The Efforts of Building GIS Infrastructure in a Newly Independent State: The case of Timor Leste

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Where is Timor-Leste?
Outline

• A Southeast Asian Country
• Size: 15,000 sq. km
• Mainly mountainous, with small plains
• Tropical monsoon climate
• Population: around one million
• Capital city: Dili
• Economy: Agriculture (Coffee, sandalwood), Offshore oil and gas
• 13 Districts, 65 Sub-districts and 442 Sucos (Villages)

History

• -1600: Small kingdoms recorded
• 1611-1975: Portuguese colonization
• 1975: Indonesian occupation and administration
• 1999: Referendum on independence
• 2002: Independence (20 May)
• 2009: Eight year from independence
2. GIS Infrastructure

### GIS development Chronology

- **1990s**, Second Land Resource Evaluation and Planning Project (LREP-II), ADB funded  
  – First GIS application, during Indonesian period
- **2000-** Various supports from UN, Int’l Organizations and bilateral donors,  
  – Transitional period and independence period
- **2006:** Interrupted by internal conflicts  
  – Support Resolution at 17th UNRCC-AP
- **2007-:** Resume of GIS development with international supports.

### Policy Overview

- No comprehensive legal framework for GIS infrastructure development (e.g. NSDI law)
- Bill on land registration and cadastral system is being prepared.
- DNTPSC, Ministry of Justice is responsible for national cadastral and geographic information system.
- No official coordination body for GIS policy, but
- GIG (Geographic Information Group) is virtually the national coordination body  
  – Experts from Gov., UN and Intl. Organizations etc.
3. Major activities

DNTPSC, Ministry of Justice

- Cadastral surveys for determination of location and size of parcels for development and use.

Sample

3. Major activities

DNTPSC, Ministry of Justice

- Maintain framework geographic dataset
  - Topographic Map
  - Aerial photograph
  - Geodetic networks
  - Distribution to users
DNTPSC, Ministry of Justice

- Contribution to National Development Strategy
  - Prime-Minister’s Office
  - Providing thematic maps for consideration

- “Ita nia rai(Our Land) ” Project
  - Establish land registration system
    - Legal and technical (cadastral) base
    - USAID supported

- Boundary Demarcation survey
  - Joint survey with Indonesian side

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DNTPSC, Ministry of Justice

- External support made so far
  - Australia: Air photograph, 1:50,000 topographic map
  - Germany: Website, foreign scholarship
  - Japan: 1:2,000 topographic map for Dili, training, equipment
  - Portugal: National Geodetic framework, Geographic Information portal site
  - US: Land Registration System
Other institutions

- Ministry of Agriculture
  - ALGIS: Agricultural and Land Use GIS
  - Sustainable land management with UNDP
- Ministry of Finance / UNFPA
  - GIS support for census implementation
- Ministry of Health / WHO: Health GIS
- Ministry of Education: School GIS
- Ministry of Infrastructure: Road database
- WFP: Food security and logistics
- UNMIT (UN Integrated Mission in East Timor): GIS for UN operation

Capacity building

- Generous supports from donors and international community
  - Development of many datasets
- Yet severe lack of human and institutional capacity
  - develop, store, revise, distribute GIS data.
- Training (External and internal) still required
- Possibility of using existing resources
  - Knowledge of residing UN and International organizations can be transferred to Timor-Leste side
Towards a NSDI

• Achievements so far
  – UTM 51 S, WGS84, GI portal
• Still required for effective and efficient GIS infrastructure
  – Standardization
  – Centralizing metadata and feature catalogues
  – Facilitate data exchange and dissemination, revision of GIS portal
  – Formalized national coordination body

Administrative boundary

• No legitimated administrative boundary data
  – Various versions lead confusion
  – Potential cause of land disputes
  – Misconduct of administration works (census, election)
• Approaches for solving the problems
  – Lobbying, information sharing
  – Cooperation with Ministry of State Administration
  – Project configuration, seeking funds
4. GIS issues

Border demarcation

• Clear national border demarcation between Timor-Leste and Indonesia for
  – Maintaining security
  – Facilitate the movement of people and goods
  – Effective natural resources management
• Continuing joint efforts are
  – Resolve contested sections
  – Border marker installation, survey and maintenance
  – 1:25,000 mapping in the border area
  – Establishment of gazetteers

5. Conclusions

Conclusions

• Efforts have been made, but national capacity is still low.
• Priorities are
  – Sufficient technical capacity development
  – Overall coordination of GIS infrastructures
• Timor-Leste thanks the supports of UNRCC-AP countries and international communities