

# National mapping, land administration and spatially enabled government – looking back, looking forward

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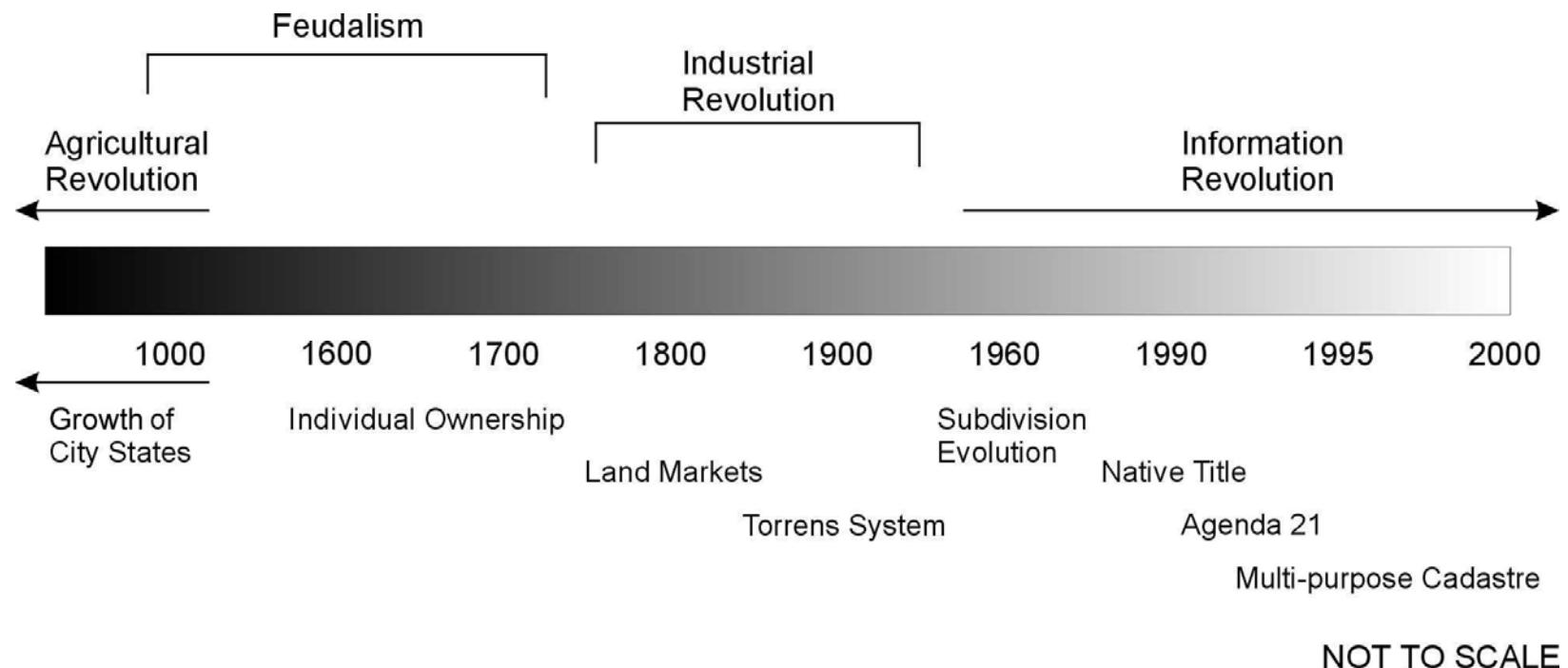
# Some background

- Involved with UNRCC-AP since 1983
- Attended two UNRCC for the Americas
- Chair, Commission 7 (Cadastre and Land Management) FIG 1994-98
- Director, UN Liaison, FIG 1998-2002
- Chair, WG3 (Cadastre) 2001-2009
- Involved with international mapping agencies, various UN agencies and World Bank for many years

# *My key message*

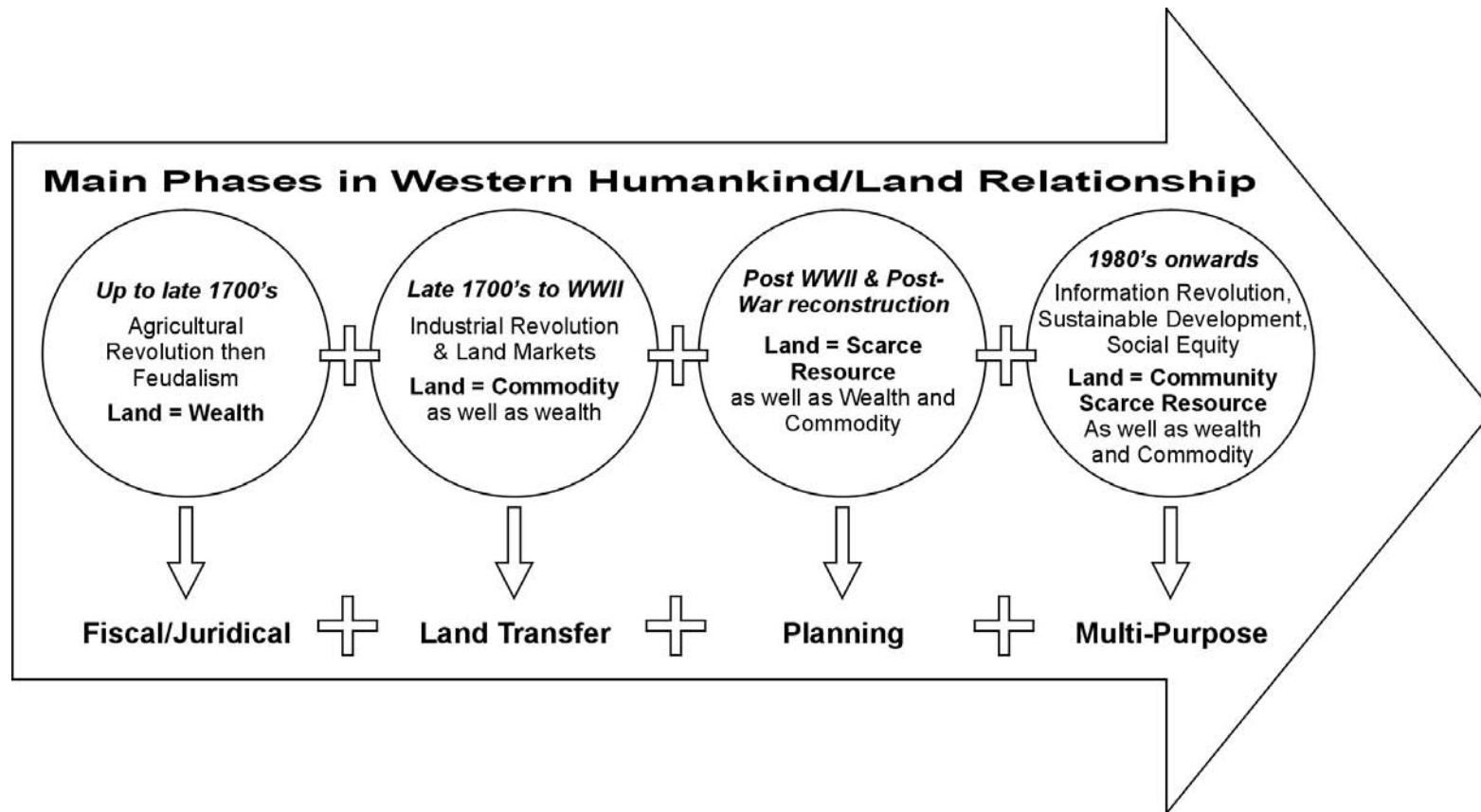
- The only constant is change
- The world has moved on since the UNRCCs were set up over 50 years ago with a cartographic/national mapping focus
- Even since the establishment of PCGIAP in 1994 with a focus on GIS and mapping, the spatial environment has changed dramatically
- ***Unless PCGIAP and UNRCC continue to evolve their relevance will be questioned***

# The people to land relationship is dynamic



Reference: Ting et al, 1998

## As a result LA also changes and evolves

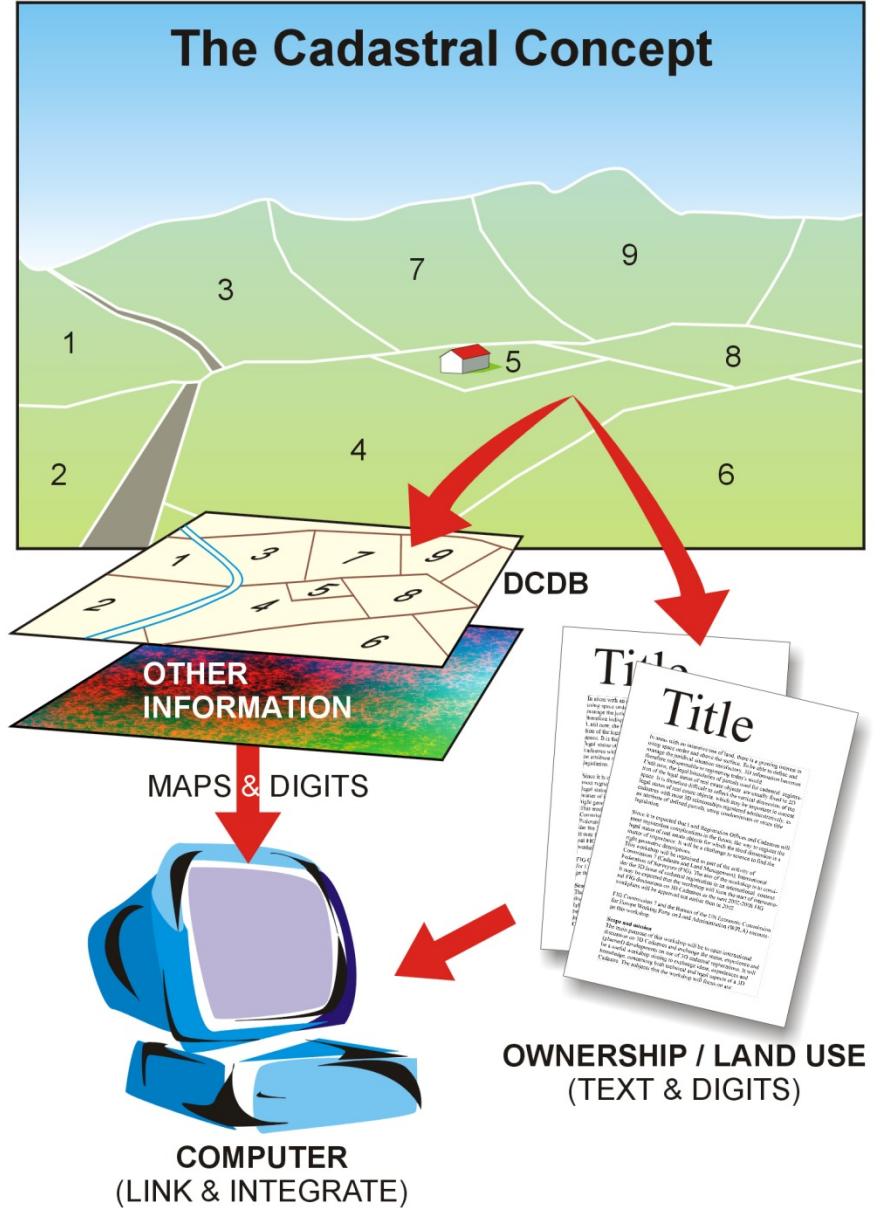


Reference: Ting and Williamson, 1998

# The cadastral concept

The traditional view of the cadastre and LA (buying, selling, leasing and mortgaging interests in land).

The new approach makes the cadastre central to information management locally and nationally.



# Land administration and ICT

New land administration with the cadastre as the central component takes advantage of ICT advances since 1970...



*However the need for a strong mandate from the UN for a forum regionally and globally in the spatial domain is as important as ever or I would argue more important than in the past*

# Understand the types of mapping, land administration and cadastral agencies

- Countries, especially smaller ones, where all functions are integrated
- Countries, especially larger ones with a national mapping or GI organization with state or provincial organisations responsible for large scale mapping, cadastre and land administration
- Countries with separate national mapping (or GI) and national cadastre and land administration
- And many combinations and variations of the above

# Looking back - UNRCC

- Major need to promote mapping and share experiences from 1950s onwards
- Focus (and rightly so) was national mapping agencies
- Dramatic impact of technology, micro-economic reform and privatization on mapping
- National mapping evolve into GI and SDI organizations, with typically major downsizing

# Looking back – cadastral and land registration agencies

- Typically very conservative
- Focus on operation of land market
- Undertook cadastral mapping, often reluctantly
- Operated with a silo mentality (and many still do)
- Lacked technical expertise of mapping agencies

So the UNRCC model served  
the international mapping  
community well until the  
1980s

# Looking back - PCGIAP

- In response to the changing mapping and GI environment the UN promoted the establishment of PCGIAP reporting to UNRCC in 1994
- Focus on **GIS infrastructure** including “*national cadastral datasets*” as well as “*Prepare guidelines and strategies to assist member nations for the implementation of cadastral development to meet individual member nation needs*”

# Looking back - PCGIAP

- Terms of Reference for PCGIAP were excellent at time – “mapping” was not included in the “aims” nor the “objectives”
- However even though PCGIAP embraced cadastral activities, membership stayed with the “directorates of national survey and mapping organizations or equivalent national agencies”
- As a result, cadastral and large scale mapping agencies were effectively cut out of PCGIAP unless those activities were in the same organization responsible for national mapping.

# Examples of cadastral agencies that could contribute considerably to a new vision of PCGIAP

- Thailand
- Philippines
- Korea
- Indonesia
- Iran etc
- However in reality most countries in the region have large cadastral or land administration organizations that can contribute to the vision of an integrated spatial information environment

# **Consequences of poor land administration**

## Spatial data and the global economic collapse

### *A sober thought on the importance and potential of integrated spatial data*

- A key contributor to the global economic collapse was the lack of effective land administration systems in the USA that resulted in a lack of information required by the US Federal Reserve Bank to make timely decisions
- A spatially enabled land administration system means that the quality of complex commodities (mortgage backed certificates) can be accurately rated and the operation of the land market (and particularly the mortgage and banking sector) can be monitored in real time

# Current situation

- Dramatic growth in availability and importance of large scale spatial data – GOOGLE MAPS
- Globally, mapping and cadastral agencies are amalgamating
- The focus is now on integrated spatial data sets (facilitated by SDI) that serve the needs of society
- Move to spatially enabled society

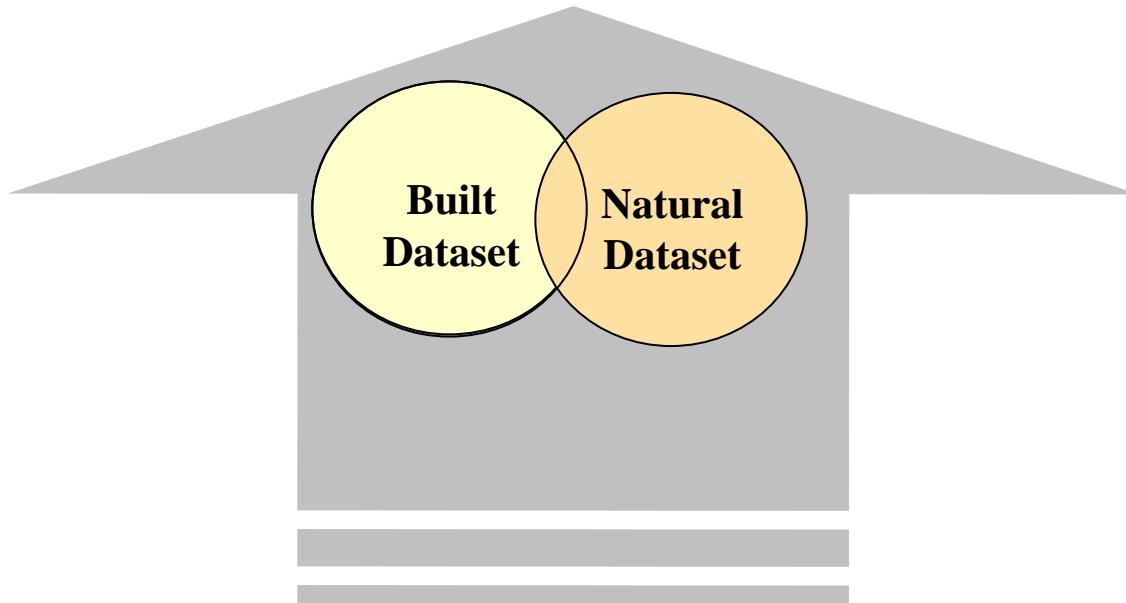
# What do countries need from spatial data and how can the UN and PCGIAP assist member countries?

- Access to integrated spatial data that links natural and built environmental data sets – a geocoded street address is a key
- Focus is on serving government and societal needs – health, security, disaster response, immigration, environment, human services, defense, economy etc
- Focus is on spatially enabling society in a transparent and ubiquitous manner

**A key challenge is the integration of  
Built (cadastral) and Natural  
(topographic) Environmental Datasets**

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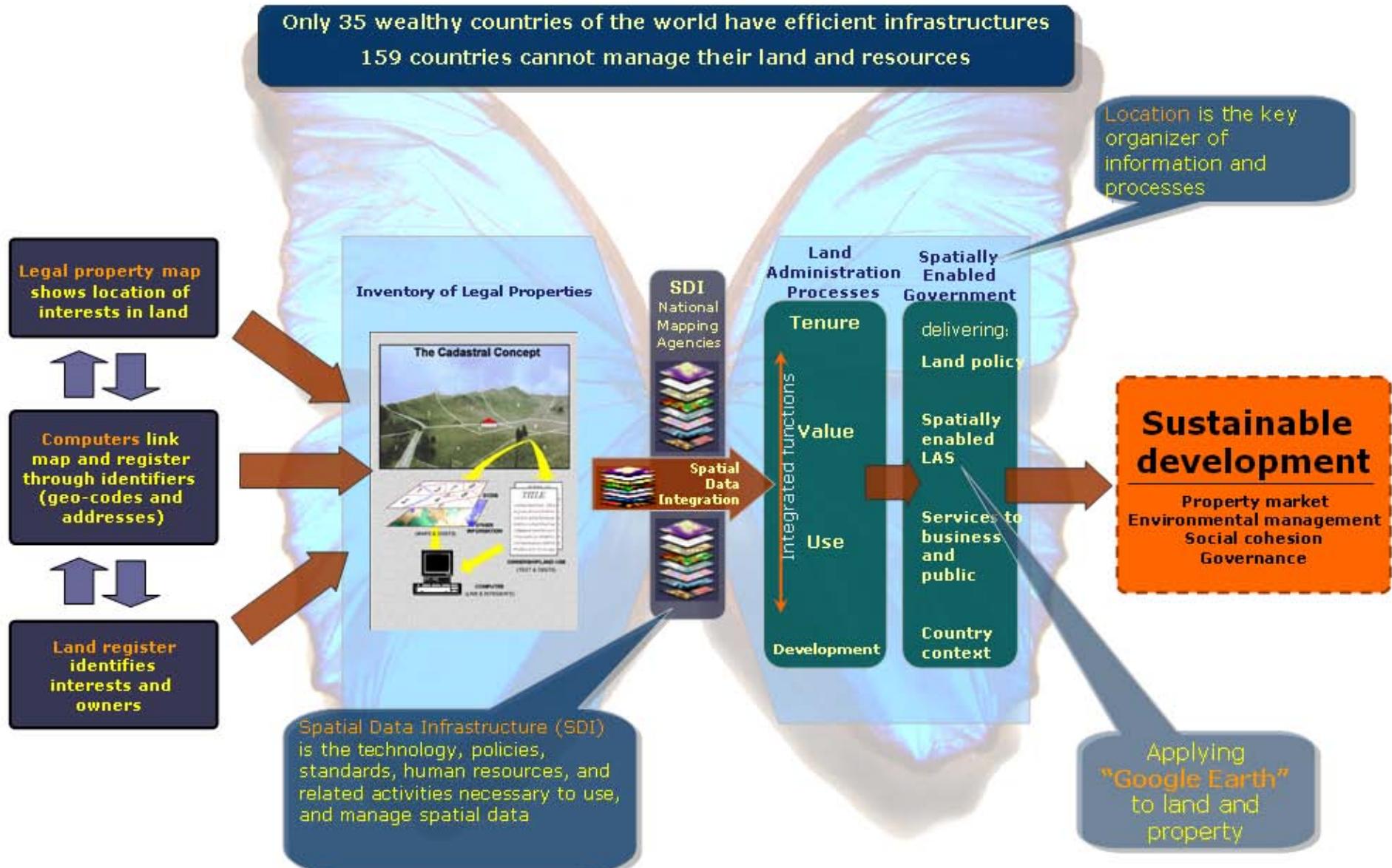
## Sustainable Development



# The future

- We will live in virtual worlds where spatial data models our whole world in 3D and even 4D
- Modeling the real world requires new strategies, new governance and new institutional arrangements

# Building Land Administration Infrastructure



# Conclusion

- The world has moved on since UNRCC and PCGIAP were created. Countries and regions need systems that model the real world
- This requires a new vision for the UN and PCGIAP – we need all spatial players sitting around the table in a collaborative environment
- The UN and PCGIAP have an opportunity in the spatial space to help make the world a better place – I hope they have the vision and drive to grasp this opportunity.