

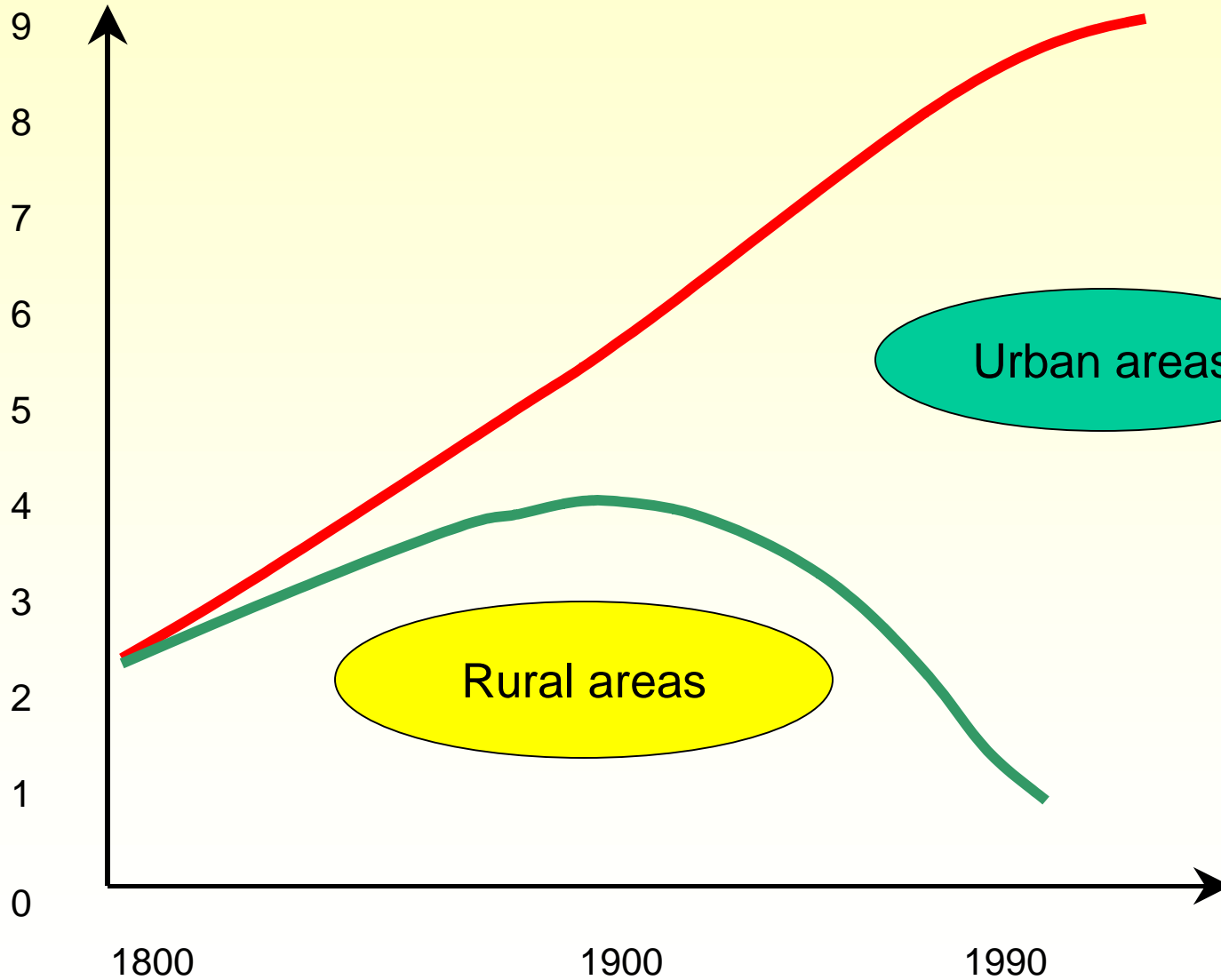
Land Consolidation in Sweden

Presentation by Tommy Österberg



Development of population in Sweden

Millions of inhabitants





Land in Sweden, areas

	<i>1,000 km²</i>	<i>%</i>
<i>Cultivated land</i>	36	8
<i>Forests</i>	240	53
<i>Populated areas</i>	13	3
<i>Swamps</i>	50	11
<i>Mountains</i>	72	16
<i>Lakes, rivers</i>	39	9
<i>Total</i>	450	100



Land in Sweden, ownership

	<i>Area %</i>	<i>Value</i>
<i>Private owners</i>	50	>50
<i>Forest companies</i>	27	<27
<i>State, municipalities</i>	23	<<23



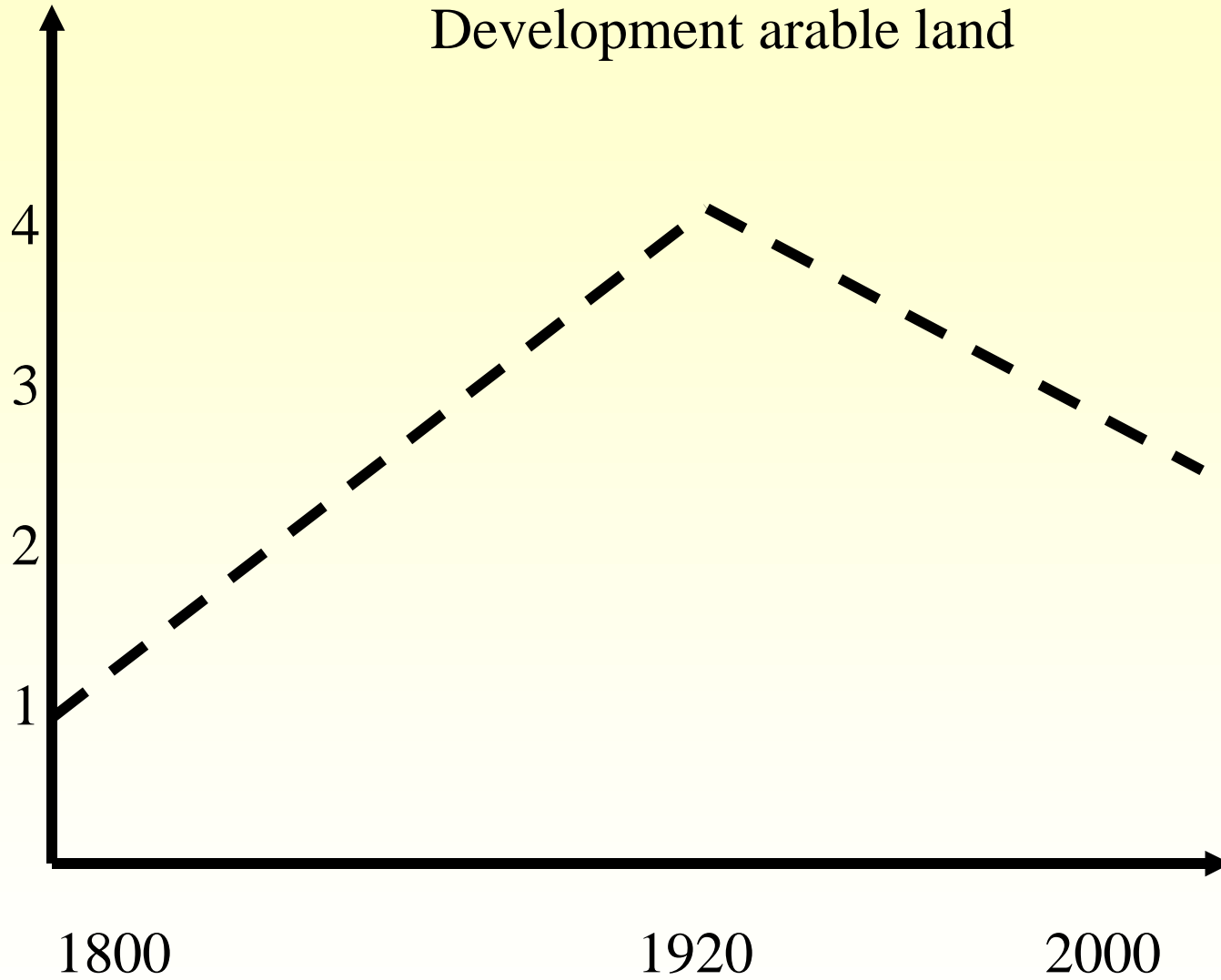
Land consolidation

- 1750- Great parceling (Storskifte), arable land, up to 4 parcels per property unit
- 1800- “One parceling (Enskifte/Enclosure) One parcel per property, moving of houses)
- 1826-1926 Laga skifte, all land, up to 4 parcels, moving of houses, about 20 million ha, 300 000 farmers,
- 1948- sporadic land consolidation based on acquisition policy and land bank

Million Hectars

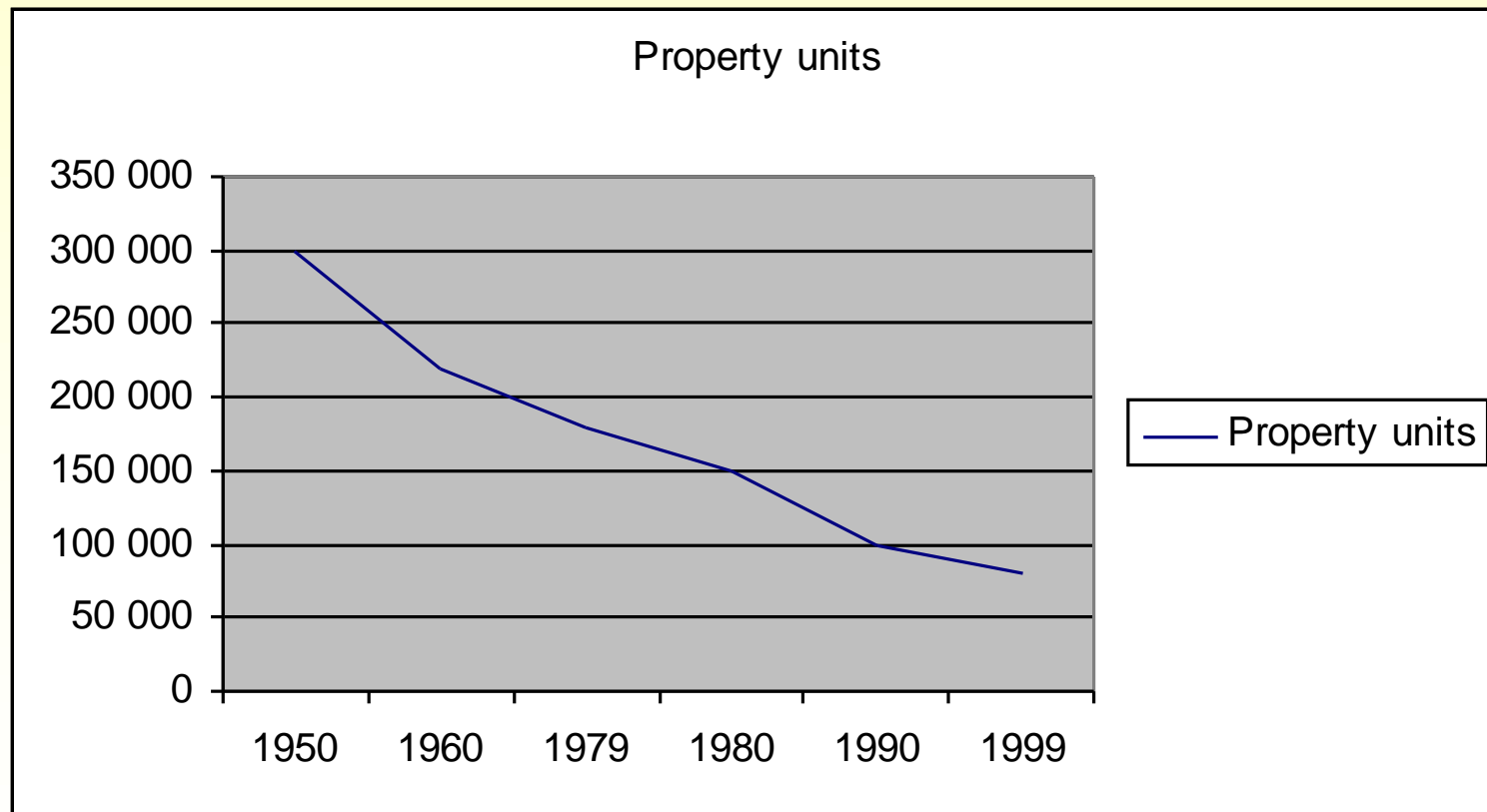


Development arable land

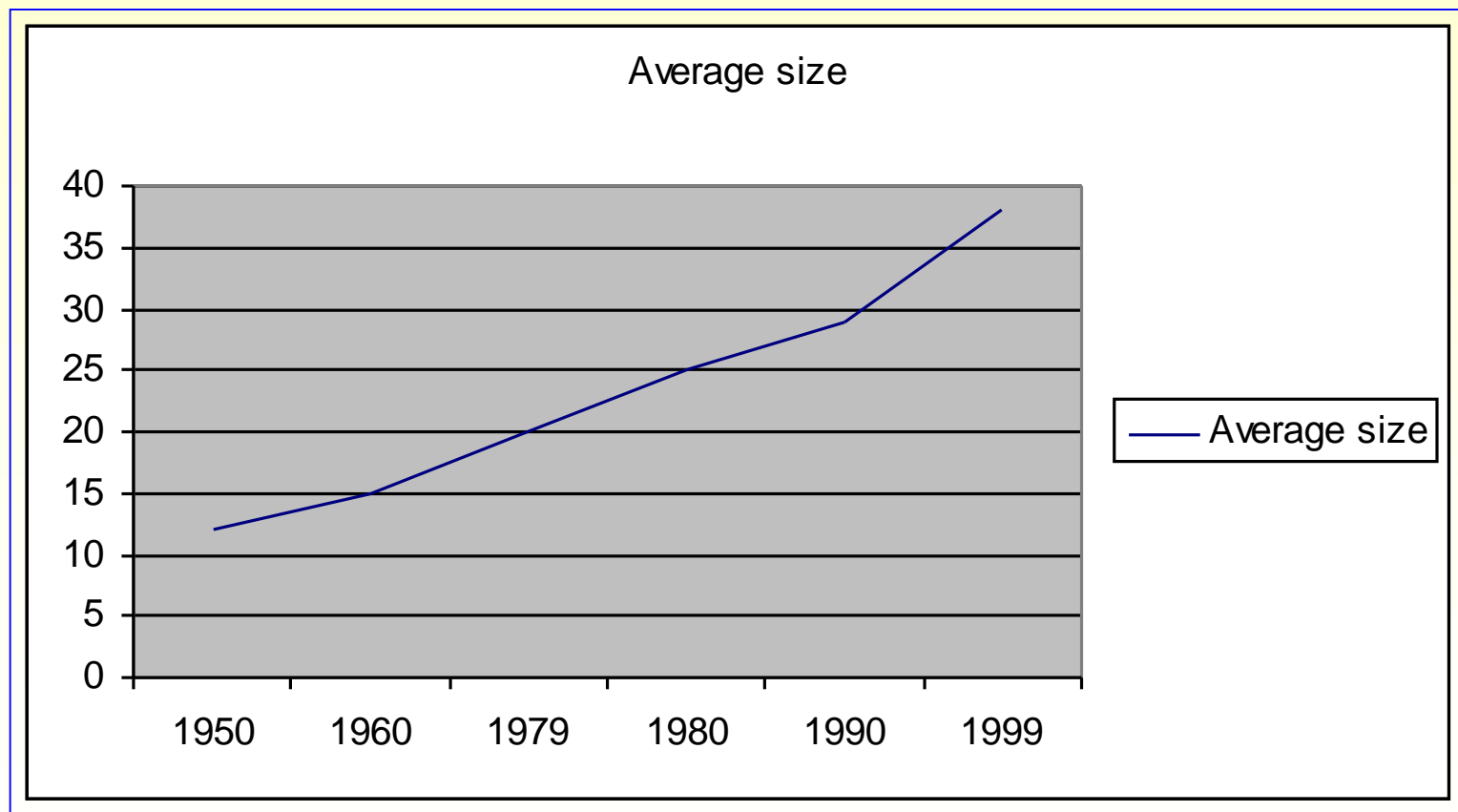




Property Units Agriculture



Average size arable land hectar





Agriculture in Sweden

- q Number of farms 1999 aprox. 80 000 units
- q Number of farmers aprox. 23 000 families
(full-time workers)
- q Statistics
 - 2 - 10 ha 26 000 units
 - 11 - 20 ha 17 000
 - 21 - 50 21 000
 - 51 + 16 000
 - Average area** 37 hectares per farm



Leasehold



Cadastral characteristics of Dalarna

- q Unique fragmentation of properties & parcels
 - q small size
 - q narrow & irregular shaped parcels
 - q badly maintained boundaries
- q Complicated ownership conditions
 - q frequent joint properties
 - q frequent co-owned properties

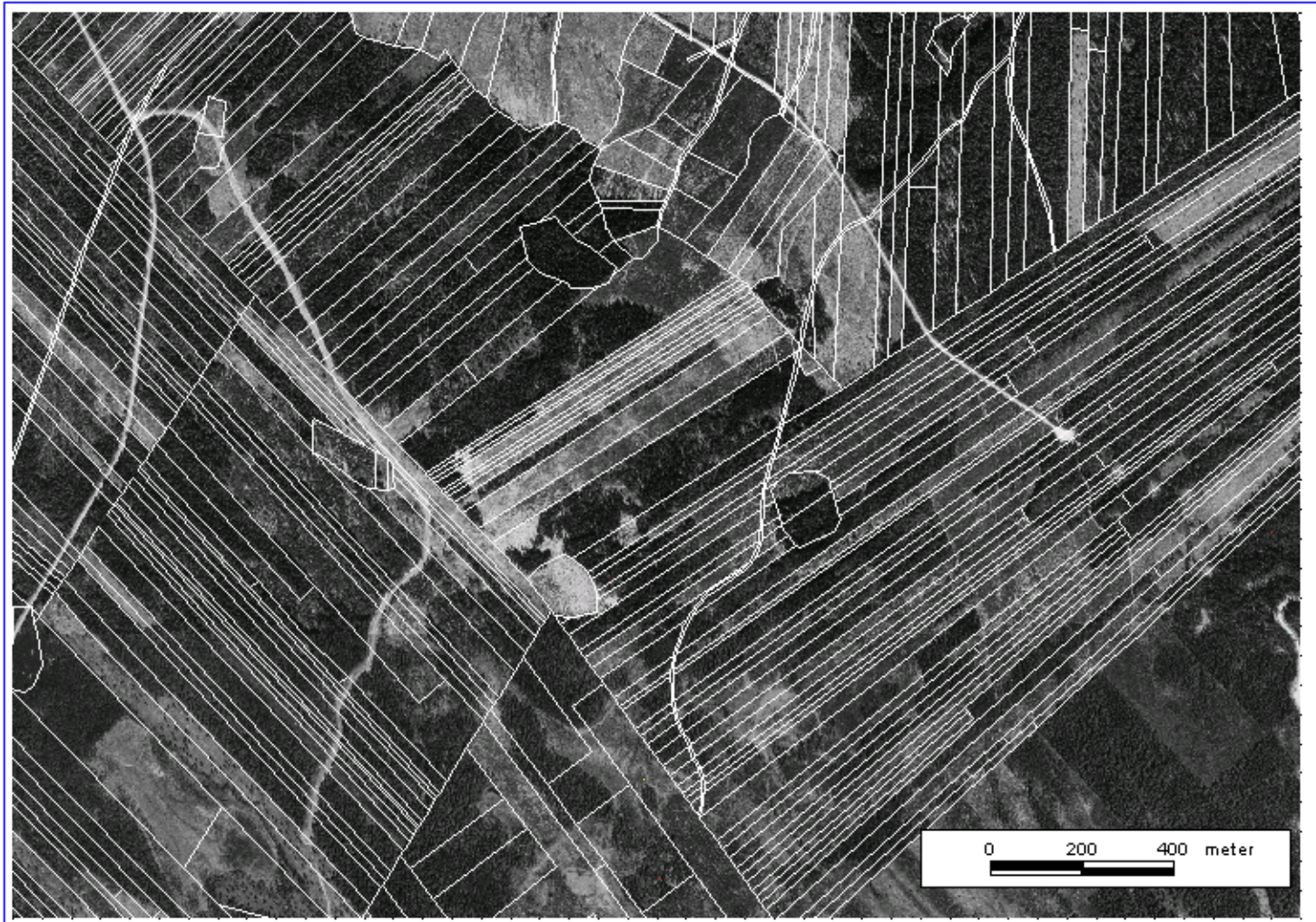
Land reforms in practice in Dalarna



A. Adjudication

B. Land Consolidation

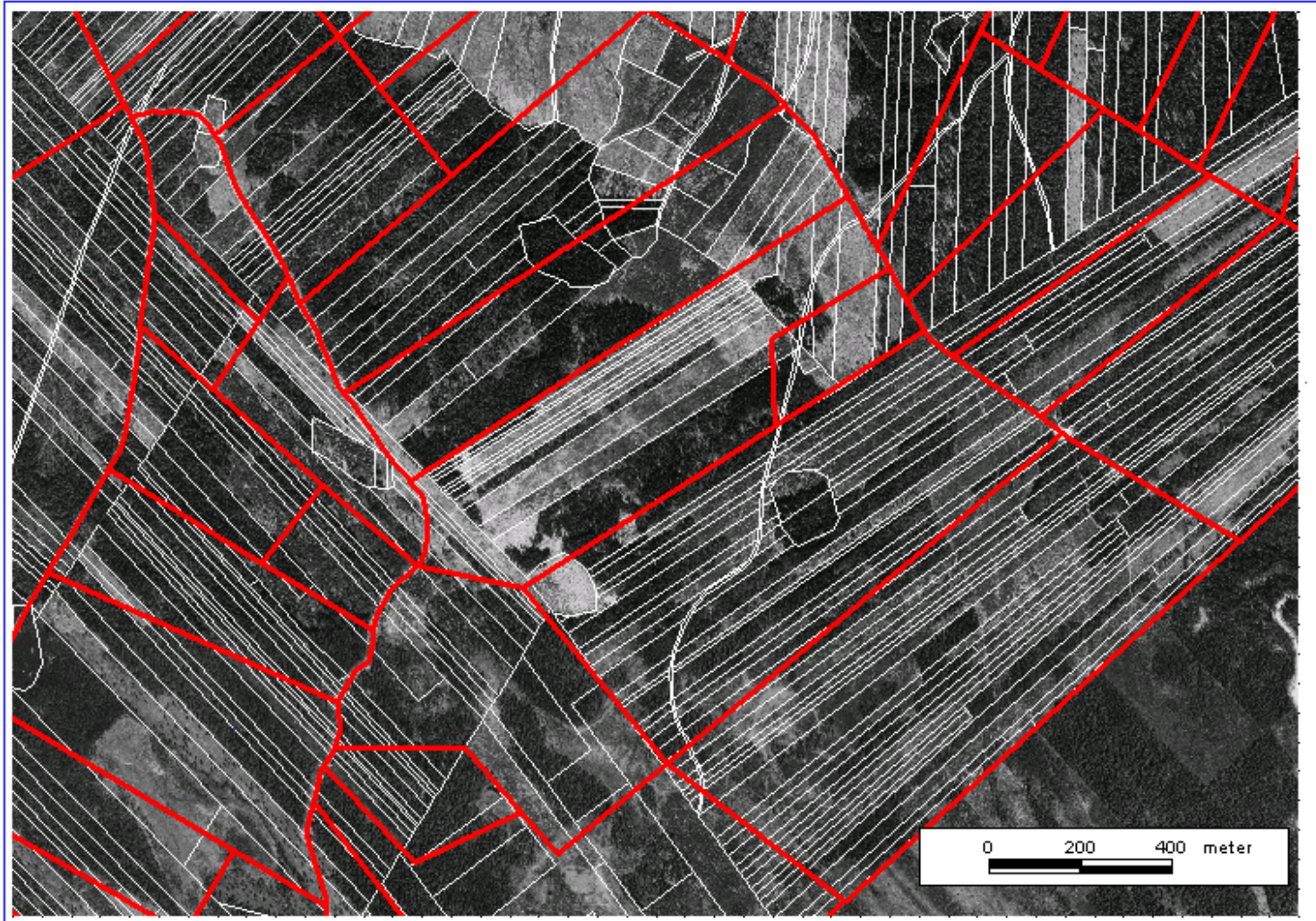
Fragmented forest area



Mr Jonsson's fragmented property



Consolidated forest area





Bonäs -Våmhus Land Consolidation

Structural improvements on forest land

	<i>”Before”</i>	<i>”Afterwards”</i>
<i>Property structure</i>		
<i>Properties</i>	ca 6 000 st(7,4 ha/ st)	430 st(103 ha/ st)
<i>Parcels</i>	ca 21 000 st(2,1 ha/ st)	800 st(55 ha/ st)
<i>Joint properties</i>	1 300 st	5 st
<i>Ownership structure</i>		
<i>Jointly owned prop.</i>	ca 3 500	ca 170 st
<i>Jointly owned parcels</i>	ca 14 000 st	ca 300 st
<i>Length of boundaries</i>	ca 8 000 km	ca 1 000 km

Mr Jonsson's consolidated property





Technical development

- q **GPS** - more effective surveying
- q **GISOM**
 - q effective data capture from the central databases (Real Property Register/ Cadastral Index Map)
 - q efficient tool for analysis and for reallotment design
- q **Valuation**
 - q photo-interpretation
 - q field inventory
 - q control inventory (adjustments for bias)
 - q inspection by the owners

Methodology

- q Information meetings with the owners
- q Dialogue with the owners
- q Preliminary reallotment design
- q Trial of Public opinion
- q Field inventory
- q Definite reallotment design
- q Surveys of the "new" boundaries
- q Decision making



Overlay-techniques in Land Consolidation

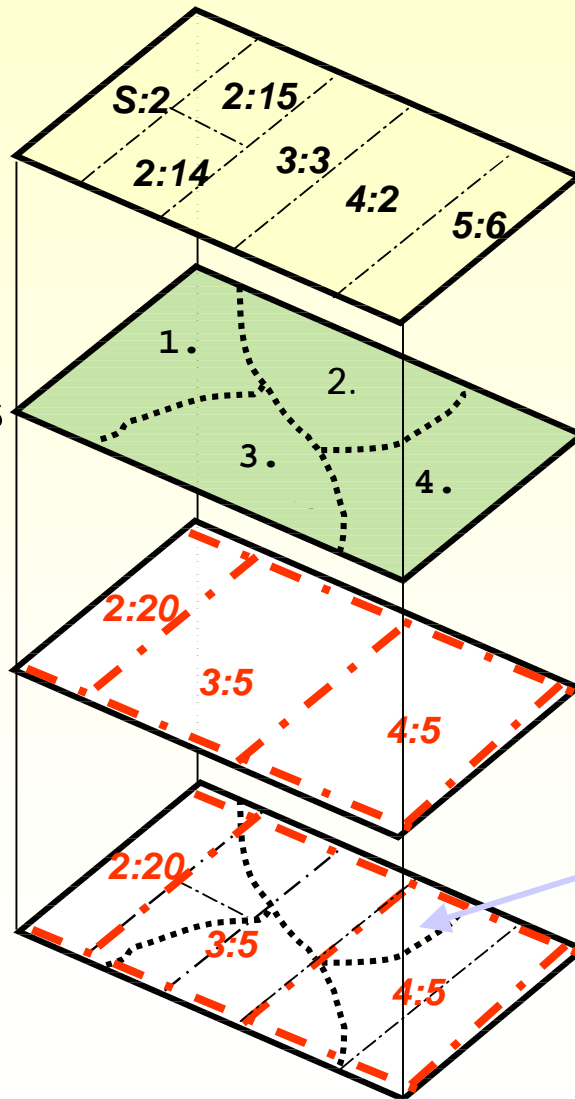


Layers

- Properties

- Forest stands

- Reallotment design



Economic settlements are calculated by intersection between

- "old" properties
- forest stands
- "new" properties

Each little figure has information about:
previous owner, new owner and value



Cadastral Procedure

-Characteristics

- q Private and public interests are considered
- q Democratic tool with ambition to achieve consensus and user participation
- q Secure, simple, neutral, cost-efficient
- q Appeals to court are rare

Cadastral Authority



Responsible for the whole process from start until finish

- q Co-ordinator of information, process and decisions
- q Investigator
- q Negotiator
- q Competent to make decisions

