

Brazil remote sensing applications in water resources management and irrigation



1. THE CLIENT

2. SUGGESTED APPLICATIONS

OUR CLIENTS

- At federal and state level
 - Water agencies: ANA and state agencies
 - Regional development agency: CODEVASF (irrigation)
 - Ministries involved in WRM
- A particular focus on semi-arid Northeast Brazil (drought and floods) and south-east
- Growing attention to planning and management of water resources (quantity and quality)
- Strong institutional collaboration with meteorological agencies, universities etc.
- Bank support towards integration of water sub-sectors



Brazil

- **Federative Republic**
- **26 States**
- **1 Federal District**
- **5,564 Municipalities**
- **8,514,877 km²**
- **12 % of the world water availability**
- **12 hydrographic regions**
- **192 million inhabitants**

APPLICATIONS WRM

- Ceará state: strong institutional framework
- Reducing vulnerability to flood hazards
- Drought: water rights enforcement and allocation
- Eutrophication of water bodies
- Drought indices and insurance mechanisms
- Land degradation and impact on hydrology
- → high operational, institutional and socio-economic impact

USE OF SATELLITE DATA - FUNCEME

METEOROLOGY, ENVIRONMENT & WATER RESOURCES

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CBERS



26 dias

LANDSAT



16 dias

ASTER



16 dias

SPOT 5



26 dias

APPLICATIONS

Monitoring

Infrastructure (Reservoir Survey) Landuse/Land Degt.	Weather Fire NDVI
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Data Assimilation

Hydrologic Modelling	Weather Numeric Models
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Experimental Studies

Experimental Basin (SMOS) – Validation of Satellite Products	Land – Atmosphere Interaction
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Zoning

Geoenvironmental Ecological	Agriculture Economical
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Thematic Mapping

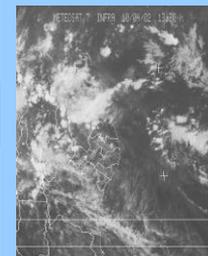
Geology Land Degradation	Vegetation Soil Basin
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NOAA



1 hora

METEOSAT



15 min

APPLICATIONS IRRIGATION

- Irrigation development in São Francisco River Basin
- Satellite imagery to support complex multi-disciplinary work (I&D, WSS, environment, infrastructure and social services)
- Hydraulic modeling
- Territorial planning within irrigation schemes
- Cadastre of irrigation users
- CODEVASF and water users' associations