

QUESTIONS

Please respond with the information requested and return by e-mail or fax as indicated at the end.

1. NAME OF NATION: BRAZIL

2. Name of Person Supplying Information: **Gilberto Camara**

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3. Does your nation have an active or proposed initiative for developing a national spatial data infrastructure (or its equivalent)? YES

If the answer is NO, please return the questionnaire now to onsrud@spatial.maine.edu

If the answer is YES, please respond to all remaining questions.

**** POLICY ISSUES ****

4. LEADERSHIP: *Which agency or organization is coordinating or leading national spatial data infrastructure (NSDI) development efforts in your nation? (If no single agency is coordinating, please provide a primary point of contact from whom we may learn more.)*

Agency/Organization Name: **Ministry for Science and Technology/Information Society Program**

Homepage (in English): <http://www.socinfo.org.br/english/index.htm>

Mailing Address:

E-mail Address: **Tadao Takahashi (tadao@na-cp.rnp.br)**

Telephone Number:

Fax Number:

Name of Agency Head or Primary Contact Person: **Dr. Tadao Takahashi, Information Society Program Coordinator, Ministry of Science and Technology**

COMMENTS:

The Brazilian Government, through its Ministry for Science and Technology (MCT), has launched in 2000 a national initiative for improving the nation's use of information technology.

The program is called "Sociedade da Informacao" (Information Society), and is considered to be a top priority for MCT. Although the program is not specific to spatial data, it does consider that the use and dissemination of spatial information is an important part of its goals. Through personal discussions with the co-ordinators, it is clear they consider establishing an NSDI an essential part of their programs. However, not specific action towards an NSDI has been established as of this response (October 2000).

Meanwhile, there are also other government agencies and committees which are active in different aspects of establishing an NSDI for Brazil. Much of this work is un-coordinated, although there are technical contacts within these organisations.

Some of the more relevant organizations are:

- **IBGE (Brazil's Bureau of Census):** is responsible for a large number of spatially-bound data collection, including the population census (held every 10 years, hence in 2000), and a multitude of socio-economical indicators. Currently, IBGE is increasing the amount of data which is available (both off-line and on-line) and all of its 2000 Census data collection is being automated (including the boundaries of the census tracts). IBGE's web site contains a significant amount of data: www.ibge.gov.br.
- **DATASUS (Ministry of Health Information Service):** is responsible for processing data concerning health indicators, including all health services claims (in Brazil, the government health system is unified and based on the principle on free access for all). DATASUS makes available in its website a large number of datasets of spatially-related information and a simple mapping tool (TABWIN).
Website: www.datasus.gov.br
- **CPRM (Brazil's Geological Survey):** CPRM is very active in collection and dissemination of spatial data sets, and is committed to the use of FGDC metadata standards, to the extent of having develop special software for data entry. CPRM is making available some data sets on its website: <http://www.cprm.gov.br/ingles/index.html>.
- **INPE (National Institute for Space Research):** INPE is responsible for different activities including: (a) operation of a remote sensing ground station (receives LANDSAT data since 1974 and SPOT data since 1986), forming one of the largest archives of RS data in the world; (b) development of software technology for GIS and RS, the SPRING system, arguably the most complete freeware available worldwide; (c) a graduate program in RS and GIS, including associated research; (d) a numerical weather prediction and climate center (CPTEC), based on a supercomputer, which issues forecasts and climate analysis, with many products available online; (e) Development of remote sensing satellites, including the CBERS series of satellites, built in cooperation with China. INPE's websites: www.inpe.br (main), www.dpi.inpe.br/spring (SPRING) and www.cptec.inpe.br (CPTEC).
Contact point: Dr. Antonio Miguel Monteiro, Image Processing Division (miguel@dpi.inpe.br).

5. AVAILABILITY: *What are the primary types, categories or forms of spatial digital data being made available through your nation's NSDI?*

In keeping to the preceding question, there is a large diversity of data, but a lack of co-ordination, making the response incomplete. Nevertheless, some data sets may be mentioned:

- **Political division of Brasil (at the county level):** CDROM available from IBGE (as ARC/INFO coverages)
- **Census and socio-economical data (on a county level):** available from IBGE (website and CDROMs)

available as data tables (but indexed by unique county id)

- Remote Sensing Images (LANDSAT, SPOT, CBERS, RADARSAT and IKONOS): available through INPE and also through private representatives of commercial vendors.
- Health data sets (available from DATASUS at the county-level).

All of Brazil's counties (and its subdivisions, including boroughs and census tract) have a unique identification, controlled by IBGE. Therefore, many agencies (such as DATASUS) rely on this situation to disseminate tables indexed by county id.

6. MECHANICS OF ACCESS: Through what technical and organizational mechanisms are spatial data being made available through the NSDI?

As previously stated, each organization develops its own policy for data dissemination. A general pattern is that data with lower commercial value (such as county-wide data) is made accessible on the Internet or through CDROMs.

7. LEGAL AND ECONOMIC FRAMEWORKS FOR ACCESS: What are the legal and economic constraints under which citizens, businesses or others may gain access to data available through the NSDI?

Currently, there is no specific regulation regarding the dissemination of spatial data in Brazil, a situation which is causing much confusion amongst all involved parties. Brazil has a so-called COMCAR (Commission for Cartography), largely dominated by the military and by local aerophotogrammetry companies (which ran a cartel-like business during the military regime). The only piece of legislation that could apply to the NSDI is the so-called "aerophotogrammetry regulation", described in what follows.

The current "aerophotogrammetry regulation" is Government Decree N° 2.278, 17 July 1997, signed by president Cardoso and by the Army Commander, which regulates the activities of data capture by air surveys. It requires any company willing to carry out air surveys to register at the EMFA (Joint Chiefs of Staff Command, in Portuguese, Estado-Maior das Forças Armadas), and limits the participation of foreign companies. This legislation is felt by the community to be a legacy from the military regime (1964-1985) and some acrimonious public debate has taken place between members of the GIS community and EMFA representatives. It is to be expected that this legislation is to be gradually adjusted.

As regards dissemination of spatial data sets, there is an on-going debate on to what extent Brazilian copyright legislation would apply to spatial data, especially in the case of public maps which have been digitized (and sold) by private companies. These companies argue that they are providing value-added services and some government officials argue that copyright laws do not allow this interpretation. It should be noted that Brazilian copyright law is a very stringent one, partially because it was introduced in 1998 by strong US pressure. At the time, American government was accused by Brazilian opposition to be siding with pharmaceutical and software companies, and to have forced upon Brazil a regulation which preserved US interests at the expense of legitimate Brazilian interests.

8. DATA COLLECTION COORDINATION: *What parties are involved in collecting data for the NSDI and how is data collection coordinated?*

There is no central co-ordination of the data collection in Brasil.

9. PRICING: *If charges are assessed for spatial data made available through the NSDI, what is the basis or method for determining the price of various forms of spatial data?*

This is a much unclear issue at present. Currently, non-spatial census data is sold at a price which is not accessible to small companies, and university research can obtain this data for free, if they have

a working arrangement with IBGE (the Bureau of Census). Some private companies are selling value-added products based on maps and data originally produced by government agencies. However, since current legislation is not in place to establish the legal boundaries for such actions, many government officials felt threatened and are suspicious of the role private companies play.

10. COMMERCIAL INVOLVEMENT: *Please describe how private commercial firms are involved in helping to build the NSDI.*

(see above)

11. PUBLIC DOMAIN DATA SETS: *Please describe those digital spatial data sets for jurisdictions within your nation that are available to anyone without any licensing or intellectual property restrictions imposed on the data sets and the data sets are available at no cost or little cost. How may copies be acquired of these public domain data sets?*

These data sets include:

- Digital maps of Brazil (1:250.000 scale) by IBGE**
- Census data at county-level by IBGE**
- Health data from DATASUS (ministry of Health data collection agency)**

12. PUBLIC GOODS ASPECTS OF NSDI: *Please describe any additional services or goods provided by government in support of the NSDI for which individual users are not charged.*

The government, through its National Institute for Space Research (INPE), provides a free GIS and Image Processing software (SPRING), which contains a substantial functionality for processing spatial datasets.

13. PRIVACY: *Please describe how the information privacy of individual citizens is protected relative to data that may be accessed through the NSDI.*

**** OPERATIONAL ISSUES ****

14. AUTHORITY: *Do the laws or formal orders of any legislative or executive branches of government explicitly recognize the need to establish or further develop the NSDI?*

YES, through the "information society" program (www.socinfo.org.br) of the Ministry for Science and Technology.

15. FUNDING: *Have funds been specifically budgeted and acquired for NSDI activities?*

NO, there are general funds for the "information society" program

16. INCLUSIVENESS: *Please describe the types and extent of participants involved in building the NSDI and their roles.*

(see answer to item 4).

17. COMPONENTS: *Please indicate whether the vision of an NSDI for your nation incorporates the following components or concepts.*

- A. METADATA **YES**
- B. CLEARINGHOUSE **YES**
- C. DATA STANDARDS **YES**
- D. CORE DATA **YES**

18. RESEARCH: *Have funds been specifically budgeted and spent on research projects to advance NSDI concepts? <Please answer YES or NO.>*

If YES, please describe the types of projects that have been funded.

NO

19. LINKAGE TO GENERAL INFORMATION TECHNOLOGY STANDARDS - *Which international or national information and communication technology standards has the NSDI adopted?*

Internet (TCP/INP_

20. GLOBAL SPATIAL DATASETS: *Does your NSDI provide access to spatial datasets with global coverage?*

NO

21. GLOBAL OR REGIONAL INFRASTRUCTURE INITIATIVES: *Is your NSDI formally affiliated*

with or connected to any global or regional spatial data infrastructure initiatives? <Please answer YES or NO.> **NO**

22. LONG TERM VISION OR STRATEGIC PLAN: *Has a long term vision statement or strategic plan been developed for your country's NSDI?* **NO.**

If YES, how may a copy be obtained?

23. GRAND CHALLENGES: *Name one of the most pressing challenges for NSDI development in your nation.*

In recent years, much progress has been achieved in the availability of on-line spatial information in Brazil. However, two key issues are yet to be resolved: (a) An official policy on the ownership, costs and royalties associated with government-collected data sets; (b) A nation-wide standard for the exchange of spatial information.

24. FURTHER INFORMATION: *If an NSDI WEB SITE exists where information about NSDI efforts in your nation may be found in the future, please provide the web site address.*

Please look at the homepage of the "information society" program (www.socinfo.org.br) of the Ministry for Science and Technology.