

Surveyors Key Role in Accelerated Development

Mr. **Manohar Velpuri**, India and Dr. **Daniel Steudler**, Switzerland:
Role of Land Administration in Sustainable Development – Country
Case Studies of India and Switzerland (3436)

FIG-Working Week 2009, Eilat, Israel

TS 1A – Case Studies in Cadastre

Commission: 7

Chair: Dr. **Peter van Oosterom**, the Netherlands

Rapporteur: Mr. **Habtemicael Weldegiorgis**, Eritrea

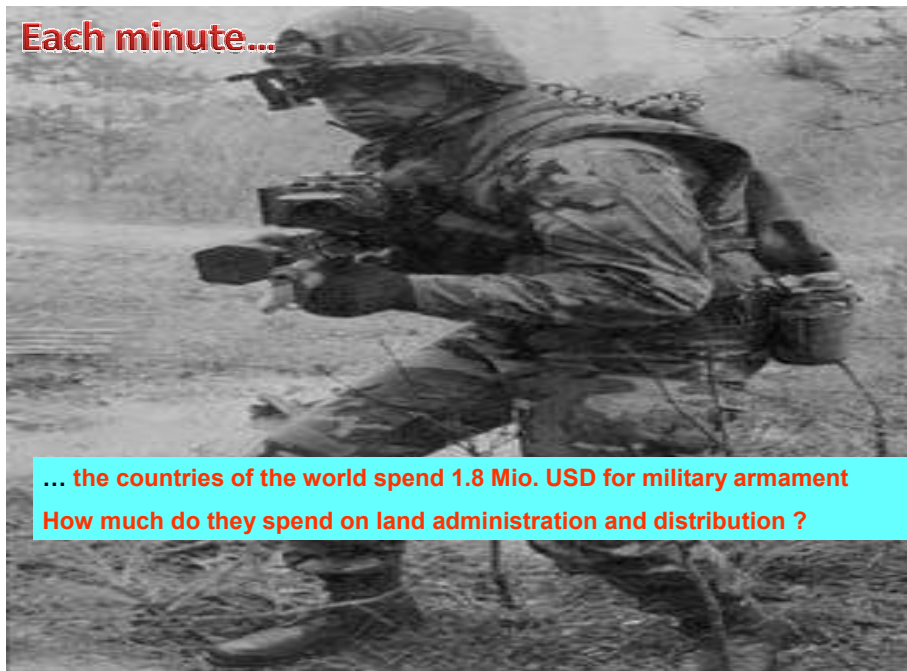
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Challenges in the World

- **Poverty, unequal distribution of wealth, provision of basic needs, illiteracy, safe drinking water: Nepal, Philippines, India, Sri Lanka, South Africa, Kosovo, Pakistan**
- **Land less people : Kenya**
- **Ethnic conflicts : Sri Lanka**
- **Population growth and protection of environment : China**
- **Corruption and misuse of public funds : Nepal, Brazil, Kosovo, Indonesia.**
- **Waste management: Philippines, Kosovo, Macedonia**
- **Soil infertility, disappearance of small rivers & intoxication of the natural environment caused by intensive agricultural methods : Ukraine**

Each minute...



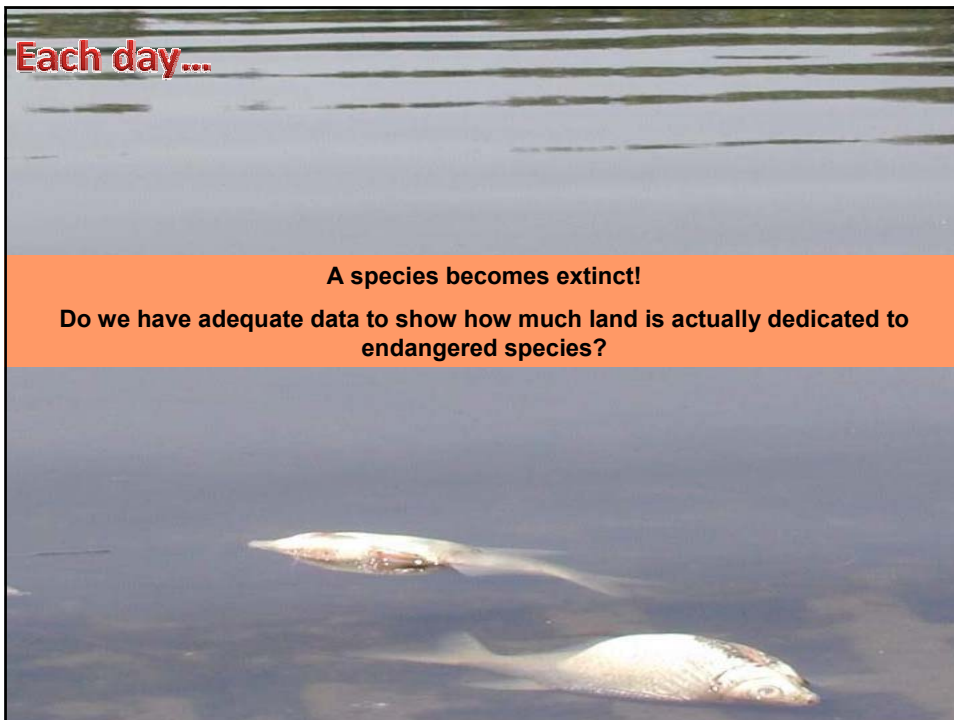
**... the countries of the world spend 1.8 Mio. USD for military armament
How much do they spend on land administration and distribution ?**

Each hour...



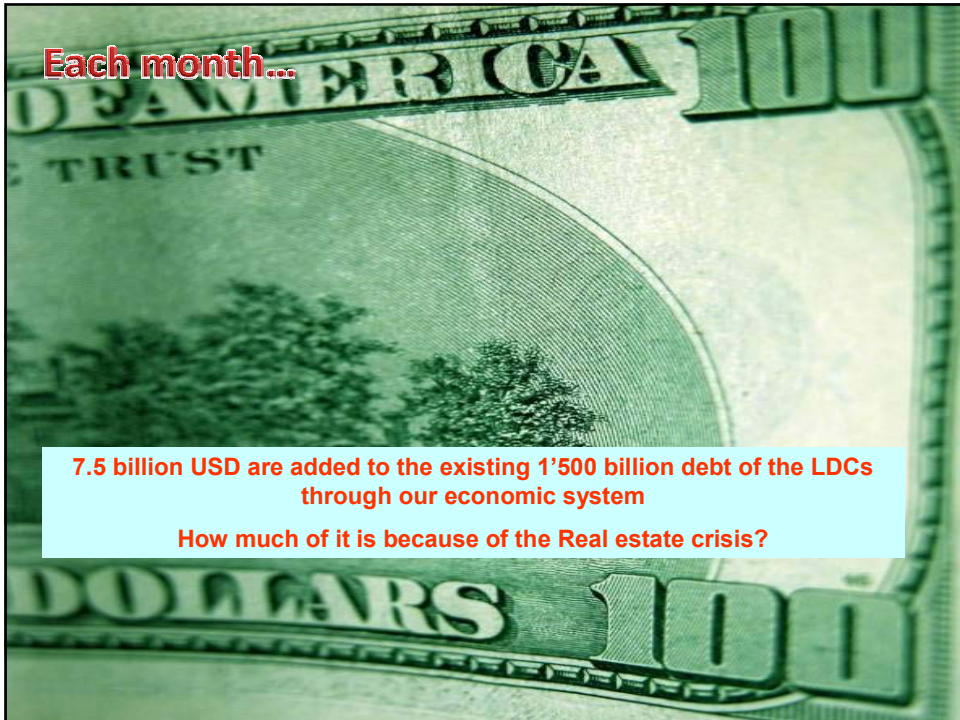
**1'500 children die of hunger or hunger-related diseases
Malnutrition--Is it because of lack of agricultural land?**

Each day...



A species becomes extinct!

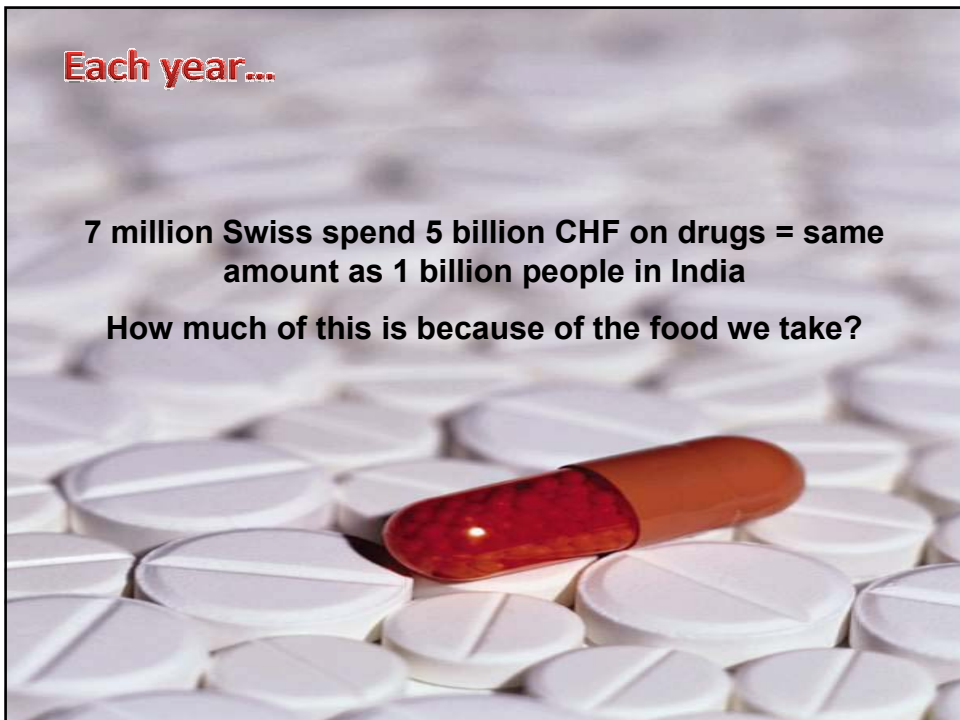
Do we have adequate data to show how much land is actually dedicated to endangered species?



Each month...

7.5 billion USD are added to the existing 1'500 billion debt of the LDCs through our economic system

How much of it is because of the Real estate crisis?



Each year...

7 million Swiss spend 5 billion CHF on drugs = same amount as 1 billion people in India

How much of this is because of the food we take?

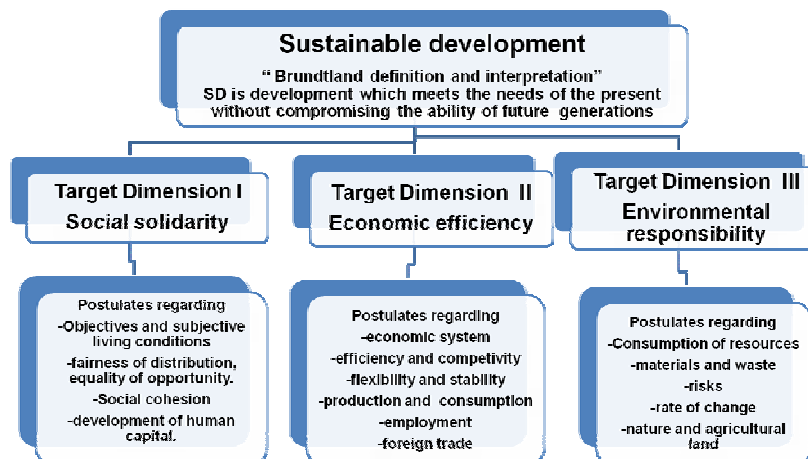
Sustainability... what & how

WHAT IS TO BE SUSTAINED:	FOR HOW LONG?	WHAT IS TO BE DEVELOPED:
NATURE Earth Biodiversity Ecosystems	25 years "Now and in the future" Forever	PEOPLE Child survival Life expectancy Education Equity Equal opportunity
LIFE SUPPORT Ecosystem services Resources Environment	LINKED BY Only Mostly But And Or	ECONOMY Wealth Productive sectors Consumption
COMMUNITY Cultures Groups Places		SOCIETY Institutions Social capital States Regions

SOURCE: U.S. National Research Council, Policy Division, Board on Sustainable Development. *Our Common Journey: A Transition Toward Sustainability* (Washington, DC: National Academy Press, 1999).



Sustainability ... Switzerland



Implementation of "sustainable development" in MONET- Monitoring of sustainable development

Sustainability ... India



- much older than the Brundtland report
- Stockholm conference-1972 identified that poverty is the greatest threat to environment
- a combination of the western oriented definitions combined with a more spiritual approach
- philosophical and lays great stress on the individual
- “attempts to incorporate the sustainability dimensions of economy, environment and society in the system of values governing a human being.”

Sustainability – the 3 pillars

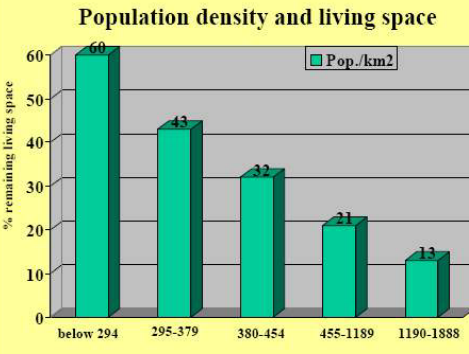
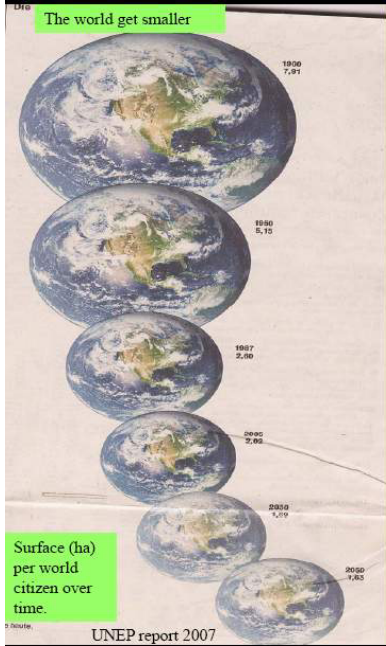
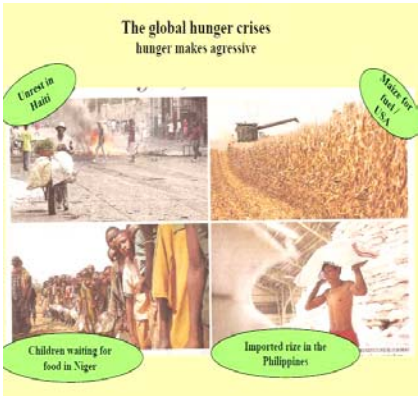


- **Environment:** Based on agro-ecological principles and environmental integrity.
- **Social:** Empowerment, Education, Raising social status of community.
- **Economic:** Food Security, Economic Viability and increasing income.



Issue... Land Administration

“ Neo colonialism” with poor states producing the food for the richer at the expense of their food security.



Less and less earth surface and living space per each human individual. In the last 20 years the world population grow by 30% (+1.7 Bill. To total 6.7 Bill.). Today each individual has only 2 ha of land available, as in 1987 this figure amounted to 2.6 ha, and in 1900 it was 4 fold bigger (8 ha).

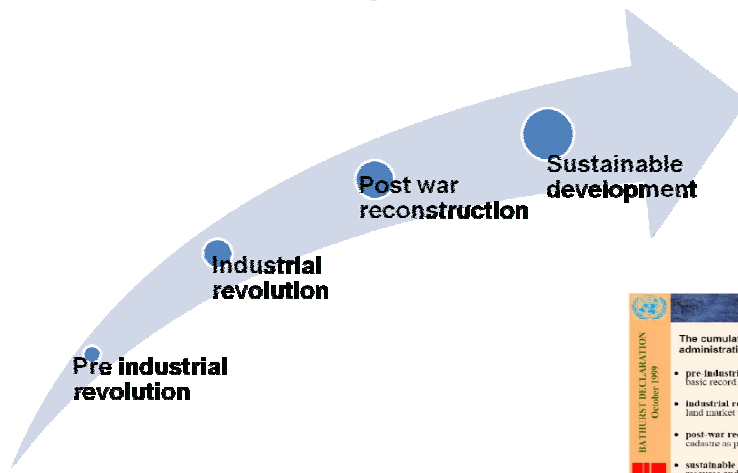
Urban planning a spin off in land management



BILD BEARWIAKTA BEARWIAKTA/REUTERS
Eine Bewohnerin Jakartas bewegt sich nach heftigen Regenfällen auf einem improvisierten Floss durch die Stadt.

Jakarta kennt das Datum des Untergangs

History: LA & SD link



The Story

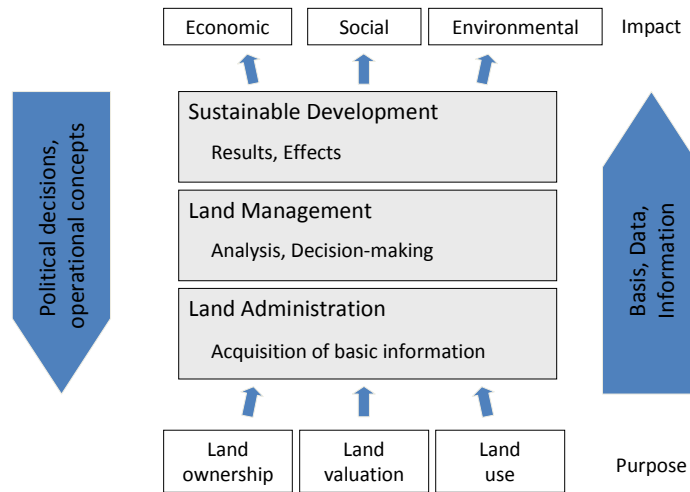
The cumulative evolution of society's land administration needs (western examples)

- pre industrial revolution: land as wealth and cadastre as basic record and fiscal tool
- +
- industrial revolution: land as commodity and cadastre as land market tool
- +
- post war reconstruction: land as scarce resource and cadastre as planning tool
- +
- sustainable development: land as scarce community resource and cadastre as land management tool

Figure 4 bathurst declaration [1.1]

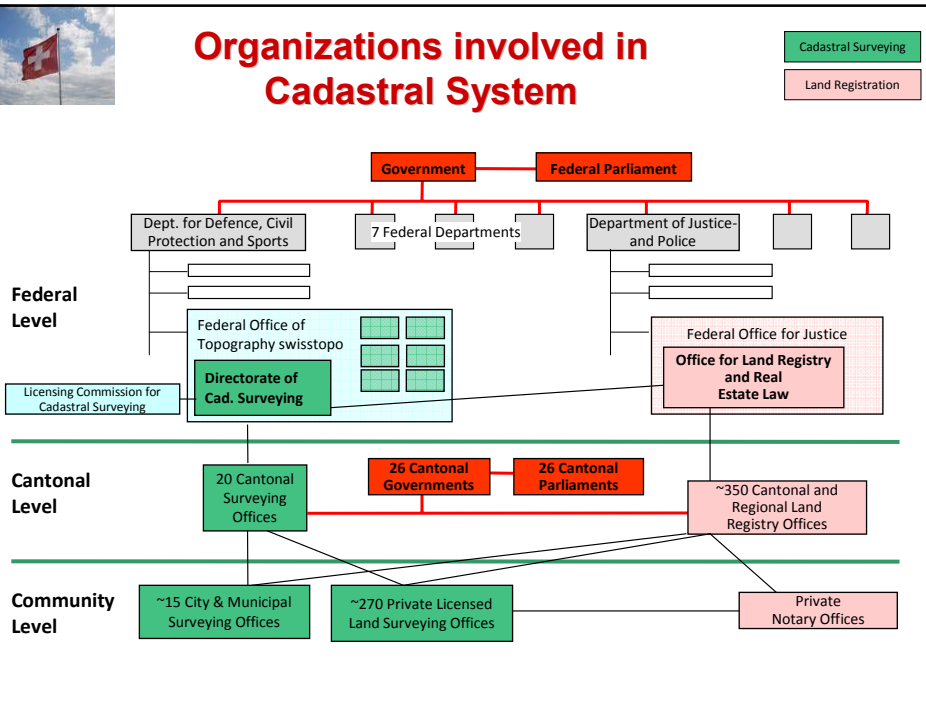
FIG : Bathurst declaration, October 1999

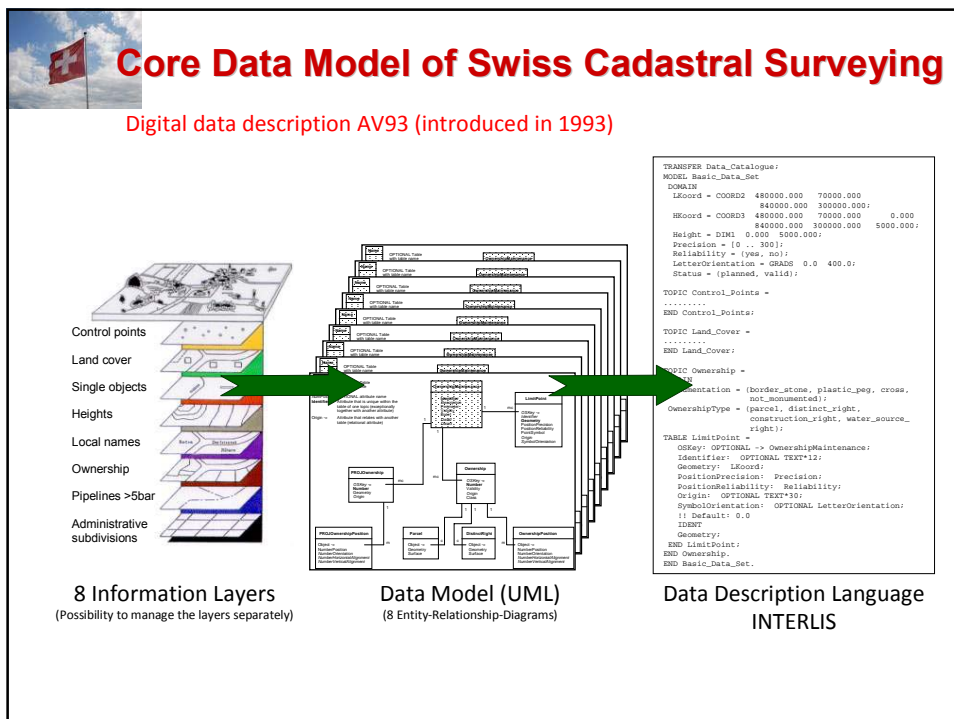
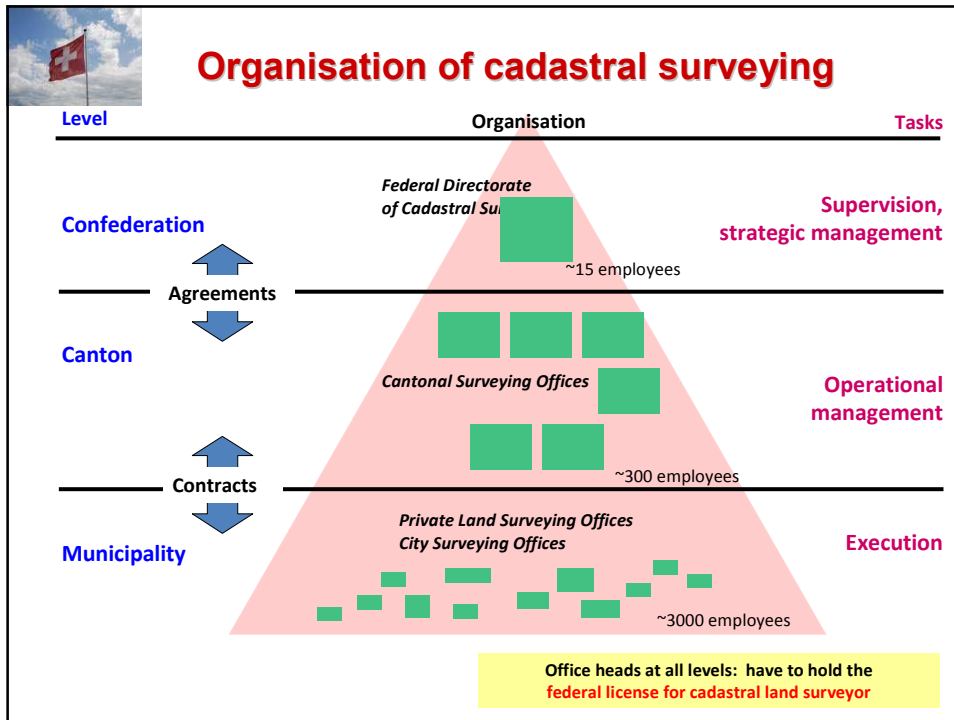
Context in general



(Stedler, 2008). www.geo21.ch/ethz

Organizations involved in Cadastral System





Cadastral systems ... India



The Cadastre is a - parcel based and up-to-date land information system, consisting of:

- i. a record of rights or the ownership in land ;
- ii. a graphical mapping of the land parcels linked to other records describing the nature of the rights or interests in the respective land parcels.
- **British-colonial rule-- the Survey of India in 1767**
- **Centralised approach of land-surveying was decentralised in 1904 – state responsibility of cadastral surveying.**

Organisation...Institutions...Plans



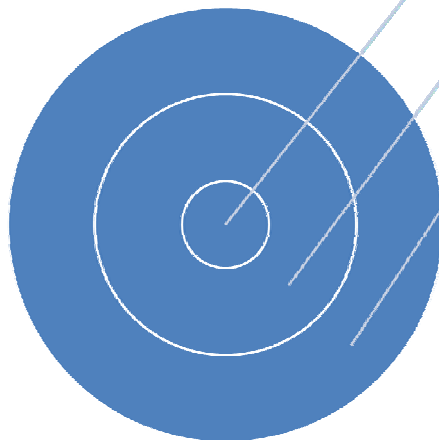
District - Tahsils (Tahsildar – arbitrates land disputes) - Mandals, Villages

2-3 state agencies : handling property records

Cadastral surveys - State government
maintenance of land records , assessment and collection of land tax - district authorities.

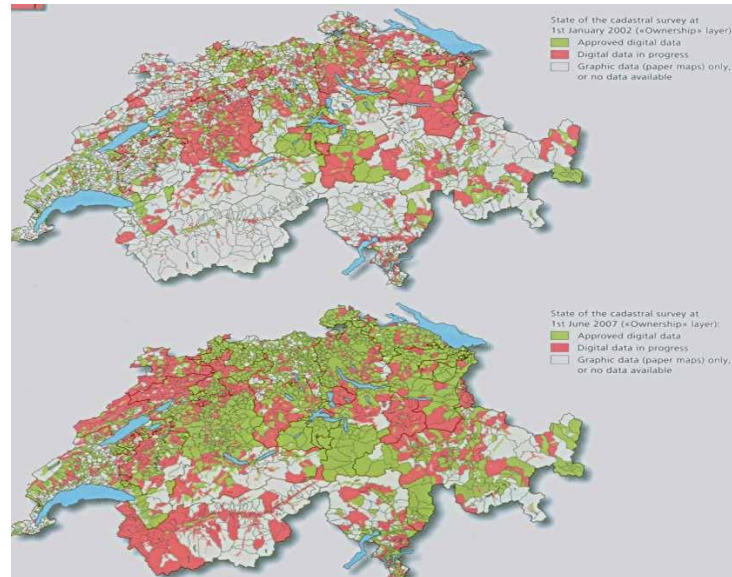
Ministry of Rural Development, GoI

Survey of India confined itself only to the transfer of technology to aid cadastral surveying.





Status of cadastral survey... Switzerland



Status... India



- Present land titling system in India provides for registration of deeds and documents and “presumptive” property titles.
- 21st August, 2008 : to change this system to clear property titles (Torrens system)
- Three principles Conclusive titling : single agency, “mirror” principle and “curtain” principle
- India has launched a major programme by the name of “National Land Records Modernization Programme” (NLRMP)

FIG - WB Conference
Rita Sinha (2009)

India... variation at its best



VILLAGE PANCHAYAT MEETINGS TO DISCUSS PROBLEMS & SOLUTIONS



Total areas: 3.29 million sq Km
 Survey area : 2.16 million sq Km
 Rural areas: 140 million land owners
 430 million land records
 Urban areas: 55 million urban households
 42 million FMB's, 6,40,000 villages
 Digitalization required : 1 million village maps
 1896(4018) registration offices to be computerized.

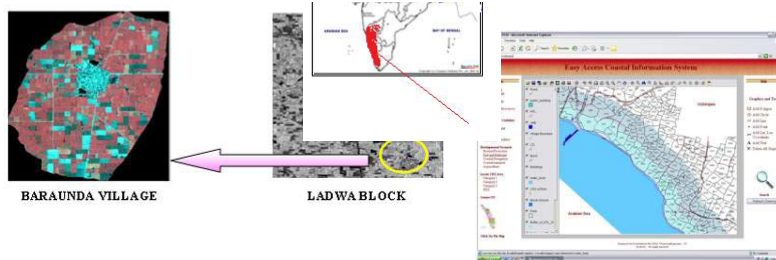


Status of cadastral survey ... India



- NRLMP

- (i) computerization of property records
- (ii) survey and preparation of maps using modern technologies
- (iii) computerization of the registration process
- (iv) training and capacity building.



Technology the fourth pillar to SD through LA ?



The varied topography of the country judicious combination of technologies for proper survey.

Transfer of technology down to the field level workers

Rapid change in technology requires putting into place systems relating to security of data, redefinition of accuracy standards and a system for 100 per cent quality check.

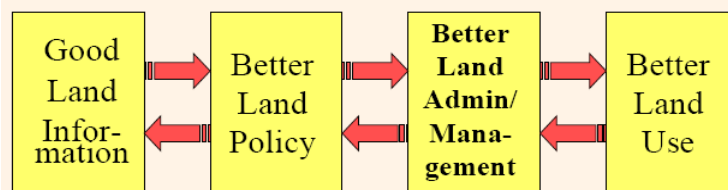
Tremendous amount of capacity building



EPFL (technology and sustainable development)
FIG - WB Conference
Rita Sinha (2009)

Conclusions...

Sustainable development is not attainable without sound land administration



Bathurst Declaration (1999). www.fig.net