

**SYSTEMATIC REGISTRATION OF  
ONE MILLION PARCELS IN FIVE YEARS**  
**Developing a Successful Modern Cadastre  
The Cambodian Way**



**Jouni ANTONEN, Finland**



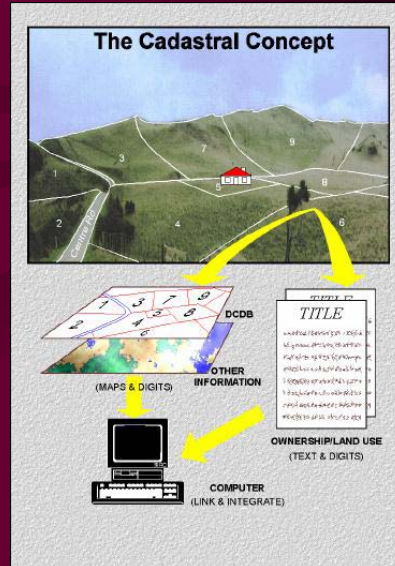
FIG Working Week 2008 Stockholm, Sweden 14-19 June – INTEGRATING GENERATIONS

**CONTENTS**

- **FIG's Definitions of "Successful Modern Cadastre"**
- **Development of Land Administration and Cadastral Systems in South-East Asia: Development Projects, Manual and Digital Approaches, Costs**
- **Start of the Development of a Modern Cadastre in Cambodia: Recent History, Land Policy, Projects / Programmes, Applied Technologies**
- **Status, Next Steps and Challenges in the Establishment of the Modern Cambodian Cadastre**

## ”CADASTRE”

“A *Cadastre* is normally a parcel-based, and up to date land information system containing a record of interests in land (e.g. rights, restrictions and responsibilities). It usually includes a geographical description of land parcels linked to other records describing the nature of the interests, the ownership or control of those interests, and often the value of the parcel and its improvements. It may be established for fiscal purposes (e.g. valuation and equitable taxation), legal purposes (conveyancing), to assist in the management of land and land use (e.g. planning and other administrative purposes), and enables sustainable development and environmental protection” (FIG, 1995).



## ”SUCCESSFUL CADASTRE”

- A) Security
- B) Clarity and simplicity
- C) Timeliness
- D) Fairness
- E) Accessibility
- F) Costs
- G) Sustainability

”...should provide security of tenure, be simple and clear, be easily accessible and provide current and reliable information at low cost” (FIG, 1995)

## **"MODERN CADASTRE"**

FIG future vision, "Cadastral 2014":

Modern Cadastral is (more or less)

**DIGITAL**

to

provide better access to the information, better quality and better legal and physical security than traditional manual systems,

and

be more cost-effective and greatly facilitate data exchange between different agencies.

## **DEVELOPMENT OF CADASTRAL SYSTEMS IN SOUTH-EAST ASIA**

- Rapid population and economic **growth** in the region
- Cadastral development as part of the **overall development** of often post-colonial and/or post-conflict societies:
- Land administration **projects** since the 1980's in e.g. Thailand, Laos, Indonesia, Philippines, Viet Nam, Cambodia
- **Objectives**: Poverty reduction, social stability and economic development by improving the security of land tenure and promoting the development of efficient land markets
- Systematic land registration **campaigns** and **development** of the cadastral and whole land administration systems
- Active **development partners** to the countries so far for example WB, Australia, Finland, Germany...

## MANUAL AND DIGITAL APPROACHES

- Both **manual** and **digital** approaches being developed in South-East Asian countries with different local features, technologies and **COSTS**
- Conventional and conservative approaches often criticised and characterised **INEFFICIENT** and **INEFFECTIVE**
- 1990's: "*IT is playing an increasing role in all land administration projects on most stages: acquisition, analysis, storage, dissemination... However, it is **NOT EASY**...*"
- 2000's: "*Perhaps **PAPER**-based approaches should be given preference in Asia?*" ... Humble Surveyor's question: **WHY?**

## WHY STILL STATUS QUO OF MANUAL SYSTEMS IN MANY SOUTH-EAST ASIAN DEVELOPING COUNTRIES?

### EXPERTS ARGUE...

- "...Critical issue in many countries is the low level of technology and low skill level of staff..."
- "...Hi-tech measures have been tried, tested and failed..."

### ...BUT REASONS ALSO INCLUDE:

- *Focus and emphasis* on producing hand-drawn and -written title certificates based on imported old manual systems; "Satisfaction" with ever-increasing number of physical paper documents, even though **LITTLE** or **NO** cadastral data is actually produced...
- *Partially* unsuccessful donor support in assisting the introduction of IT in developing countries...
- *Assumed* limitations of the cadastral staff to apply new-tech

## CAMBODIAN APPROACH:

### DIGITAL APPROACH:

- Digital orthophotos; latest technology
- GPS, Total stations; latest technology
- Cadastral databases and GIS; locally developed
- Normal daily use of computers
- Scanning of cadastral paper documents

### SIMPLE REASONS:

- Cambodia one of the poorest countries in the region
- Still a small number of educated professionals
- Behind in development due to the recent history
- CANNOT AFFORD an ineffective, inefficient, costly system

### COMPARISON OF COSTS:

- In South-East Asia "title development costs" so far usually US\$ 20-50/parcel
- In Cambodia: Currently < US\$ 10 per parcel

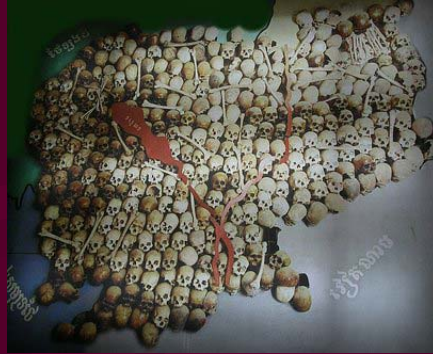


## KINGDOM OF CAMBODIA

- \* Late great Khmer Empire and former French Indochina
- \* Independence: 1953
- \* Area: 181,500 km<sup>2</sup>
- \* State land: 80% (estimate)
- \* Population: 14 million +
- \* Capital city: Phnom Penh
- \* Rural population: 84% (estimate)
- \* Provinces/municipalities: 24
- \* Districts: 186
- \* Communes: 1621
- \* Land parcels: 10-14 million (estimate)
- \* Final peace: 1998



## RECENT HISTORY OF THE CAMBODIAN LAND ADMINISTRATION



**1975 - 1979 Ultra-communist Khmer Rouge regime:**  
**Private land ownership abolished and all land- related**  
**documents; land register, maps and geodetic networks**  
**systematically destroyed and professional surveyors eliminated**  
**= "Year Zero" !**

## RECENT HISTORY OF THE CAMBODIAN LAND ADMINISTRATION

- 1979 - 1989 Vietnamese-backed communist Government:**  
**No private land ownership, collectivisation**
- 1989 - Re-introduction of private land ownership**
- 1990 - Sporadic registration of privately possessed lands**
- 1995 - 2002 Development of systematic registration:**  
**German-supported Land Management Project**  
**(LMP) and**
- 1997 - 2002 Finnish-supported Cambodia Cadastral Project**  
**(CCP)**
- 1998 - Ministry of Land Management, Urban Planning**  
**and Construction, General Department of**  
**Cadastre and Geography**

## RECENT HISTORY OF THE CAMBODIAN LAND ADMINISTRATION

- 2000 First Sub Decree on Systematic Land Registration
- 2001 Statement of the Royal Government on Land Policy : Key areas, tasks, tools
- 2001 New Land Law: Full land ownership
- 2001 Sub Decrees on Systematic (update) and Sporadic Land Registration and Cadastral Commission (land dispute resolution)
- 2002 Strategy of Land Policy Framework
- 2002 – Land Management and Administration Project (LMAP), supported by WB, Finland, Germany, and Canada (from 2008 ) in 14 provinces / municipalities out of total 24

## LOW SECURITY OF TENURE

- Prevents the utilisation of resources
- Discourages long-term investments
- Over- and under-exploitation of resources
- Transactions problematic; "gamble"
- Land disputes too common
- Does not promote social stability
- Land rights = Human rights

**IMPROVING THE SECURITY OF LAND TENURE IS FUNDAMENTAL FOR THE SOCIAL AND ECONOMIC DEVELOPMENT OF CAMBODIA!**



## **STATEMENT ON THE LAND POLICY (2001)**

### **THREE KEY AREAS:**

Land administration, land management and land distribution

### **NATIONAL GOALS:**

Poverty reduction, economic development, good governance

### **OBJECTIVES:**

- Strengthen land tenure security and land markets
- Prevent and resolve land disputes
- Manage land and natural resources in equitable, sustainable and efficient manner
- Promote land distribution with equity

## **LAND ADMINISTRATION, MANAGEMENT AND DISTRIBUTION PROGRAM (LAMDP)**

A long-term program envisioned to be implemented over 15 years to achieve the tasks of the three key areas of the land policy.

*“Important materials for the success of this program include the establishment of accurate geodetic networks, aerial photography and base mapping, and up-to-date land information systems” (RGC, 2001).*

The traditional manual Cadastre was recognised to be unable to fully serve the needs of the whole land sector and the developing Cambodian society as a whole; a need for **MODERN MULTI-PURPOSE CADASTRE** is obvious.



## LAND MANAGEMENT AND ADMINISTRATION PROJECT (LMAP)

- First 5 year phase of LAMPD, 2002-2007
- **Overall goals:** Reduce poverty, promote social stability and stimulate economic development
- **Specific objectives:** Improve land tenure security and promote the development of efficient land markets
- **Components:**
  1. Land policy and regulatory framework
  2. Institutional development
  3. Land titling program and development of a modern land registration system
  4. Land dispute resolution
  5. Land management + Social land concessions

## LAND MANAGEMENT AND ADMINISTRATION PROJECT (LMAP)

Original total budget: US\$ 34 million (for five years 2002-2007)

### Financing:

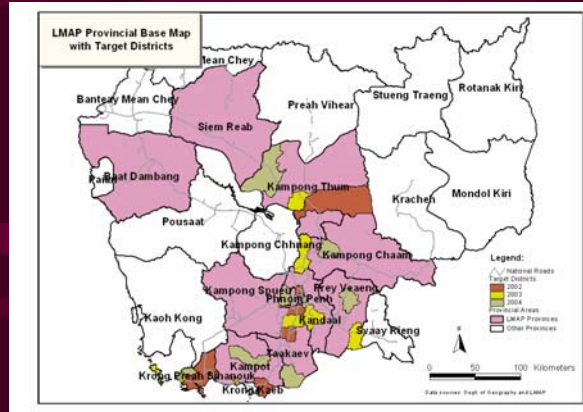
- The World Bank (IDA credit)
- Royal Government of Cambodia (counterpart funds)
- (Canada: grant, trust fund, joined later)

### Technical assistance:

- Finland (grant), Component 3, through FM-International Oy FINNMAP
- Germany (grant), Components 1,2,4 and 5 through GTZ

MANY DEVELOPMENT PARTNERS AND COMPONENTS,  
BUT ONLY ONE PROJECT!

## LMAP PROJECT AREAS



- 11 provinces/municipalities + 3 more in 2008
- 80 % of the population of the country
- Most of the fertile and land market areas

## COMPONENT 3: LAND TITLING PROGRAM AND DEVELOPMENT OF A MODERN LAND REGISTRATION SYSTEM

### SUBCOMPONENTS:

- Information dissemination and community participation
- Systematic land titling program
- Sporadic land titling program
- Development of a modern land registration system

### KEY PERFORMANCE INDICATORS:

- Land titles are issued effectively and efficiently
- Land registration system is functioning well

### OUTPUT INDICATORS, E.G.:

- 1,000,000 parcels registered systematically
- Average cost per title is less than US\$ 30,-
- 75% of transactions are registered

## **APPLIED TECHNOLOGIES FOR THE DEVELOPMENT OF A SUCCESSFUL MODERN CADASTRE IN CAMBODIA**

### **”Development of a modern land registration system:**

- Review of the land registration system and operational procedures
- Improved office facilities, equipment, furniture and materials
- Establishment of a land registration database system”
- Involves a great deal of legal and technical development work
- Ambitious targets of LMAP and 2006 announced targets by MLMUPC: 32% of all parcels by 2010 and 65 % by 2015 to be registered
- **Need for successful, effective and efficient system!**

## **CAMBODIAN SYSTEMATIC LAND REGISTRATION PROCEDURE**

### **IMPLEMENTATION BASED ON:**

- Effective information dissemination
- Full participation of landowners and other stakeholders
- Transparency of procedures and fees
- Good governance measures
- Real team work and team-based results
- Productivity-based allowances of Land Registration Teams
- Optimised utilisation of modern information and survey technology as a tool for effective and efficient systematic first registration and maintenance of up-to-date multi-purpose Cadastre
- Quality control mechanism

## FIELDWORK

- Public Awareness and Community Participation (PACP)
- Land management supporting registration
  
- Adjudication
- Demarcation
- Surveying
  
- Public Display (PD)



## OFFICE WORK (DOCUMENTATION)

- Data entry
- Digitising
- Preparation of Public Displays (PD): Cadastral Index Maps, Adjudication Records (Lists of Owners)
- Finalisation of the data after PD
- Printing of Land Register Books and Cadastral Index Maps (hardcopies)
- Printing of Land Title Certificates (LTC)
- Scanning of forms and reference documents



## STATUS OF ESTABLISHMENT OF THE CAMBODIAN CADASTRE AS OF 06/2008

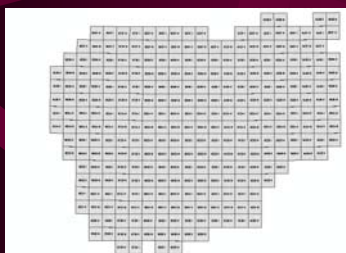
- Provinces: 15, districts: 30+, communes: 150+, villages: 1,500+
- Systematic registration staff: 900: provincial 800, central 100
- Administrative Commission (AC) members trained: 5,800
- Land Registration Teams: 29 á 27 Cadastral Officers
- Digital orthophotos produced: 60,000 km<sup>2</sup> + (all blocks)
- Digital orthophotos procured and quality controlled: 199,500 km<sup>2</sup>
- Ground control points established: 5,700
- Parcels systematically registered/in process: 1,240,000
- Production per month, average: 20,000-25,000 parcels
- Registration time, target: 6 months/village (average size 1,000 parcels)
- Title development cost per parcel at the moment: US\$ 9,-

**BUT:**

**”IT IS BETTER TO HAVE NO CADASTRE THAN A CADASTRE THAT IS NOT UP TO DATE!”**

27

## STATUS AND CHALLENGES OF ESTABLISHMENT OF THE MODERN CAMBODIAN CADASTRE



## A) SECURITY

- Land Law 2001: Full land ownership
- Title by registration system
- Procedures: Openness, publicity, transparency, full participation
- Certainty of land ownership and parcel identification: Unique parcel reference numbers
- Survey accuracy requirements and standards appropriate
- Seamless Cadastral Index Map
- Utilisation of IT: Human errors minimised, incomplete data prevented, automated functions
- Data security measures, back-ups, data access in place

**CHALLENGE:** Registration culture to be created for up-to-date Cadastre



## B) CLARITY AND SIMPLICITY

- MLMUPC: Full mandate in land registration: No overlapping responsibilities
- Cadastral Offices at district, provincial and central level
- Power delegated from central to province level: Procedures simplified and length decreased
- Public awareness being increased and cadastral forms simplified
- Technically system is simple and easy to use, easily trained and learned

**CHALLENGE:** Creating a one-window-service with combined Cadastral, Local Authority and Tax Office functions, minimising inconveniences to the customers to encourage official land registration



## C) TIMELINESS

- Cadastre is to be kept up-to-date at all three levels; Province, district and central
- Ministerial Instructions in place
- All parcels in the registration areas are included in the system
- Technical updating easy



### CHALLENGES:

- It takes still a long time to cover the whole country, work is in the beginning
- To get informal transactions registered formally
- Creating a registration culture



## D) FAIRNESS

- All landowners are treated equally at first registration
- All parcels are included in the system
- First registration fees are reasonable, fixed, transparent and commonly accepted
- Equitable access to cadastral services at district, provincial and central levels
- Delegation of power from central to province level has increased effectiveness and efficiency and simplified procedures
- Title certificate delivery to the people



### CHALLENGES:

- Cadastral service and product fee revision
- Land valuation system development for fair land-related fees and taxation

## E) ACCESSIBILITY

- Cadastre is accessible at district, provincial and central level for all private and public sector customers
- Cadastral fee structure in place

### CHALLENGES:

- Definition of official fees/prices for all available cadastral products (LMAP: "Map Shop")
- Fee revision for better cost-recovery and sustainability
- Fixed, transparent fees
- Demand for on-line services in Cambodia unknown, access through internet still not among the first priorities



## F) COSTS

- Costs per parcel have so far been low compared to other countries in the region, *partly* because of the utilisation of IT for effectiveness and efficiency
- First registration fees low, putting only minor burden to the beneficiaries

### CHALLENGES:

- Establishment of a cost-recovery based system so that:
- Landowners are encouraged to register transactions officially and
- Utilise available cadastral products

...so that the costs of the first registration and the operation and maintenance costs of the Cadastre are recovered





## G) SUSTAINABILITY

• Sustainability of the developed systems is a huge challenge, as in most poor developing countries

### CHALLENGES:

- Human resources
- Financial resources
- Technical support

### OPPORTUNITIES:

- Continuous training
- New generation professionals
- Public-private partnerships
- Land-related fees and taxation for financial sustainability



## BASIC REQUIREMENTS FOR THE ESTABLISHMENT OF A SUCCESSFUL MODERN CADASTRE IN CAMBODIA

A) POLITICAL SUPPORT

B) LEGAL SUPPORT

C) TECHNICAL SUPPORT

D) FINANCIAL SUPPORT

E) HUMAN RESOURCES

F) LAND REGISTRATION CULTURE

## A) POLITICAL SUPPORT ?

- So far highest-level political support to the land sector development
- Land policy statement and strategy in place, comprehensive land policy under development
- Council of Land Policy; 26 out of 28 Ministries presented, cross-cutting issues
- Land registration announced to be the most important area of MLMUPC's work now and in the near future
- PM has urged to speed up systematic registration to cover the most important areas more quickly
- Land registration a win-win situation to all stakeholders



## B) LEGAL SUPPORT ?

- Land Law in place
- Relevant Sub-Decreets in place
- Most of the relevant Instructions in place
- Focus at the moment in the finalisation of more detailed supplementary Instructions and further development of the legal framework

### CHALLENGES:

- Scarcity of local legal professionals
- So far, and still, TA needed



## C) TECHNICAL SUPPORT ?

- LMAP's quantitative target unrealistic with completely manual paper-based approaches
- IT/GIS/DB and modern survey technology as tools for efficiency and cost-effectiveness
- Technical solutions as simple as possible
- Land information produced
- Data kept up-to-date
- Applied technologies developed for Cambodian needs and conditions step by step together with international experts
- Routine tasks with no major problems

### CHALLENGES:

- Limited human resources
- Further development and maintenance (HW/SW)
- Transfer of knowledge, TA still needed
- Public-private partnerships

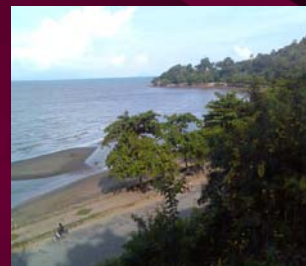


## D) FINANCIAL SUPPORT ?

- Cambodian land sector increasingly attractive to new development partners
- Financial support to TA for the implementation of the key areas of the land policy; land administration, management and distribution by international donors in the near future
- Government's financial support

### CHALLENGES:

- Coordinating increasing efforts and projects
- Managing the complexity of the land sector
- Standardising various practices, outputs and data to avoid major confusion
- Implementation of the *Paris Declaration* for enhancing aid effectiveness
- Financially self-sustainable cadastral system



## E) HUMAN RESOURCES ?

- Scarcity of educated professionals still a problem due to the tragic recent history
- All training so far in the key role: ToT, specific training courses, on-the-job training, on-line technical support, supervision, monitoring
- Utilisation of the new generation professionals from the University at the data production (provincial level) and data management and maintenance (central level)
- Support to private surveying sector
- Public-private partnerships



## F) LAND REGISTRATION CULTURE ?

- Systematic first registration functioning already
- Main challenge for a well-functioning Cadastre; keeping the Cadastre up-to-date
- Information dissemination and public awareness on the legal value and importance of official registration of transactions and the system as a whole
- Making official land registration attractive to the landowners: Fee revision, customer-friendly services, minimum inconveniences, fair taxation: development of an official land valuation system, one-window-service



## CONCLUSIONS:

- When the above requirements are in place and the main challenges are overcome, there should be no major obstacles for the Cambodian Cadastral Administration to apply new appropriate technologies for establishing a successful modern Cadastre, i.e. provide security of tenure, be simple and clear, be easily accessible and provide current and reliable information at low cost.
- However, it must be recognised that no cadastral system can be developed and established overnight, and the long and difficult process is still in the beginning in the post-colonial and –conflict Cambodia, but it is already important to take big **CONCRETE STEPS** to the right direction...

## NEXT CONCRETE STEPS:

- From "Donorship" to Cambodian Ownership:  
**LAND ADMINISTRATION SUB-SECTOR PROGRAM (LASSP) 2009-2012**
- **Comprehensive Land Policy development and establishment of Sub-Sector Programs also for Land Management and Land Distribution**
- **Land valuation and land market development** (new Component with CIDA support)
  - **One-Window Offices for cadastral services**  
(Integration of also MEF and MoI to take part in the system)
- **Increasing productivity and quality of the land registration**
  - **Private sector development in land administration**
- **Promoting official subsequent land registration, public awareness for the whole land registration system**
- **Modern Multi-Purpose Cadastre as the basis for NSDI development**

**THANK YOU FOR YOUR TREMENDEOUS  
ATTENTION!**



**KIITOS - SOM ACKGOON – TACK SÅ MYCKET !**

[jouni.anttonen@online.com.kh](mailto:jouni.anttonen@online.com.kh)

