




The role of cadastres in sustainable development



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An exciting time for cadastral reform



- In the developed world, cadastres are complete and support spatial enablement and sustainable development
- New initiatives in 3D cadastres for smart cities, marine cadastres and digital revolution (on demand/any place, smart phones, positioning technologies, sensors, virtual world)
- Focus in less developed countries on land governance, fitness for purpose and low cost cadastral solutions



My key messages are:

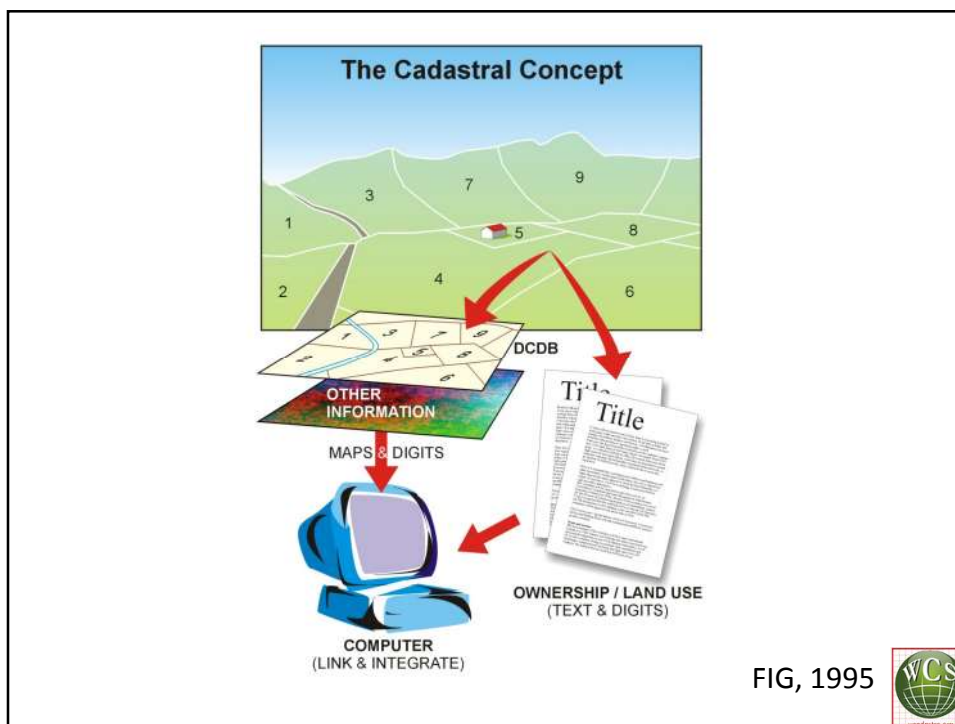
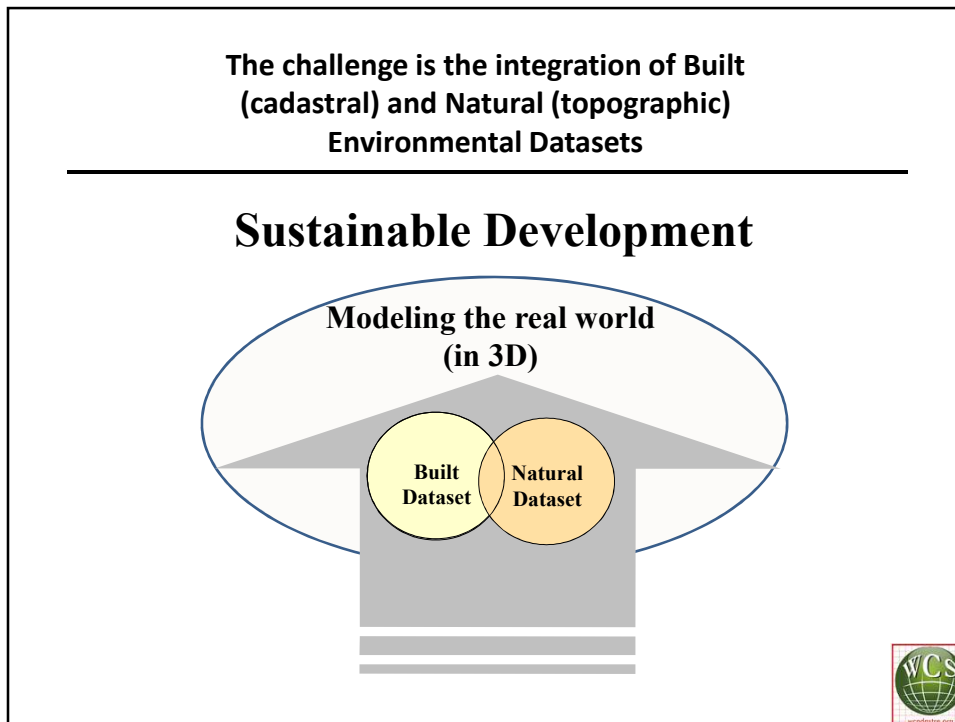
- All cadastres evolve as society evolves and as such must be continually re-engineered, fine tuned and improved
- Do not forget the basic principles and justification of cadastre
- The biggest threat to modern cadastres is complacency (content with current situation and unconcerned about challenges, self satisfaction, pleased with “business as usual”)



Sustainable development

- The “Triple bottom line”
 - **Economic** dimension
 - **Environmental** dimension
 - **Social** dimension
- and increasingly the fourth dimension of **governance**







Cadastres produce AAA land information

- *Accurate* - based on ground truth
- *Authoritative* - created within a regulatory legal environment
- *Assured* - government guaranteed

Importantly the cadastre provides an *authoritative audit trail* for other land information and services in support of spatial enablement

Williamson, 2011



Spatial Data Continuum – fitness for purpose

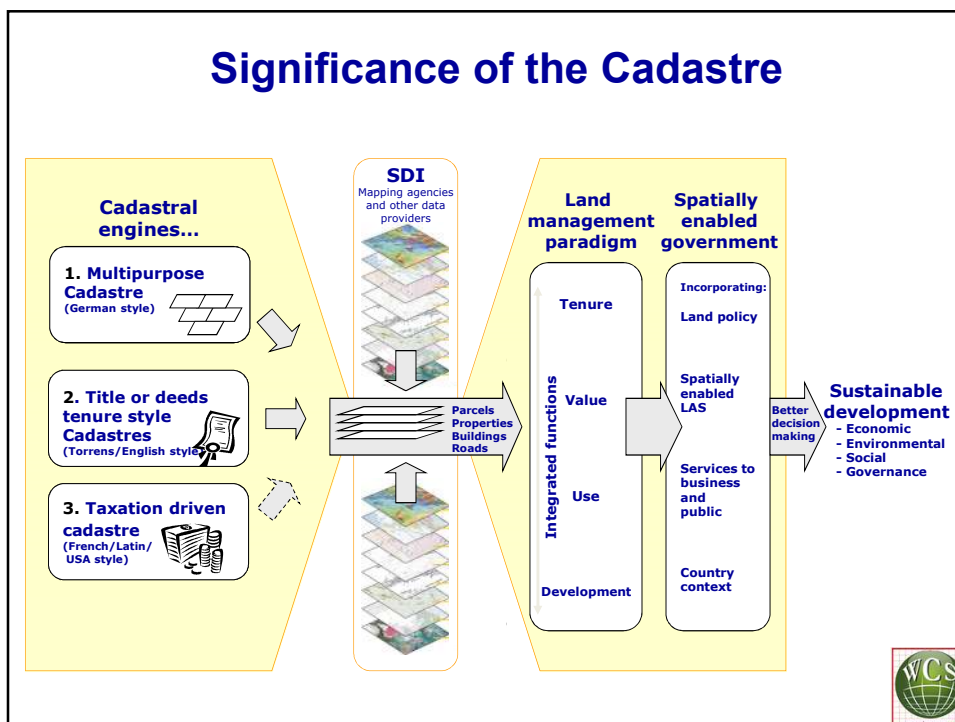




GeoTagging (Fliker, Google earth etc) Social media	Report and fix incorrect map data Personal interests	Systematic crowd sourcing (VGI) Open Street Map Registration required	Authoritative data Produced by state and federal government departments Small scale Aggregated Less dynamic	Accurate data Produced by local Governmnets Medimu to large scale Current Dynamic	AAA data (Authorartative, Accurate, Assured) Large scale Parcel based
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The basics of a cadastral system

- Digital representation of land parcels
- Information delivery and access systems
- A legal framework
- Survey marks and other physical evidence of property boundaries
- Registered or trained surveyors or technicians
- Records of surveys such as plans (in hardcopy or digital or Cloud)
- Standards for definition and surveying of land





Why cadastres? Three examples

- Australia (*similar to most developed countries*)
- The European Union
- Thailand





Australia – CADASTRE 2034

- Cadastral reform and innovation for Australia – a national strategy for 8 separate jurisdictions
- THE VISION – “A cadastral system that enables people to readily and confidently identify the location and extent of all rights, restrictions and responsibilities related to land and real property”
- The cadastral systems of Australia underpin stable and reliable registration of land based property rights. They serve as the foundation for effective land tenure transactions and in securing the legal status of property boundaries.



Enduring principles of CADASTRE 2034

- Certainty in the spatial extent of ownership
- Uniquely defined land (and/or property) that is common to all registers – ownership, value and land use
- Integrity and security of the parcel boundary system
- Strong relationship between regulators and industry
- Appropriate regulatory standards



Australian cadastral system supports (2014)

- \$1.4 trillion in housing loans secured against land titles (mortgages)
- \$5.2 trillion in total value of real property held in title (size of the Australian economy as at November 2014 is \$1.6 trillion per annum)
- Best use of this national information asset benefits the national economy by \$4.7 billion annually above normal growth
- The value of the cadastral system and land registration system is obvious



Cadastre and the European Union

- The Acquis Communautaire (Acquis) – the rules of the EU
- Privatisation of lands and the establishment of efficient land markets
- This required
 - Institution building
 - Effective free market
 - Protection of human rights
 - Environmental sustainability
 - Common agricultural policy



This in turn requires EU countries to have



- A land administration infrastructure
- A free land market
- Protection of property rights
- Documented public and private rights



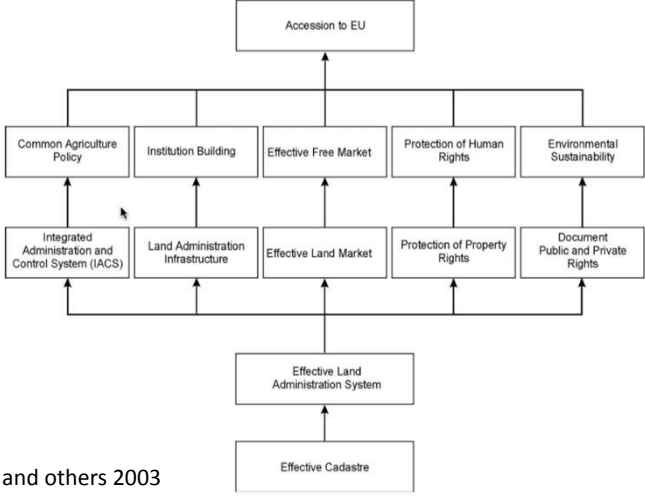
Further this requires EU countries

...to have an effective land administration system based on an effective cadastre!



The importance of this to EU countries cannot be over emphasised



Importance of cadastre to EU countries



Bogaerts and others 2003





Thailand Land Titling Project

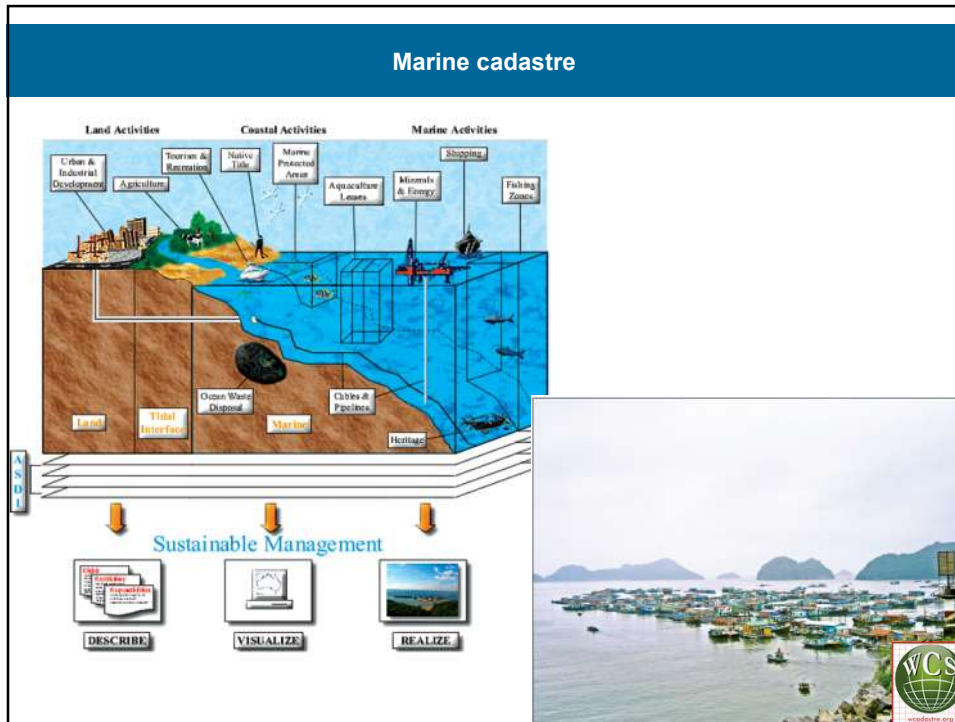


- Policy objectives
 - Security of tenure and land market in urban areas
 - Access to bank financing and on-farm investment leading to increased agricultural production
 - Social justice and reduction of boundary disputes
 - Poverty reduction
 - Land market in urban areas
- Targeted provinces adjoined Cambodia, Laos and Myanmar – why? Importance of giving the rural population a sense of national pride and something to live for.

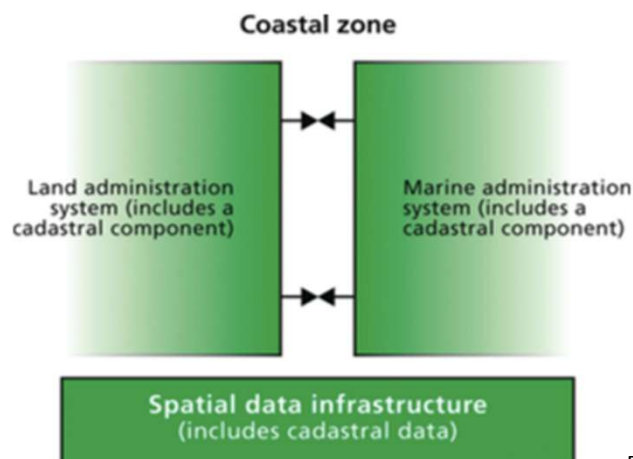
Marine cadastres



- The cadastre includes both land and the sea
- Managing the rights, restrictions and responsibilities in the marine environment
- Importantly allows a land-sea interface at the sensitive coastal zone





Successful marine administration demands seamless integration of both marine and land management





Challenges for cadastral system

- When the system works why spend \$ on it?
- If the system is not broken why change it?
- Building capacity is the key whether in developed systems, developing systems or in cadastral projects
- Education, training and research is central to building capacity
- The risks of privatisation of the cadastre



Again my key messages are:

- All cadastres evolve and as such must be continually re-engineered, fine tuned and improved
- Do not forget the basic principles and justification of cadastre
- The biggest threat to modern cadastres is complacency – simply governments often forget how important they are!



Acknowledgement

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- *Colleagues and students in the Centre for SDIs and Land Administration, University of Melbourne*
- *CADASTRE 2034 - Cadastral Reform and Innovation for Australia – A National Strategy, ICSM, 2014*
- *“Land Administration for Sustainable Development” Williamson, Enemark, Wallace and Rajabifard, ESRI Press Academic, USA 2010.*

