The Cadastral System in Denmark

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A Short Historical Outline 1

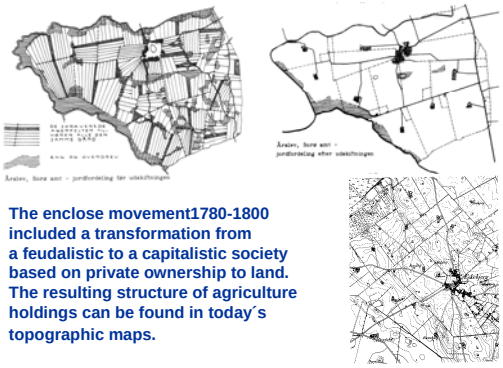
1688 First cadastre in force
1780 Enclosure movement
1806 Provision for creating a new cadastre for taxation purposes
- total mapping using the enclose movement maps
- valuation of the yielding capacity of the soil
- cadastral register, parcel number, area, valuation

1844 Cadastre in force
- updating provisions, private surveyors, land book provisions

1903 Valuation reform
- based on the property market value

1926 Land registry reform

The Enclosure Movement



The enclose movement1780-1800 included a transformation from a feudalistic to a capitalistic society based on private ownership to land. The resulting structure of agriculture holdings can be found in today´s topographic maps.

A Short Historical Outline 2

1963 New cadastral act
- Integrated land use control, surveyors tribunal

1970 Administrative reform
25 regional authorities became 14
1400 local authorities became 275
decentralisation of decision-making power

1975 Planning reform
urban/rural zoning
comprehensive spatial planning at regional and local level

1986 Commencement of digital cadastral reform
cadastral register computerised
2,5 mill land parcels, 1,5 mill properties

A Short Historical Outline 3

1990 Control Point Register computerised
360,000 control points

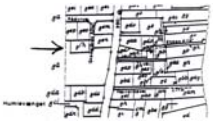
1991 Legal Cadastral Reform in force
Total legal revision and modernisation

1997 Digital reform completed
15,000 analogue cadastral maps computerised

1998 Cadastral Information on the Web
2000 Land Book computerised
2001 Digital lodgement of cadastral data
2002 Public Information Server
2003 Cadastral Infrastructure - reengineering

The Cadastral System

The Cadastral register identifies the land parcels by number and area

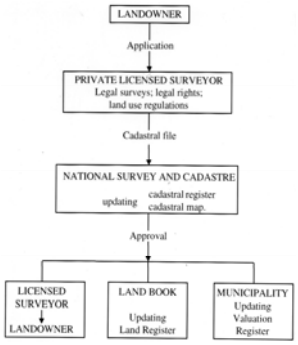


The Cadastral map identifies the land parcels geographically

The Land Book secures the legal rights based on the cadastral identification

The cadastral measurements identify the position of the property boundaries

The Cadastral Process



Types of Cadastral Work

- Parcelling Out
  - Subdivision of existing properties
  - Cadastral registration (subdivision) is necessary prior to entering any deeds or mortgage that relates to a part of an existing property
- Amalgamation of Properties
  - Legal rights of ownership and mortgage must arranged
  - prior to cadastral registration
- Area transfer between properties
  - The legal rights of ownership and mortgage must be arranged prior to cadastral registration
- Rectification
  - Errors, natural boundaries, adverse possession, rights of way

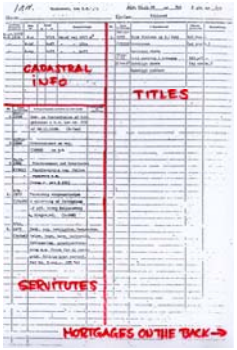
Boundary determination

- Monopoly for the Private Licensed Surveyors
  - According the Surveyors´ Act
- Process
  - Comparing the cadastral information to physical conditions, fences..
  - If discrepancies: the surveyor must involve the landowners and clear up the reason
- Adverse possession
  - 20 years of possession leads to a proscriptive right: legal ownership
- Boundary disputes
  - The landowners must apply to a licensed surveyor, acting as a judge
  - Formal process involving the landowners to achieve an agreement
  - If agreement can not be reached – the case goes to court
  - Around 40 cases per year, less than 5 cases goes to court.

The Land Transfer Process - The Land Book

1. Agreement between the parties - a real estate agent may be involved. The signed agreement is legally binding between the parties.
2. A deed is drafted and signed by the parties and witnesses - a lawyer may be involved. The deed refers to the cadastral identification.
3. The deed is checked and entered in the land book at the local district court. The title is thereby secured against legal claims from any third parties.

Subdivision and cadastral registration is needed prior to this process when purchasing a part of a property



Cadastral Reform - The Digital Cadastral Map

Conversion from analogue to digital in a two stage process:

1. Control points and connected cadastral surveys form a "skeleton map" (urban 40%, rural 20 %)

2. Digitising and fitting in the rest by transformation

The Digital Cadastral Map - from analogue to digital

An analogue cadastral map from 1983 updated over about 100 years. The map is an "island map" and is not linked to the national grid.

The same area as a print of the digital cadastral map 1993. The map is linked to the national grid and shows only the current cadastral situation.
The boundary points shown by circles are established in the map using control points and legal survey measurements.

The Digital Cadastral Map – the basic layer

The cadastral layer presents the basic information on land rights to be combined with digital topographic maps or ortophotos showing the use of land.

Some discrepancies between the cadastral registration and the physical boundaries may appear. This can be solved only through the process of boundary determination

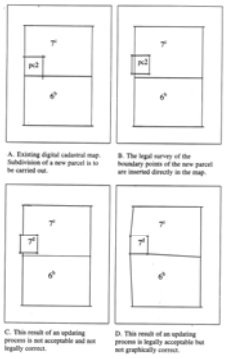
The Digital Cadastral Map - updating and upgrading

In the analogue map new boundaries were adjusted graphically to the position of existing mapped boundaries.

In the digital cadastral map any new cadastral measurement will be used for adjusting the position of the existing boundaries.

This will establish a process of continual improvement of the accuracy of the map - a dynamic system.

The system, however, calls for an educated use of the map.



The Digital Cadastral Map
- a legal map tailored for integrated land administration

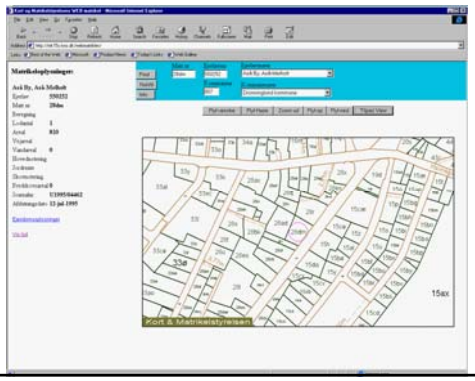
Strengths:

- Countrywide; based on the national grid
- Metadata
- Dynamic updating and upgrading

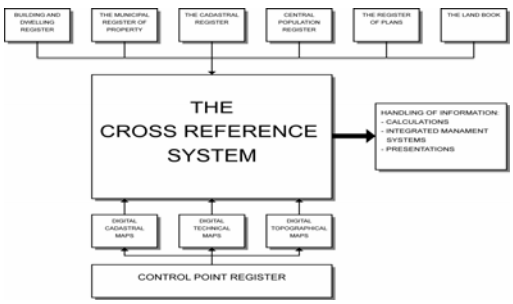
Weaknesses:

- Accuracy varies
- Tension between the (legal) cadastral map and the (physical) topographic map
- Demand for an educated use
  - understanding the nature and the origin of the cadastral map

The Web-Cadastre

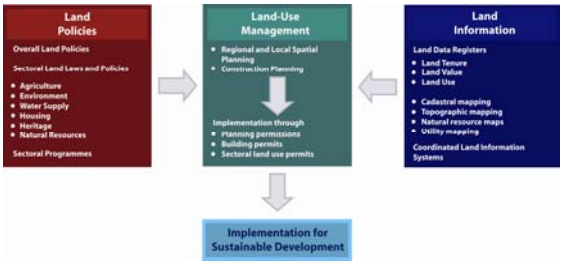


The GIS Concept



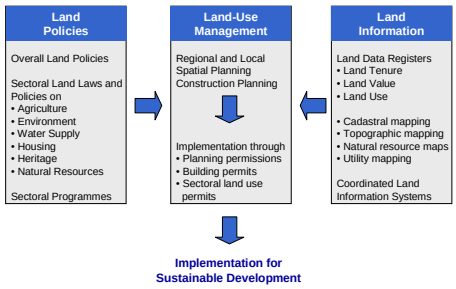
Spatial Data Infrastructure

Integrated Land-Use Management



Integrated Land Management

for Sustainable Development



Conclusions

- The Cadastral System is simple – very simple
- The Cadastral Infrastructure is very complex
- The Concept Land Management is well established

Trends

- Focus on Infrastructure and Institutional constraints
- Coordinated geo-data portal
- Improvement of the accuracy of the Cadastral Map
- Integration of the Land Book and the Cadastre
  - **Land ownership in the cadastral register**
  - **Easements shown in the cadastral maps**
  - **Mortgage registered as an asset paper in connection shares ets.**

The Nordic Way

Country	Denmark	Norway	Sweden	Finland
Area	43,000 sq. Km	324,000 sq. Km	450,000 sq. km	337,000 sq. Km
Population	5.2 mill	4.2 mill	8.6 mill	5.0 mill
Properties	About 1,5 mill	About 2 mill	About 3 mill	about 2 mill
National cadastral authority	National Survey and Cadastre under the Ministry of Environment	National Mapping Authority, under the Ministry of Environment	National Land Survey under the Ministry of Environment	National Land Survey under the Ministry of Agriculture
Cadastral surveys	Licensed surveyors in private practice	Municipal Survey Authorities; Private Licensed surveyors will be introduced	State Survey Authorities at county level; some Municipal Survey Authorities	State Survey Authorities in rural districts; some City Survey Authorities
Property Register Authority (land parcels)	National Survey and Cadastre maintaining the cadastral register and the digital cadastral maps	Municipal Survey Authorities; and the National Survey Authority maintaining the GAB-register	County and Municipal Survey Authorities; the National Land Survey maintaining the Land Data Bank System	District and City Survey Authorities the National Land Survey maintaining the Real Estate Register
Land Register Authority	Local district courts (Ministry of Justice)	Local district courts (Ministry of Justice)	Local district courts (Ministry of Justice)	Local district courts (Ministry of Justice)
Land Information System	Interactive subsystems linked together through a Cross Reference register	GAB – register linked with the Land Book	Land Data Bank System	Central Information System on Real Estate Data