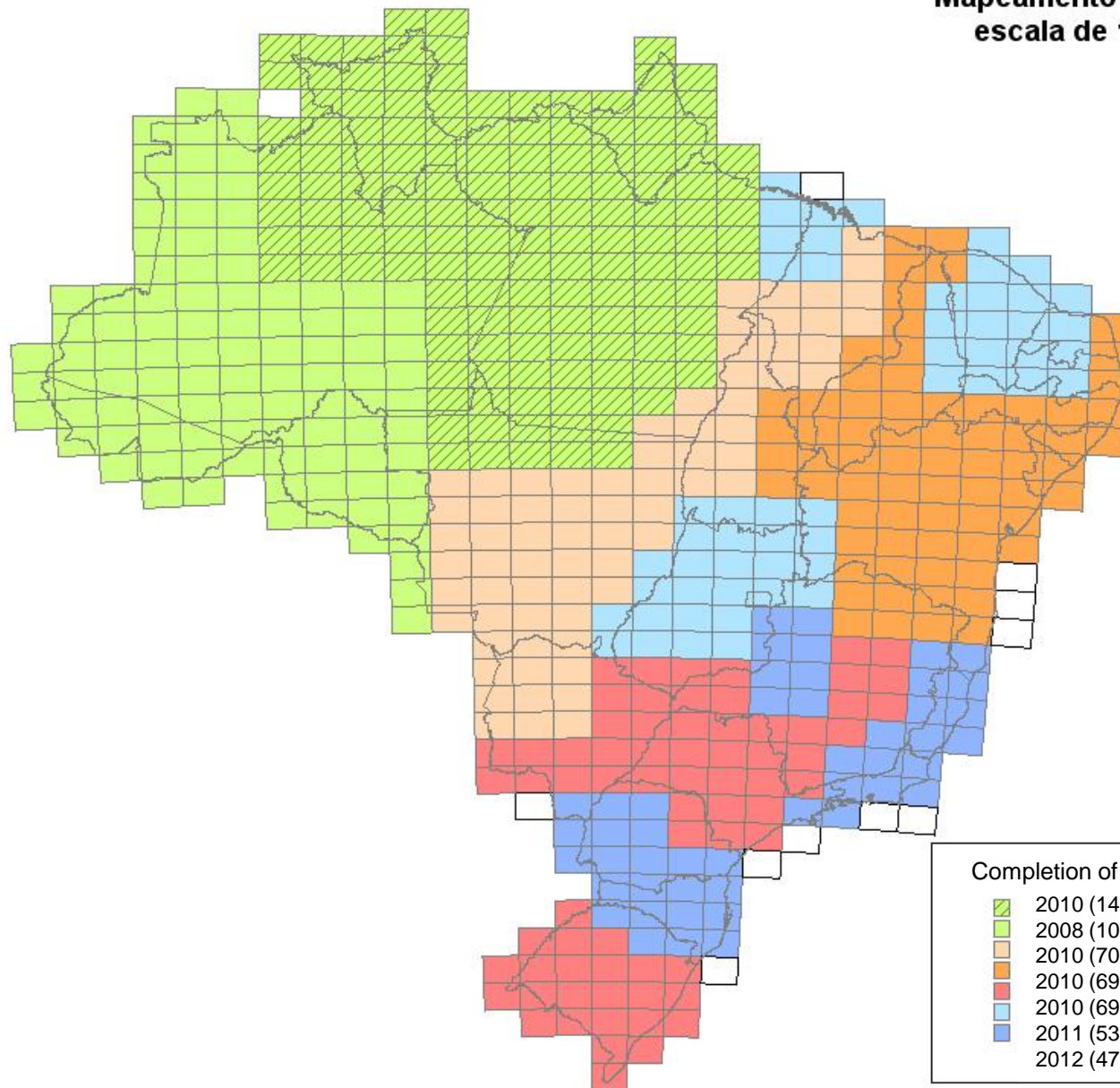


Example of a joint Public-Private Initiative



Copel – Electricity Company of the State of Paraná, created in 1954, co-owned by the State and private investors (participates in the stock market since 1994)

**Mapeamento Sistemático
escala de 1:250.000**



Completion of blocks

- 2010 (141 sheets)
- 2008 (100 sheets)
- 2010 (70 sheets)
- 2010 (69 sheets)
- 2010 (69 sheets)
- 2011 (53 sheets)
- 2012 (47 sheets)



2010 Population Census



Census Mapping

27 Federation Units
(States)

5,565 Municipalities

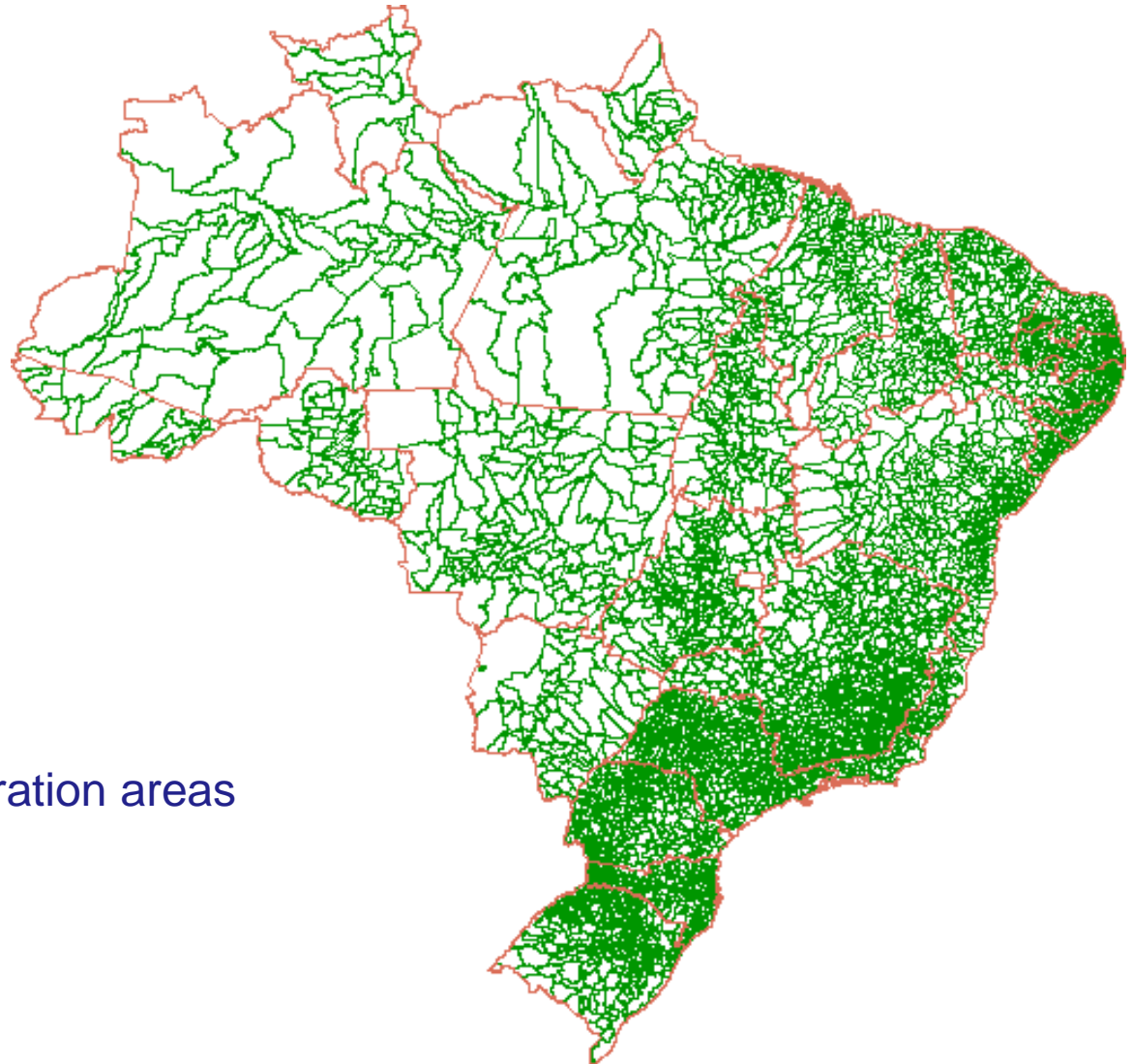
10,283 Districts

662 Subdistricts/R.A.

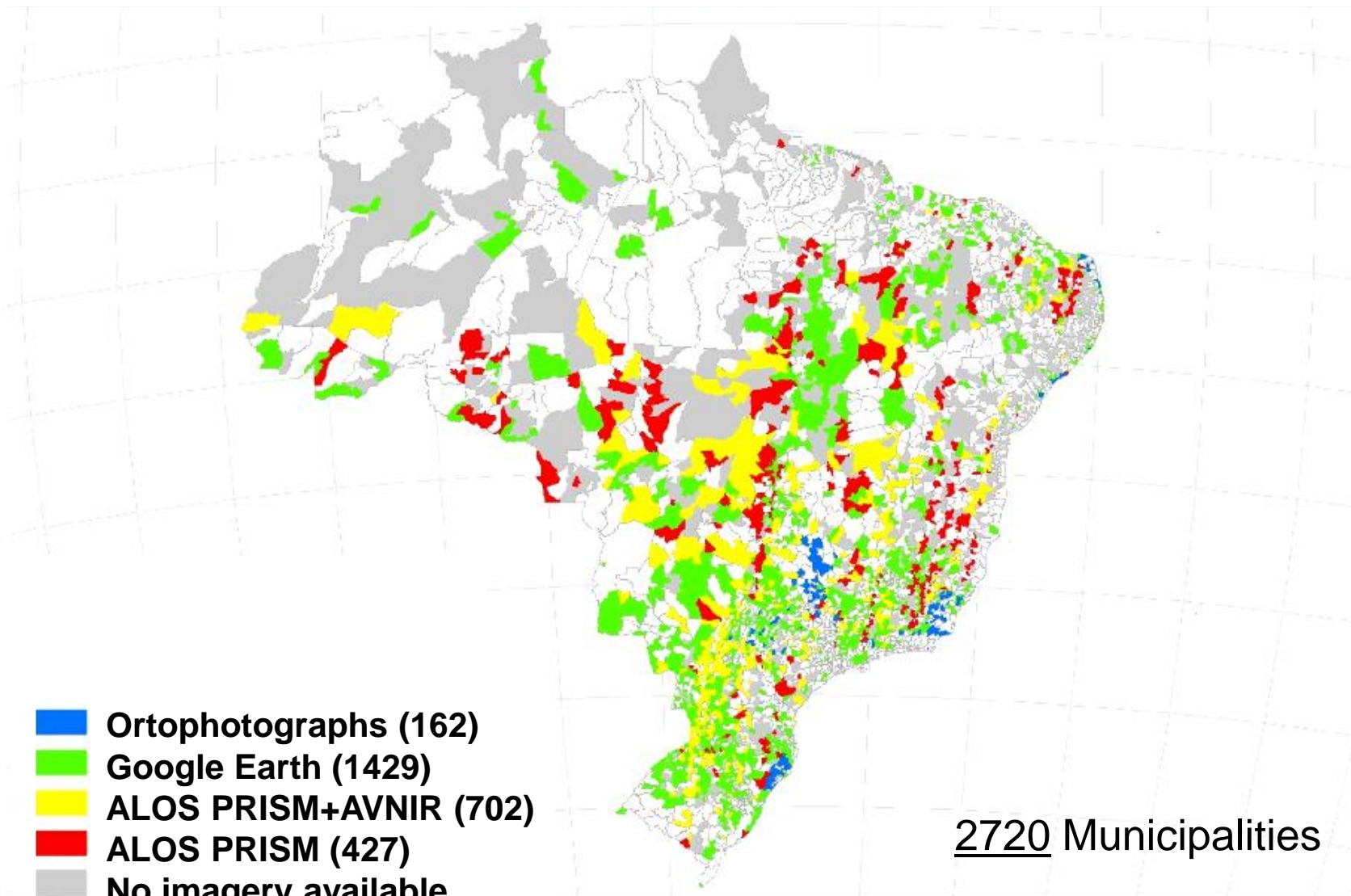
316,574 Enumeration areas

240,382 urban

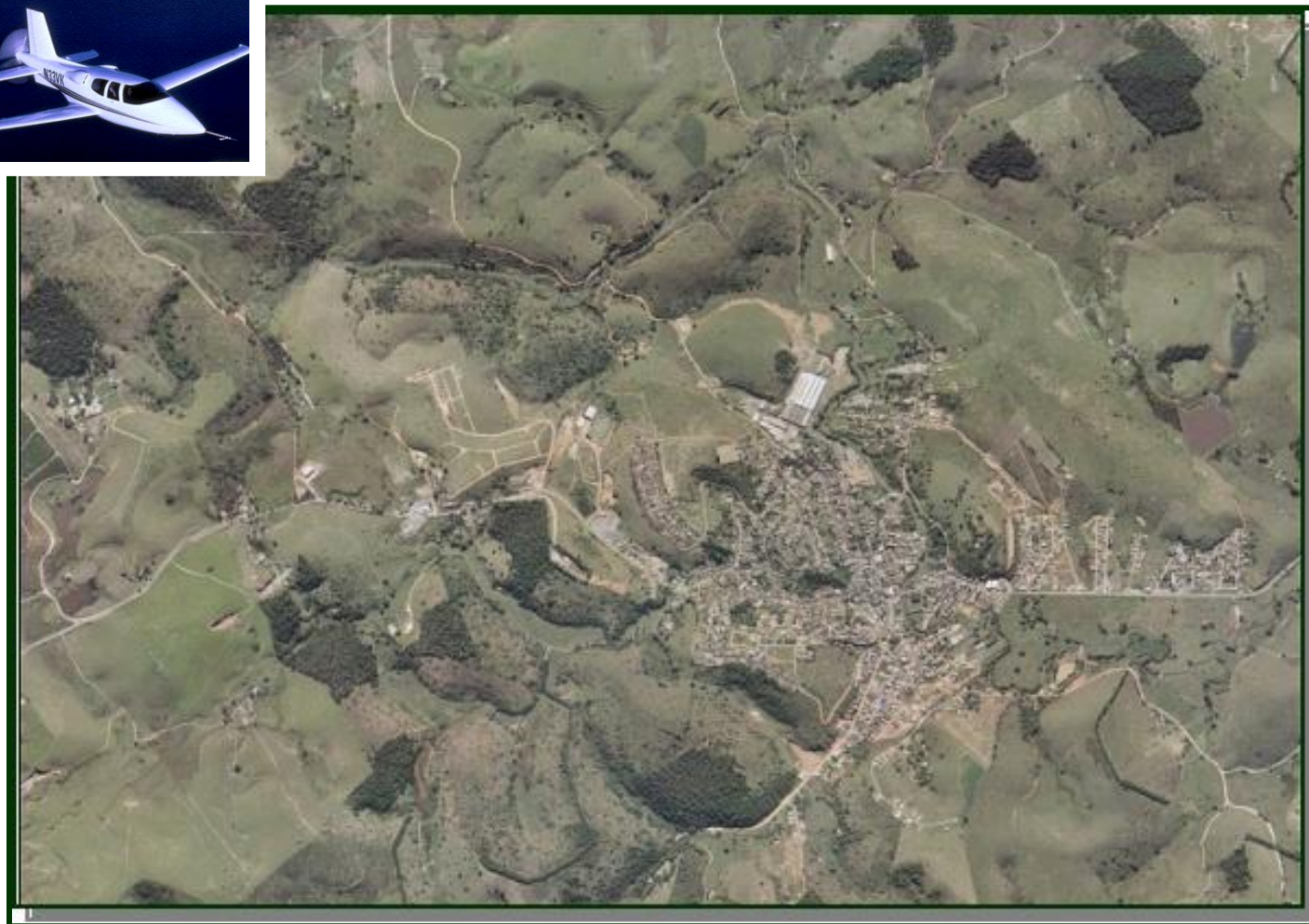
76,192 rural



Municipalities with less than 20,000 inhabitants covered by imagery in the 2010 Census Mapping Project



Orthophotograph



Pirapetinga, MG
From Ortophoto

Orbital image from Google Earth



Marechal Thaumaturgo - AC

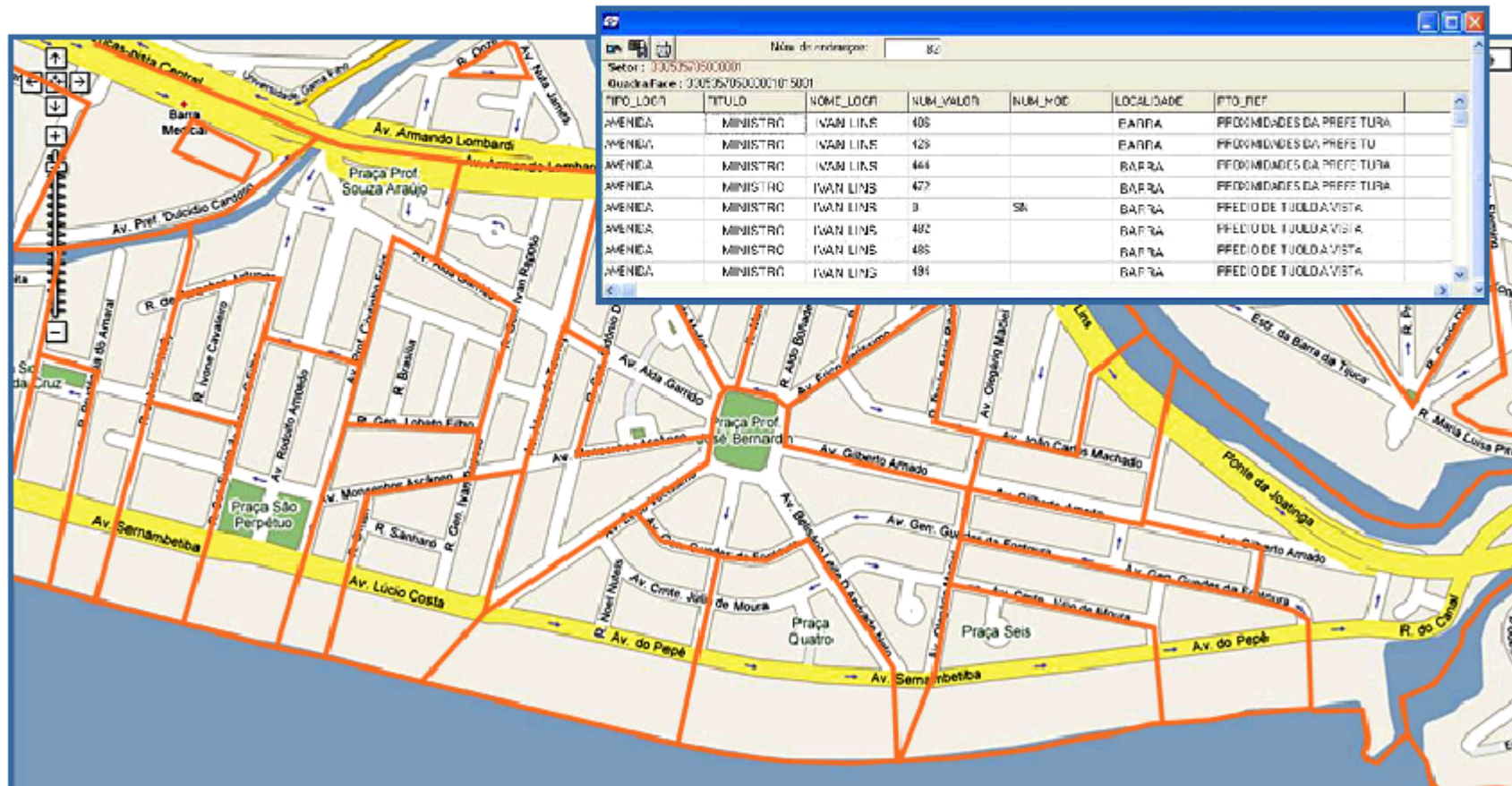
Orbital image from ALOS satellite



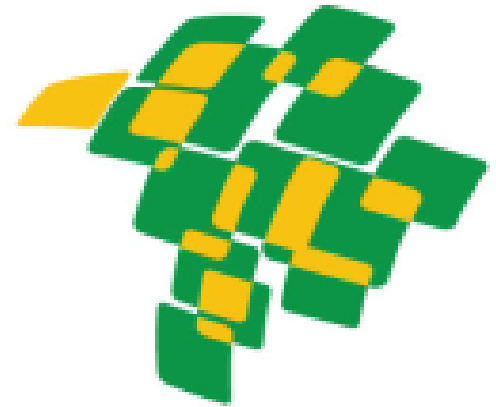
Cabo Frio - RJ

Municipalities with more than 20,000 inhabitants

1562 Municipalities - acquisition of urban vector bases from Mapping companies



- Established by Presidential Decree 6666 of November 27, 2008
- Coordinated by the National Commission on Cartography – CONCAR
- Used as reference for the National Open Data Infrastructure of Brazil (INDA)
- Industry has a role to be played, as indicated in the Decree

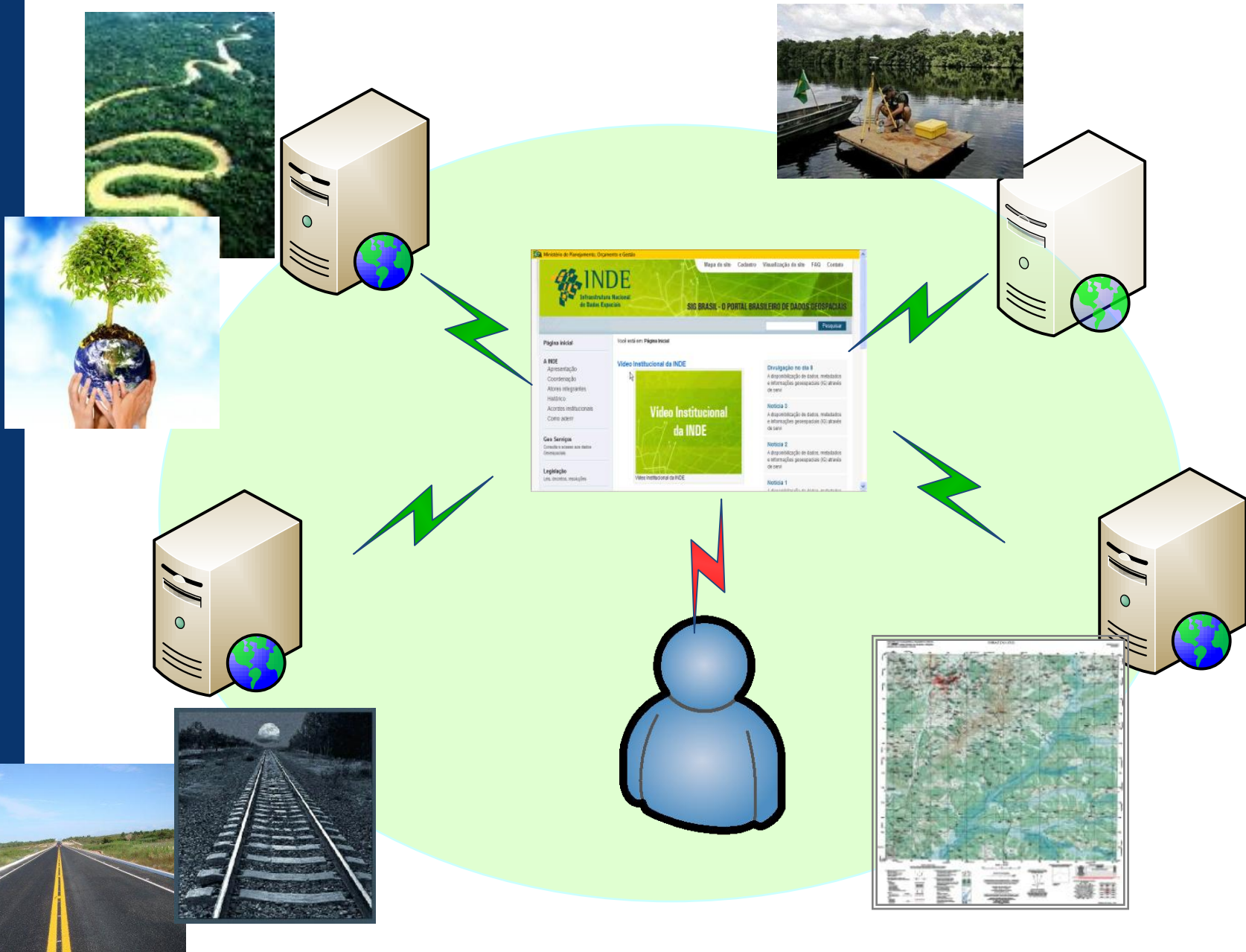


THE GOALS

- To promote the proper generation, storage, access, share, dissemination and use of geospatial data produced at federal, state, and municipal level
- To promote the use of standards and specifications certified by the National Commission on Cartography – CONCAR
- **To avoid duplication of efforts and waste of resources in obtaining geospatial data by public administration bodies**



GI Production and Use Context in Brazil – After INDE



CONCAR
(Superior Council)

CINDE
(Technical Committee)

Coordinates the INDE implementation

139 members from 32 institutions

- Management
- Standards and Specs
- Data and Metadata
- Technology
- Capacity Building and Training
- Dissemination



Current status

✓ Available applications

- INDE portal: www.inde.gov.br
- Metadata catalog
www.metadados.inde.gov.br
- Visualization tool
www.i3geo.inde.gov.br



✓ Available data and metadata

- Metadata: 5320 documents of 3 institutions
- Data: ~150 WMS services

✓ Access statistics

- Metadata catalog: 1,800,000 hits per month

INDE - Infraestrutura Nacional de Dados Espaciais - Windows Internet Explorer

http://13geo.inde.gov.br/13geo/aplicmap/geral.htm?9d9d0a358569f3aff4528670f38

Yahoo! Search

Arquivo Editar Exibir Favoritos Ferramentas Ajuda

INDE - Infraestrutura Nacional de D...

Página Ferramentas

Mapa +Temas Legenda Links

Interface Arquivo Janelas Análise Ajuda?

Busca rápida...

fixo

www.inde.gov.br

Action Plan to INDE Implementation
(Portuguese, English and Spanish):

<http://www.inde.gov.br/?p=896>

Geodesy

Data or Product	Metadata registered?	Format	Service availability
Redes Planimétrica, Altimétrica e Gravimétrica (BDG - Banco de Dados Geodésicos)	Yes	WMS and link to IBGE website	2nd Sem 2012

Geography

Data or Product	Metadata registered?	Format	Service availability
REGIC - Arquivos Vetoriais; Pranchas do Atlas Nacional	Yes	WMS	available

Topographic Mapping

Data or Product	Metadata registered?	Format	Service availability
BCIM	Yes	WMS	available
RR100	Yes	WMS	available
BC250	Yes	WMS	2nd Sem 2012
Modelo Digital de Elevação Nível 1 - (1:25.000 e 1:50.000)	Work in progress	WMS	2nd Sem 2012
Modelo Digital de Elevação Nível 3 - (1:250.000)	Work in progress	WMS	2nd Sem 2012
Ortofotomosaico nível 1 (fotografia aérea)	Work in progress	WMS	2nd Sem 2012
Mapa Índice	Work in progress	WMS	2nd Sem 2012
Ortomosaico ótico nível 2 (AVNIR - PRISM - Spot)	Work in progress	WMS	2nd Sem 2012
Ortomosaico ótico nível 3 (LANDSAT - CBERS)	Work in progress	WMS	2nd Sem 2012
Ortomosaico Radar (PALSAR)	Yes	WMS	2nd Sem 2012

Census mapping

Data or Product	Metadata registered?	Format	Service availability
Malha Municipal	No	WMS	2nd Sem 2012
Malha Distrital	No	WMS	2nd Sem 2012
Malha Subdistrital	No	WMS	2nd Sem 2012
Malha Setorial	No	WMS	2nd Sem 2012

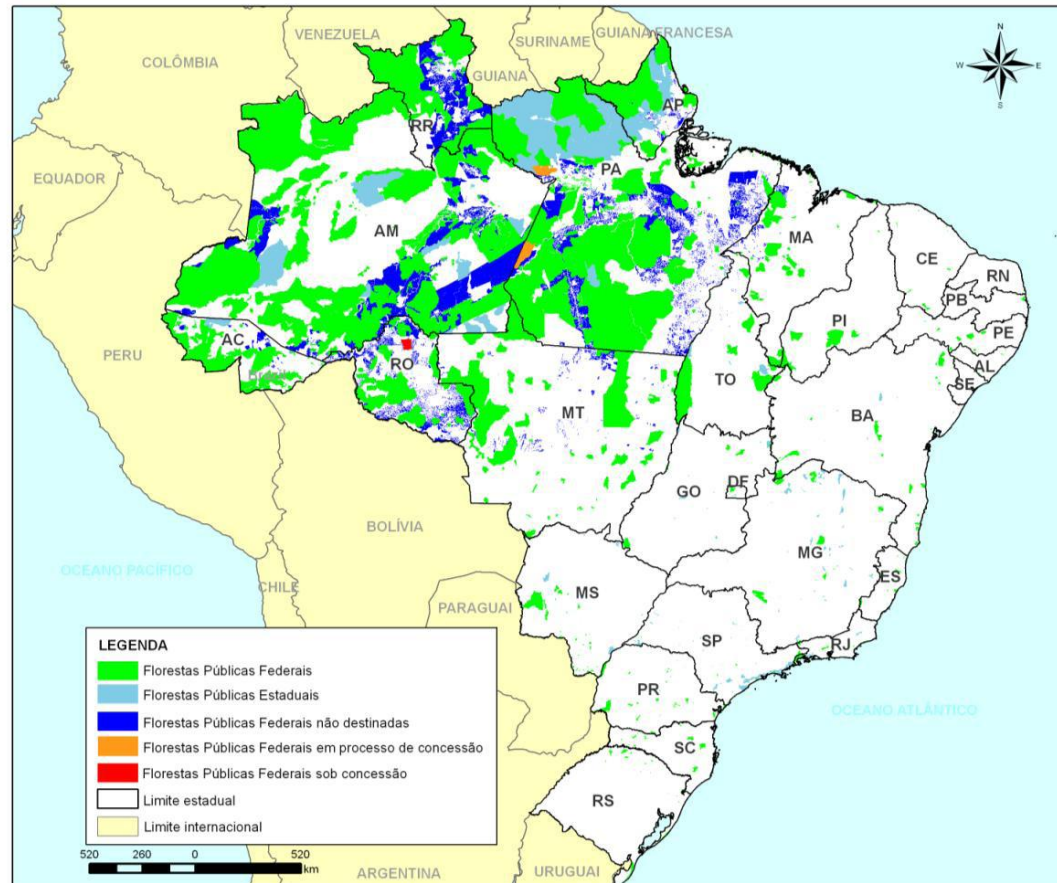
Thematic data – Natural resources

Data or Product	Metadata registered?	Format	Service availability
Biomass 1 : 5.000.000 BR	No	WMS	2nd Sem 2012
Geomorfologia 1 : 250.000 AML	No	WMS	2nd Sem 2012
Vegetação 1 : 250.000 AML	No	WMS	2nd Sem 2012
Vegetação 1 : 5.000.000 BR	No	WMS	2nd Sem 2012
Cobertura e Uso Estadual e 1:250.000 AP, AC, RR, RS, PA e SE.	No	WMS	2nd Sem 2012
Geologia Estadual AML (-MA)	No	WMS	2nd Sem 2012
Geomorfologia Estadual - AML (- MA)	No	WMS	2nd Sem 2012
Hidrogeologia 1: 2.500.000 R. Nord.	No	WMS	2nd Sem 2012
Hidroq./Hidrogeo Estadual PB e RN (4)	No	WMS	2nd Sem 2012
Hidroq./Hidrogeo. 1 : 250.000 (22 folhas) SB24 e SB25	No	WMS	2nd Sem 2012
Hidroquímica 1: 2.500.000 R. Nord.	No	WMS	2nd Sem 2012
Pedologia Estadual - AML (- MA)	No	WMS	2nd Sem 2012
Vegetação Estadual AML (-MA)	No	WMS	2nd Sem 2012

Example of INDE Use by Public Sector

Annual Forest Concession Plan (PAOF) describes the public forests to be submitted to concession processes by the Ministry of the Environment (MMA)

Developed using IBGE 1:1,000,000 basemap (available at INDE)



Fonte: CNFP/SFB, março 2010; IBGE/DGC, 2010 (a).

GeoPR – Geospatial Information Supporting System GSI - Institutional Security Cabinet of the Presidency

Presidência
Presidência da República Federativa do Brasil

Gabinete de Segurança Institucional da Presidência da República
SAEI - Secretaria de Acompanhamento e Estudos Institucionais

pesquisar... OK

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GeoPR

Ter, 05 de Outubro de 2010 16:47



GeoPR é um sistema de informação geo-espacial de apoio à decisão. Sua base de dados é composta por informações geoespaciais, originadas pelos órgãos competentes no âmbito da Administração Pública e por análises e pareceres relativos ao acompanhamento de Temas e Subtemas de Segurança Institucional, atualizadas no sistema pelo GSI-PR (SAEI e ABIN). Possui funcionalidades que permitem realizar consultas e análises espaciais, associadas a análises e pareceres.

Link de acesso para Analistas e Coordenadores.
[Link de acesso para os demais usuários.](#)

ArcGIS for INDE

Supporting INDE standards

*In partnership with:
Diretoria de Serviço Geográfico
(DSG)*

Adapting ArcGIS system to INDE standards will benefit for:

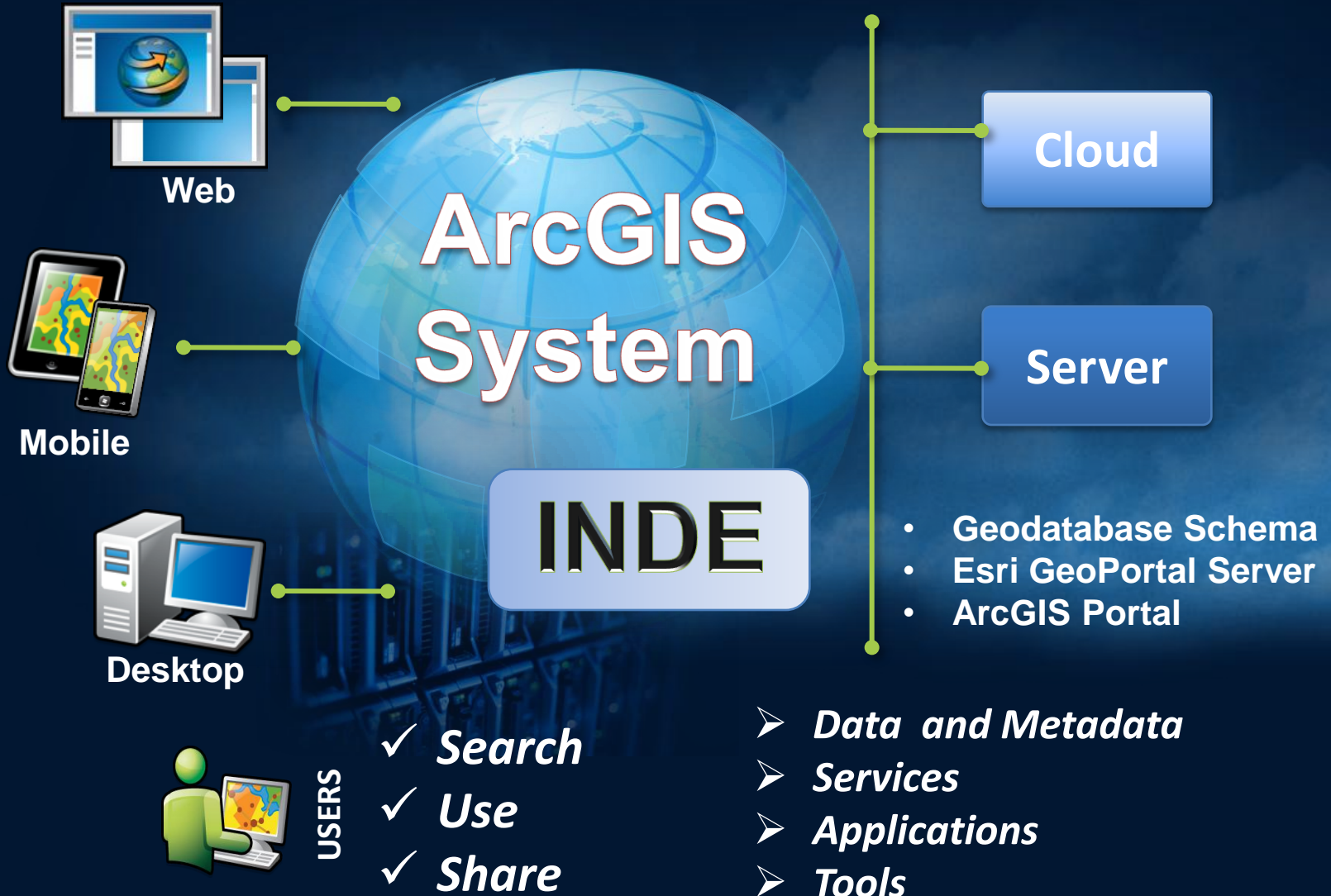
- Saving resources. Freely available data models.
- Increasing productivity in data conversion and editing for INDE standards.
- Increasing productivity in the use and sharing of data in INDE standards.
- Greater speed and ease of adoption of the standards across the community.



Making a Difference

Aligned with similar Esri initiatives in Europe and North America

ArcGIS for INDE

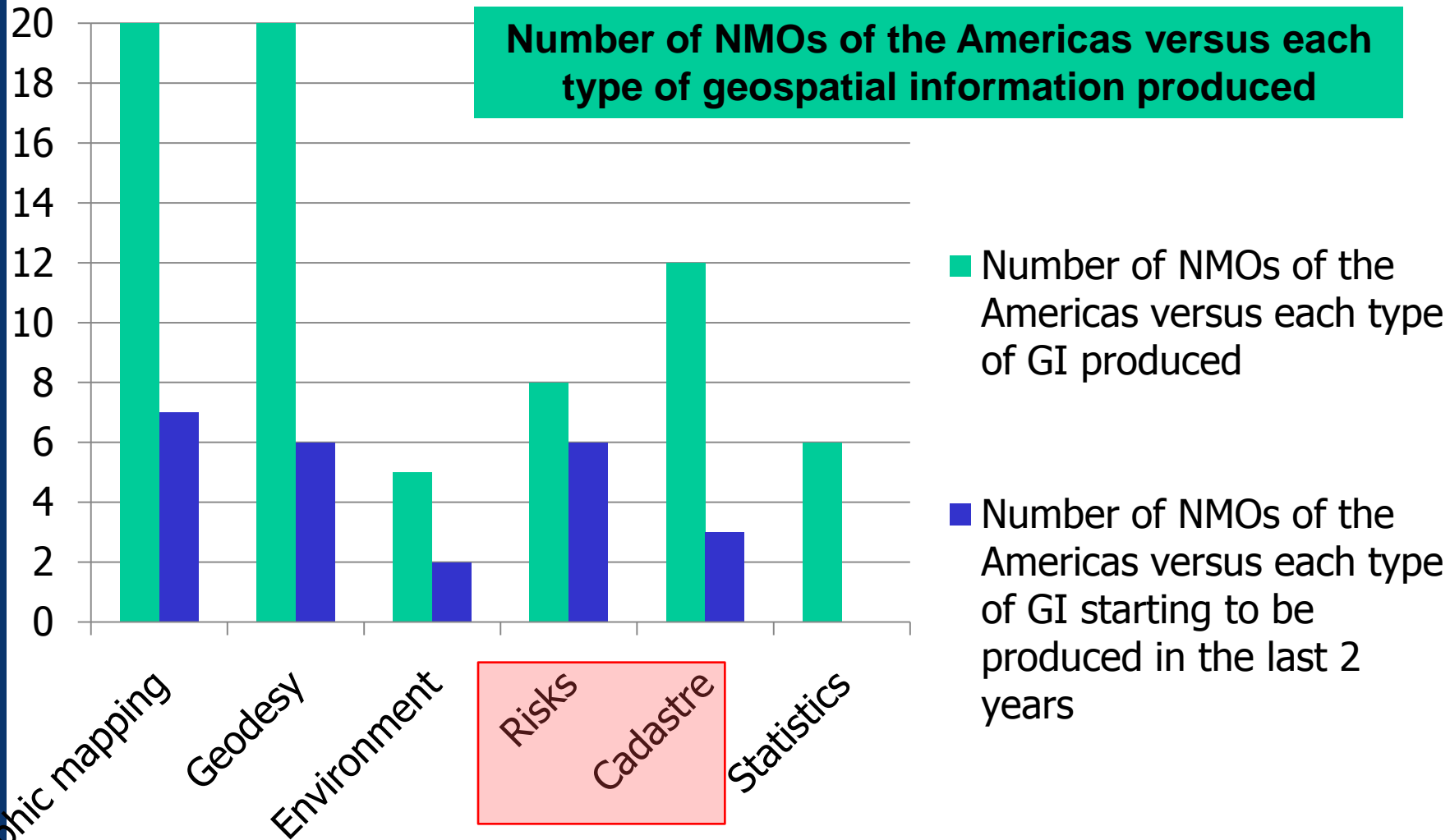


Brazilian Federal Law 11527 of Nov 18, 2011

- Regulates the access to public information in Brazil based on principles of transparency of public administration
- Art. 12: access to data is free

Brazilian open data website

- <http://beta.dados.gov.br>



Topographic mapping

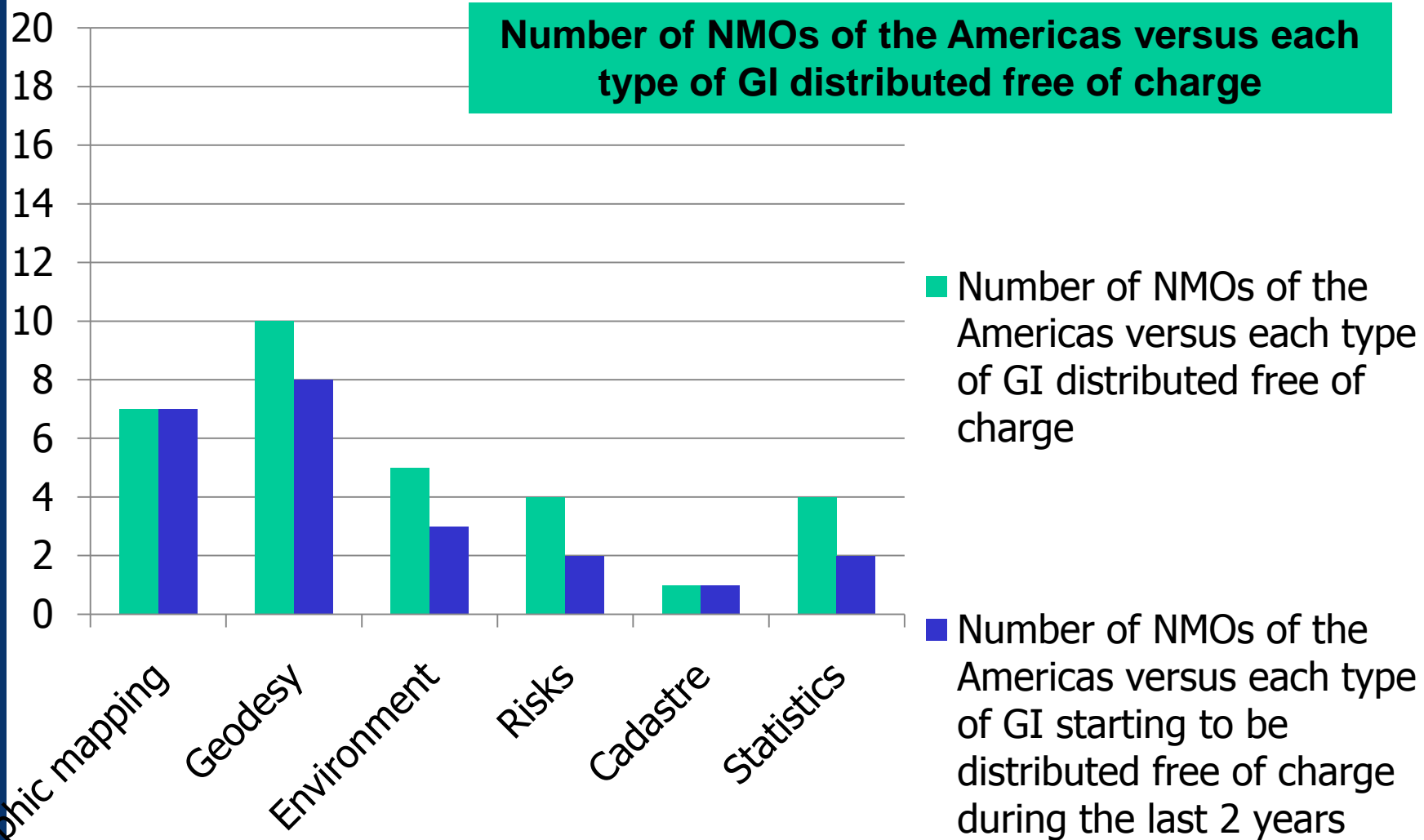
Geodesy

Environment

Risks

Cadastre

Statistics



- **Applied to direct public administration entities, to public foundations, to public companies, and to entities directly or indirectly controlled by the Union, States, Federal District and Municipalities**
- **PPP Managing Committee (CGP), composed by the Ministry of Planning (as Coordinator), Ministry of Finance and Ministry of Civil Affairs**

Projects under public bid

- **Datacenter Project (Banco do Brasil and Caixa Econômica Federal)**
- **Pontal (Pernambuco)**

Projects being analyzed

- **Digital Public TV Network**
- **Brazilian Geostationary System**
- **Baixio do Irecê**
- **Salitre Project**

The Brazilian Geostationary Satellites (SGB) are being jointly developed by Empresa Brasileira de Aeronáutica (Embraer), which is private, and by Telebras, which is public

Telebras will use SGB to improve the National Wide Band Plan, which proposes to amplify the use of high speed Internet in Brazil



- ✓ Private companies have participated in the geospatial data production in Brazil since the 60's
- ✓ Responsibility of data production still heavily relying on government institutions in Brazil
- ✓ Data providers to benefit from SDIs, either by using data available for producing other data, either by avoiding overlap of efforts and by optimizing resources
- ✓ Private companies to benefit from SDIs, either by using data available, either by providing new services to clients
- ✓ There is a Legal Open Data framework in place in Brazil, in the general and in the NSDI contexts
- ✓ Situation in the Americas shows trend of producing risk and cadastre data, as well as of open data policies, based on the results of the 2011 questionnaire
- ✓ PPP in Brazil still at the first stages and must properly address the constraints and rules that generally govern the relationship between the involved parties. At the same time, it may help fostering the development of a SDI



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Thank you!