ILM - Terrain Objects, Places, and Units of Real Property

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Overview

1. The class of Territorial units.
2. The management of place names.
3. Land tenure and real property rights.
4. Change of institutions like real property

Territorial units

Number of jurisdictions and districts in Denmark:

Number of units	Name of unit Jurisdictions Districts	Map scale
10^2	Diocese (7), County (14), Court district (87)	1:100.000
	Municipality (271)	
10^3	Parish (~1200) Unit for population statistics (Settlement)	1:25.000
10^4	Township (~12.000) (Municipal planning districts) 1 square kilometer (44.000)	
10^5	Address codes in population register (~120.000)	1:15.000
10^6	Real Property units, and dwellings, etc. ~2 mio)	1:4.000 1:2.000

The Danish cadastral parcel reference number

(Terminology, cf. Dale & McLaughlin, 1989: 39f) consisted originally of the following elements:

- Parcel number and superscript letter (7^{a}),
- Township, Parish,
- Court district, and County

Now, following municipal reform of 1970

- Parcel number and superscript letter (7^{a}),
- Township-with-Parish
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- Municipality

Territorial units and the development of land administration

Development of land administration includes, probably in parallel:

- Policy preparation and development
- Drafting and adoption of new legislation
- Implementation, based on some national Land Information System (nLIS)
- Education of staff, involvement of professionals

Territorial units are among the record units of nLIS

Territorial units and the development of land administration

Context:

- Implementation includes nLIS
- Either policy based, or 'spontaneous', bottom-up.

In both cases: Territorial units needs to be analysed, to catch specific opportunities

Examples follow:

Geographical units for planning purposes

- Nordic Conference of Statistical Agencies ('Nordiske Statistiske Chefmøde') in 1960 adopted a common definition of the spatial unit of a 'locality', 'settlement', or urban district (Danish: 'bymæssig bebyggelse') to be used for population census.
- Independent of references to the administrative structures mentioned above, as it refers to number of persons (200), and distances between buildings (200 m).
- By 1970 the definition was further supported by the UN Economic Commission for Europe

Stubkjær, Erik (2001) Spatial, Socio-economic Units and Societal Needs

Four+ categories of territorial units

- Jurisdictions (formally established by ruler)
- Places (informally agreed by community)
- Regions (defined ad hoc by scientist)
- Districts (defined by logistics staff, available data)
- perhaps also: Areas (mathematical, abstract concept)

Formalisation of Place Names

Tentative overview:

- Burrough / municipal assignment of street names in cities (1600->)
- Military mapping services record place names on topographic maps (1800->)
- Linguists study distribution of place names (villages), indicating age of settlement (1900->)
- National Comittees for place names, balancing cultural, administrative (post, municipalities), and other concerns
- Road legislation entitles municipalities to assign road names (-> 1950 ->)
- Coding of jurisdictions, post districts, and road names (1960->)
- Denmark: NIS of Building and Premises presupposes complete naming and coding of habitated roads (1976)

Influencing and neutral referents for place names.

Influencing referents	Neutral referents
Historical events Person names	Location names Terrain features Names of flora and fauna

Place naming is a cultural/ political affair

Names for same street during 1900s:

- Vinograd Avenue
- Foch Avenue
- Hitler Avenue
- Stalin Avenue
- Vinograd Avenue

cf. Ho Chi Minh City (former Saigon)

The name of "Pusher street" (Christiania) was not invented by authorities!

Identification of geographical units

Means of identification of geographical units (means of separating/discerning one unit from another)

- Place names, including street names (name of towns, squares, streets, etc. rememberd by people)
- Sign plates (on streets, on rooms, etc.)
- Index maps (e.g the cadastral map, or maps of condominium units
- Centroid or geocode coordinates as identifier, and
- combinations of the above mentioned.

Identification of geographical units

Boundary marks may define (the boundary of) a property unit, but the marks do not identify the unit.

Experience from the development of the Danish Building and Dwelling Register:
Coordinate systems are not the only means of expressing spatial relations. Analytical geometry has to be supplemented by topology ('neighbour-geometry').

Application of Stevens' scales of measurement

Example	Dimension	Scale of measurement
Street naming	N/A	Nominal
House numbering	1	Ordinal
Road centerline	2	Metric
"Metes and bounds"	2	Metric
Property map	2	Ordinal, Metric

Spatial Reference Frames

Moving, human scale	Fixed, human scale	Moving, planetary scale
Human body Vehicle	Instrument Terrain elements: • road • landmark • town, etc.	Earth Sun (inertial) system

Physical bodies which may provide the basis for a spatial reference frame.

The road system as a spatial reference frame

- Road names are shown on plates in towns AND countryside
- House numbering scheme (plated!) defines orientation, e.g. smaller house numbers closer to city center than larger numbers
- In multi-storey buildings, the floors are named consistently (basement or ground floor 0 or 1)
- In multi-storey buildings, the appartments are identified according to formalised practise

The Relevance of *formalisation* of Post Addresses

Makes sense to ordinary people, post, transportation, and administrative purposes:

- collection of utility fees (electritity, water, etc.)
- combining fee collection with collection of property taxes
- small area statistics, that is (geo-spatial) data for planning purposes
- cross reference key for NISs, managed by different ministries
- place names may become an issue in local (municipal) politics

Experiences made in several European countries: DK, N, UK, F, Portugal, .. using the post address system for GIS analyses by cross-referencing with digital maps (geocoding)

Formalisation and administration of place names

Place names -> formalisation -> uniform location designator system

Ed Young, eddon@ozemail.com.au, 2002

Streamline ("re-interpret" K. Deininger) the following:

- the place name practises, as expressed by village inhabitants
- potential carriers (poles?) of street signs, and their functional and artistic design; present practises
- possible body responsible for approving names within the local jurisdiction
- local information system for recording the place names (to be used by local committee, avoid duplicates, etc.), with linkage to nLIS
- governmental consultative committee, and
- ordinance for adopting and managing place names, house numbers,etc.

Summary on Territorial Objects and Place Names

- The geodetic, national coordinate system is not the only spatial reference frame
- The cadastral identifyer is not the only territorial identifyer
- In a country, Territorial Objects ought to be studied systematically
- A policy aiming at versatile use of formalised practise regarding Territorial Objects may support land administration generally

Land tenure

is a relation between person (owner), land and society.

Henssen (1995) mentions the following tenure systems:

- Anglo-American "in theory feudal" [applies to Commonwealth, not to US]
- Continental European (allodial system, ownership basically independent)
- Socialistic (Public ownership, individual right of use, planning for optimal use of land)
- Islamic (ownership/stewardship defined by religious world view)
- Customary law (community based rights; non-written rules)

Real Property Rights: Overview

Dispositions: The content of Real Property Rights	Unit of Real Property: The object of Real Property Rights
• Harvesting	• Land law definition
The context for dispositions regarding Real Property	
Restrictions of R P R	Infrastructure of R P R
• Compulsory purchase	• Cadastral systems

Real Property Rights: Dispositions

- Physical dispositions
  - use, possess, gain usufructs
  - construct, fence
- Legal dispositions
  - sell, inherit
  - mortgage, use as collateral
  - lease, rent
  - subdivide, change shape
  - grant easement

Real Property Rights: The Property Unit

A piece of the surface of the Earth, as defined by court rulings

- horizontal and vertical boundary
- delimitation of fixtures relative to movables

Definitions according to statute laws

- Cadastral law
- Land registry law
- Agricultural law
- Property taxation law
- Condominium law

Real Property Rights: Restrictions

- Compulsory purchase (expropriation)
- Purchase restrictions, incl. preemption rights
- Spatial planning
- Easements, e.g. right of way
- Adverse possession

Real Property Rights: Infrastructure

- (Police) Protection of privacy
- Solving title and boundary disputes
- Performance of forced sales
- Operating credit market
- Maintenance of cadastral and land registry system
- Protection of boundary marks

Question for land management projects: Are these elements in place, and operating well?

Institutions, and institutional change (1)

Institution: "The humanly devised constraints that shape human action" (North, 1990: 3).
These constraints are created through 'collective intentionality' (Searle, 1995: 23f).
".. the creation of institutional facts may proceed without the participants being conscious that it is happening according to [the form 'X counts a Y in C']" (Searle, 1995: 47)
"In the course of consciously buying, selling, exchanging, etc., they may simply evolve institutional facts" (: 47)

Institutions, and institutional change (2)

We need a development model of institutions.

Such a model could possibly be the outcome of an activity labeled 'institutional analysis and design', extending from the well-known 'information systems analysis and design'

Course offered on 'institutional analysis and design' (Ostrom, 2002).

But institutional change is 'invisible'.

- "It will turn out that 'design' [of institutions] is a rare and unlikely mode of change; it is even less likely that the activity of 'designing' will be recognised, acknowledged and remembered as such." (Offe, 1993: 10-11).
- "[persons and circles] represented, at the round-table talks, in the media and elsewhere the moral infrastructure and normative meaning of the order to be built." (:16)
- The negotiation of modified institutions was based on ".. the presence of a model of the new institutional order that is typically not invented on the spot, but 'imported' and suitably adapted from more or less remote points in time or space. Institutional designs are typically copies, and they are frequently advocated as such." (: 15).

Summary: Land tenure and property rights

- Land tenure is culture specific, and hence difficult to change
- nLIS may possibly be designed and implemented, but instititions like property rights can probably not be rationally designed and implemented
- Institutional change is a research issue. Task for LM projects is to "re-interpret" (~= change, catch the opportunity)

Summary

- Monday: Listed course resources: Land Tenure terminology, OICRF, etc. Identified course tasks

- Territorial Objects is a field that can (and should) be investigated
- The human body and the street network provides for spatial reference frames that everyone uses and understands
- Property rights are described in basic (not legal) terms
- Institutional change is an issue to explore

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