

Some Experience of IGN France International Department in Land Administration

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Key words: Asian countries, Indonesia, Cambodia, Sri Lanka, land administration, registration, valuation, Geographical Information System.

SUMMARY

In Sri Lanka (2002-2003):

The ALIS purpose is to illustrate how a GIS can help municipal authorities.

I.e. in fact to integrate data of different sources, to create a set of topographic and thematic maps, as well as a prototype application for Public parcel management in Survey Department.

In Cambodia (2003-2004):

This project will consist in collecting all the data information from the Cadastral Office, the Land Registration Office and the Municipality of Phnom Penh, organising all these data in a DBMS (both the graphical and the alphanumerical data), shipping the data off to the web server, implementing the file browsing service in favour of the public by Internet, setting up the update of this real estate information by Intranet.

In Indonesia (2003-2004):

This project will allow to create an evaluation methodology on the Sleman pilot area, with the BPN (Badan Pertanahan Nasional, in order to contribute in the long term, to the improvement of the land resources quality.

RESUME

Au Sri Lanka (2002-2003):

Le but du projet ALIS est d'illustrer comment un système d'information géographique peut aider les autorités d'une ville. En fait c'est intégrer différents types de données, provenant de différentes sources, créer un ensemble de cartes thématiques et créer un prototype pour la gestion des parcelles publiques au sein du Survey Department.

Au Cambodge (2003-2004):

Ce projet consistera à rassembler des informations provenant du bureau du cadastre, du bureau de l'enregistrement et de la municipalité de Phnom Penh. Ces données seront organisées dans une base DBMS, et utilisées au sein d'un serveur Web, en faveur du public. De plus les données immobilières seront mises à jour en utilisant le mode Intranet.

En Indonésie (2003-2004):

En ce moment, nous travaillons sur la création d'une méthodologie sur l'évaluation des biens sur la zone pilote Sleman, avec le BPN (Badan Pertanahan Nasional), dans le but de contribuer sur du long terme à l'amélioration de la qualité des ressources foncières.

Some Experience of IGN France International Department in Land Administration

Christelle FAIVRE, France

1. FRANCE INTERNATIONAL DEPARTMENT AND THE LAND ADMINISTRATION

IGN France International Department, depends on the French National Geographic Institute (IGN France) and it was established in 1986 to develop and promote IGN expertise internationally. IGN FI has now achieved world-wide recognition and is registered with the most important multilateral development banks and, on an annual basis, it carries through about a hundred geographic engineering projects in some fifty countries. For this, it relies largely on a network of technical partners with recognised expertise.

Areas of skills:

Geographic information, computer systems, cadastre, town and country planning, agriculture, environment, GPS, and others....

IGN France International Department and the land administration:

Since 10 years, IGN France International Department worked for an improvement of land administration in various countries:

A few recent references:

Country	Subject	Year
Sri Lanka	Land titling database setting up	2002-2003
Bolivia	Technical expertise for reorganisation of land register	2001
Slovenia	Land titling	2000-2002
Ivory Coast	Land information system	2000-2003
Laos	Production of photomaps	1998-2000
Guatemala	Preliminary study on land GIS, updating of 20 sheets	1998-2000
Cambodia	Setting up of Phnom Penh land information system	2002-2004
Romania	Expertise for the setting up of the national land register	1996-1998

IGN France International Department presents some experience in land administration practise in Asia countries.

2. SRI LANKA: ATTANAGALLA LAND INFORMATION SYSTEM- ALIS PROJECT - PROJECT ASIA IT

2.1 Background

Sri Lanka is a beautiful island in the Indian Ocean with a fabulous natural and cultural heritage. Its internal ethnic problems, however, have led to a two-tier (North/South) development of the country.

The current situation in Sri Lanka regarding mapping and GIS is as follows:

Maps in the northern part of Sri Lanka have not been updated for decades, due to the fact that field works are impossible.

Since 1902, the Survey Department of Sri Lanka has been the only national organisation responsible for producing large- and small-scale geo-information to its users. Small-scale topographic information has been produced in the standard map forms, on the scale of 1:63,360, 1:50,000 and 1:10,000. A new map series, on 1:50,000 and 1:10,000 scales, commenced in 1980. The former map series was completed in 1996, and about 20% of the latter have been completed to-date. Presently, the Department is producing only hard copy maps. With the advancement of computer technology, the present-day demand is for digital topographic information.

Various state institutions such as Forest Department, Geological Survey and Mines Office, Urban Development Authority, Telecommunication Department, Electricity Board, and various private organisations depend on the Survey Department for topographic information.

In 2001, the readability of maps depends a lot on the organisation of cartographic databases that can be easily used inside computerised systems, and the possibility to cross geographic information with any other kind of data or databases - such as census data, agricultural statistics, etc.

Furthermore, the task of "digitising and organising" the geographic data into a national data base that can be useful as a reference database for all kinds of application is a significant task. This requires an accurate knowledge about geographic database structure, the continuity of information throughout the territory, and the possibility of easy updating.

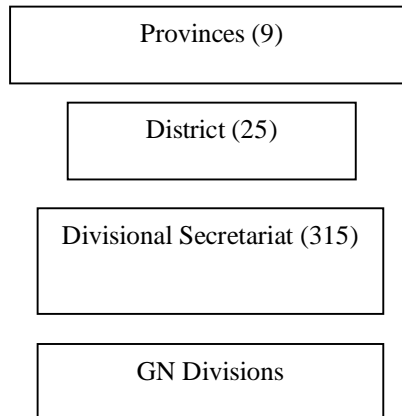
The knowledge to fill these gaps is currently available in Europe, and has been transferred to Sri Lanka via the A.L.I.S. project.

2.1.1 Right of land

The Survey Department and the Divisional Secretariat administration are in charge of the public parcel management. They are required by claimants who want to acquire or use public lands, either for housing or for cultivating.

We decided to create an application that can register public parcel occupancy and delimitation.

2.1.2 Cadastral administration



The Divisional Secretariat and the Survey Department do inventory of the public properties. Inventory of the private lands is done with the Land Registry in the form of deeds maintained at district level.

The cadastre is administrated at the district level like the land registry.

Survey department works only on the public area for cadastre. It is responsible to make the boundaries marking and to create the new sub-divisions on public lands.

The state land is inalienable and imprescriptible. But it is possible for people to request the Divisional Secretariat to have and occupy a piece of land, or different schemes implemented by the State.

2.2 Objectives of the ALIS Project

The ALIS purpose is to illustrate how a GIS can help municipal authorities. So in fact to integrate data from different sources, to create of a set of topographic and thematic maps, to create a prototype application for Public parcel management.

It's a land registration application designed as an example for land registration and database querying which can register public parcel occupancy and delimitation.

2.3 Partners

IGN France International Department: applicant

Sri Lanka partners: Survey Department

Survey Department of Sri Lanka is the principal partner and the major recipient of the project. It is an important service, well equipped, which control the various processes of creation and publication of topographic maps at various scales (1/500,000, ..., 1/2,000). It has a manpower of 700 people approximately and uses the varied means of numerical acquisition. Although a broad part of its production is currently entirely numerical, it did not install

centralised management tools that would allow maintenance, diffusion and an easier publication. The co-operation with the other public organisations is not very developed and currently limits to a supply of paper maps.

Survey Department depends on the Ministry of Land.

European partners: BEV Bundesamt für Eich – Und Vermessungswesen (Austria)

Their activities and services are: to carry out fundamental and legal metrology, geodesy and control survey, to provide data base for surveying and geo information systems, to administer the cadastre of real estate of the whole territory of the republic of Austria...

2.4 The different steps of this project:

1. Investigation in Sri Lanka (June 2002)
2. Transfer of technology: training program in France during 3 months on data base, land registration in France, land use (September to December 2002)
3. Development of a GIS data base and an application for the deed registration (November 2002)
4. Test and monitoring: finalisation of the application, field work, and data base updating (January to February 2003)

The contribution to the project:

Training of two experts in the fields of: GIS, Cadastre, Land Use database, photogrammetry

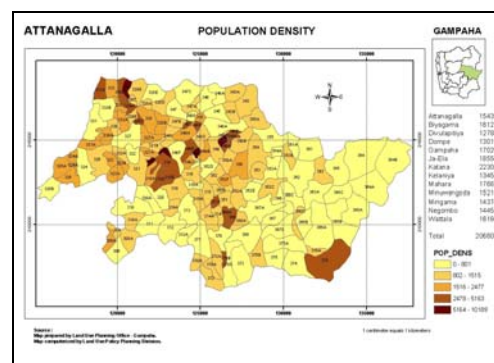
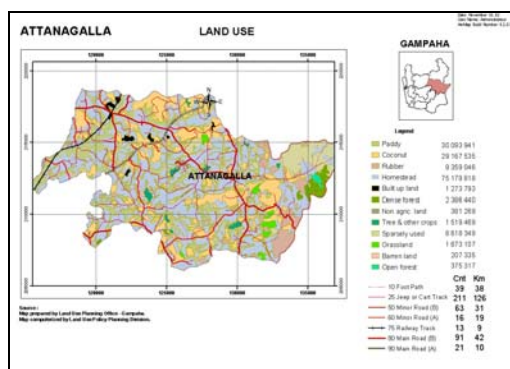
Building up of a reference GIS database on a pilot site

Building up of a draft application for public parcel management. Due to the lack of cadastre data in that Divisional Secretariat, the application will not be used as a production tool.

Hardware equipment for Survey Dept. and Div. Secretariat (PC, scanner, printer, UPS)

Software equipment: 2 license of archive GIS software.

2.5 Some Details on the Application



Software architecture:

The solution is based on ESRI product because Survey Department already has data in that format; they use ESRI products regularly so they have a good background on these products. The ALIS-PPM application will be constructed with the software components listed below:

- Access 2000 Database (Microsoft) for data storing
 - VBA programming language (Microsoft) for user's interface creation
- Map Object component (ESRI) for graphic viewing

This application uses:

Geographic data, tabular data, output products (reports on parcels, printed map using a template sheet).

Province : WESTERN District : Gampaha Div. Sec : Attanagalla

MAP: ATTANAGALLA MAP 11 Number : 0001 Block : 1

Claimant **Deed:**

Name: Sivanantharadja Number: 2 Date: 24/01/2003

Surname: SMKW Type: Mortgage

Number ID: C000000003 validity:

Address: 254, Baudhaloka Mawatha

PERSON/ORGANIZATION DEED Creation

Parcel/Lot

Parcel: 107 Area: 0Ha. 00A. 55Ca Nugagahawatta or Mahena

PARCEL

Building

Number: 0 Area: 0

BUILDING SAVE EXIT

Deed consultation screen.

The project will be finished at the end of May 2003.

3. INDONESIA: INDONESIA LAND ASSESMENT- INLA PROJECT (2003-2004)- PROJECT ASIA IT

3.1 Background:

The current situation in Indonesia regarding methodology of land valuation and mapping is as follows:

Lack of coherent approach to land information:

The orientation of the development program that prioritised economic growth through foreign loans and complied with international investment requests caused the freeze of the Basic Agrarian Law of 1960 (UUPA: UU No. 5/1950). Thereafter various overlapping laws and regulations on land resources were established. These events have been pinpointed as the main cause of conflict on land holdings and ownership, as well as of the damage and deterioration of land and agrarian resources.

The imbalance of land holding and ownership structures:

This is primarily brought about by the ownership of the urban dwellers, which have access to capital and politics on the one hand, and on the other hand the land use conflicts between agricultural and non-agricultural lands. The existence and development of cities and centres of human settlements on the fertile agricultural areas mainly cause the latter.

Lack of cadastral data and common infrastructure:

Data and records of land are widely spread among various institutions which are loosely connected – such as the BPN Land Office for all registered titles to land, Land and Property Taxation Office (PBB) for all levied land parcels, Head of Village for all the land parcels in the area, Ministry of Forestry for all the forest-related lands, Ministry of Energy and Mineral Resources for all the exploited natural resource areas, and Ministry of Settlements and Regional Infrastructures for all lands related to public works. Data is both textually and spatially recorded, then arranged and maintained in different formats, standards, and systems.

Lack of standards in land valuation and data integration:

There has been no generally accepted template for land valuation methodology so any institution can use it for any purpose. Neither has there been a generally accepted template for data and information integration among different institutions, especially between the legal cadastre institution (BPN) and the fiscal cadastre institution (PBB).

3.2 The objectives of INLA project:

This project has four purposes:

To create a methodology of land valuation on a pilot area: Sleman around of Yogyakarta

To develop a prototype application on this methodology

To make training program on land valuation

To monitor this system

3.3 The partners:

IGN France International Department: applicant

Indonesia partner: BPN National Land agency

The BPN has a status of a non-departmental institution according to a Presidential Decree, KEPPRES No 60/2001. Its functions are: to conduct land reform and land use planning by developing small scale mapping for geographic information systems, to conduct land

acquisition, State land allocation, and land granting, cadastral surveying, mapping, and registration.

European Partner: SwedeSurvey

Swedesurvey is a state-owned company that is internationally recognised for its innovative approach to land management and use of geospatial data.

3.4 The different steps of this project:

In order to realise this project, it will be necessary to follow these main activities:

- Project preparation (January 2003)
- Investigation in Indonesia (January 2003)
- Study tour in Europe (February 2003)
- Collection of data (April 2003)
- Conception of the land valuation methodology (April 2003)
- Development of a prototype on this methodology (software) (June to October 2003)
- Training programme in Indonesia on land valuation methodology (April 2003)
- INLA seminar (November 2003)

We are only at the beginning of this project, the methodology of land valuation will be submitted to BPN during the month of April 2003.

4. CAMBODIA: KHMER APPLICATION OF CADASTRAL INFORMATION SYSTEM - KACIS PROJECT (2003-2004)- PRPJECT ASIA IT

4.1 Background: Land Administration Context & Kacis Relevant Project

Cambodia has a total area of 18.1 million ha (including rivers and lakes) and it is estimated that, in 1998, 2.7 million ha were cultivated, towns and infrastructure took up 1million ha, and waterways took up 1 million ha. It is reported that protected areas were 3.3 million ha, and forestry and fishing concessions were taking up 8 million ha (now estimated to be 4 million ha) and 1 million ha, respectively; mine contamination accounted for another 0.2 million ha.

Titles for land ownership have been issued mainly in Phnom Penh, but even within Phnom Penh it is reported that only about 25 percent of the land is titled. In rural areas the current legal framework does not allow land ownership - only possessory rights.

The Municipal Cadastre Office of Phnom Penh was created in 1982. Up until 1997, it had little means at its disposal and had to be satisfied with playing a limited role in fulfilling selective needs without an established work plan. Today, it has more than 70 employees at the Head Office and about twenty people in each of the 7 Districts.

Their main duties consist of: - issuing land titles, - registering transactions, - participating in issuing construction permits, - conducting land parcel surveys.

What is the land tenure situation like in Phnom Penh today? Phnom Penh with more than one million inhabitants is faced with a big demographic problem: the population will double in 10 years. Several tens of thousands of families cannot buy land to build their houses because they lack the financial means. Many parcels downtown have been subdivided. Dwellings designed for 1 or 2 families currently house 6 or 8. Sometimes landowners are driven away from their lands in few of hours because many of them lack title. A large majority of transactions are not registered.

Faced with the growing development of Phnom Penh, it is necessary that a census be carried out on all land data, properties and to identify their owners.

This work can serve as a basis for: - securing the property, - guaranteeing real estate transactions, - helping development by mastering land management, - facilitating access to credit, - putting into place a fair land tax system and in order to avoid the illegal land grabbing.

Moreover, in 1999, the RGC confiscated many plots of land grabbed by some powerful, crooked officials or gave them back to the state or to their previous owners. Indeed, these measures were temporary and could not provide a long-term solution to this issue if the government fails to establish an adequate legal framework for land management. In this spirit, the government of Kingdom of Cambodia wishes to finalise the draft of Land Law.

It exists also an important new programme of the RGC, which will provide a good base for the poverty alleviation. That is the countrywide systematic first registration called the National Land Registration Program (NLRP), to register all land parcels in Cambodia into a modernised cadastral register. So, the KaCIS project to join perfectly in this governmental NLRP programme. Effectively, our KaCIS project will allow securing the land tenure, facilitating land management and providing adequate basis for investments, natural resource monitoring and public land protection.

In order to facilitate a good functioning of the PEFN, it will be necessary to

- collect the alphanumerical and graphical land data and
- implement a modern application KaCIS, which will allow manage efficiently the land workflow, with precision, quickly and with the standard way.

Effectively, real estate registration systems in Phnom Penh require a harmonised and integrated modernisation.

Discrete upgrading of the functions of individual unlinked real estate records without adjusting them to existing requirements (data models, data modification procedures, management technology, linking data to other databases), merely increases the differences between these records.

Existing real estate data are relatively out-of-date, unlinked, and incomplete. Therefore, they can no longer meet the growing requirements of users and even impede further development. Apart from the modernisation of their content, existing real estate registration systems also need to be modernised from the technological point of view. That's why, it will be interesting

to implement a cadastral information system using the web server thanks a new and modern application: KaCIS.

4.2 Kacis Project: Objectives

This Project should address practical information and tool regarding IT&C, and could cover (but are not limited to) any of the following areas:

- Internet Issues: Security on the Internet/Intranet, Software & Tools for E-Real Estate Data Exchange, EDI techniques for receiving/forwarding messages, Internet solution for community
- Concept and Solution for E-government Services Online
- Concept and Solution for E-government Services Online concerning the real estate (data from the cadastral offices, the land registration offices and the Municipality of Phnom Penh).

4.3 Kacis Project: Partners

European partners: BEV Bundesamt für Eich –Und Vermessungswesen (Austria)

Their activities and services are: to carry out fundamental and legal metrology, geodesy and control survey, to provide data base for surveying and geo information systems, to administer the cadastre of real estate of the whole territory of the republic of Austria...

European partners: (Austria)

	Partner 1	Partner 2	Partner 3
Full legal name	Registers Of Scotland	Bundesamt für Eich und Vermessungswesen (Federal Office of Metrology and Surveying)	Municipality Of Phnom Penh Department of Cadastre
Nationality	British	Austrian	Khmer
Legal status	Governmental organization	Governmental organization	N°5, Street 114 Phnom Penh
Number of staff (permanent and non-permanent)	1340	1550	70 people at the Head Office 20 people in each of the 7 districts
History of co-operation with the applicant	Close links between IGN and Registers of Scotland (RoS) have been developed through the joint involvement of both organisations in international conferences and seminars. In particular, the long-term participation of both IGN and RoS in the United Nations Working Party on Land Administration has led to a commitment to further developing a working partnership in relation to international projects.	The history of co-operation between BEV and IGN started two years ago with the participation of the two organizations as delegation Members of the United Nations Working Party on Land Management. Their active collaboration during the different seminars helped setting up strong links and the will to co-operate with other Programmes. In 2000, and for 1 year IGN and BEV worked as technical partners for the World Bank funded project in Slovenia named "Apartment Registration" (0.72 M Euros).	The Municipality of Phnom Penh has a long term experience of co-operation with IGN, as in 1995 the Department of Cadastre received a Project of Transfer of Technology for improving the Land Registration Techniques. This project was raised by IGN with French Government co-operation funds. The outputs of the Project were beneficial for the Municipality.

	Partner 1	Partner 2	Partner 3
Role and involvement in preparing the proposed project	Registers of Scotland has provided advice mainly in relation to the Land Registration and Land Legislation input.	BEV provided assistance in relation to the research of other EU initiatives.	The Municipality was involved in giving advice on the situation in Cambodia and the general environment of the Project.
Role and involvement in implementing the proposed project	Registers of Scotland will be providing the Land Registration and Land Legislation Expertise for the project. (In addition, Registers of Scotland has extensive experience in the design and delivery of study tours and visits to its offices in Edinburg).	For this project, BEV will be mainly involved in the recommendations in terms of Cadastral techniques for import and combination of geographical and administrative data.	The role of the Municipality of Phnom Penh will be extremely important as it will be the receptacle of the Project and the media to insure its sustainability.

4.4 Kacis Project: Steps

This project will consist in:

1. loading all the data information from the
 - the Cadastral Office,
 - the Land Registration Office and
 - the Municipality of Phnom Penh;
2. organising all these data in a DBMS (both the graphical and the alphanumerical data);
3. shipping the data off to the web server;
4. implementing the file browsing service in favour of the public by internet;
5. setting up the update of this real estate information by intranet.

The following groups will be able to reap the benefits of KaCIS:

- The population of Cambodia, and particularly the citizens (Public) of Phnom Penh.
- The Municipality of Phnom Penh, and particularly the administrations dealing with land management.

In order to realise this project, it will be necessary to follow these main activities:

- Project preparation
- Investigation in Cambodia
- Conception of KaCIS
- Study tour in Europe
- Training programme in Cambodia
- KaCIS seminar
- Monitoring of KaCIS.

The KaCIS Project is summarised in the figure below:

Step 1: Cadastral & Real Estate Data /Land use & Environmental Data ; this information is loaded in the Cadastral Information System;

Step 2: Then it is organised to answer to graphic (cadastral map) and textual (folios) queries;

Step 3: Presentation of the results i.e. the output and the results will be formatted to be delivered through web technology;

Step 4: These data can be sent through the network via a new web server, hosted by the Dept of Cadastre from the Municipality of Phnom Penh;

Step 5: Set up of extranet and intranet workstations (located in the Municipality of Phnom Penh), display outputs through an internet navigator.

These workstations could be use by the Public or Private sectors.

BIOGRAPHICAL NOTES

Christelle Faivre

Project Co-ordinator

IGN France International Department

Graduated from the "Ecole Supérieure des Géomètres Topographes" (Land Surveyor School in 2000), she is appointed as a project co-ordinator in IGN France International Department.

In this role, Christelle Faivre is responsible of the managing of, resources, planning, budget and on the technical aspects. These keys qualifications are: land planning, register, cartography, GIS, land surveyor.

She is also membership of the "association of Ecole Supérieure des Géomètres Topographes".

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