



Automatic estimation on the scale of abandoned agricultural parcels and natural succession in Poland

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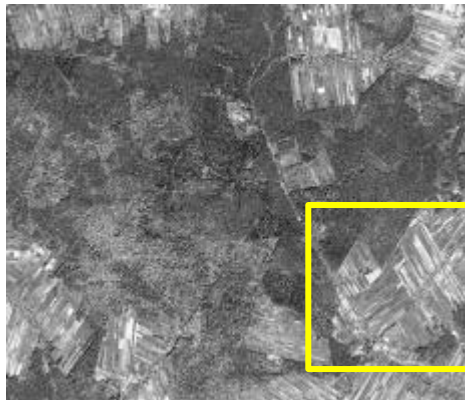
*** landConsult.de, Schenkenzell, Germany*



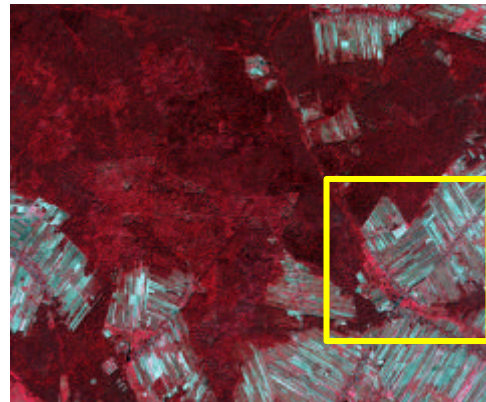
Test area and VHR Data



- South Poland
 - Swietokrzyskie Voivodship
 - Staszow municipality (Powiat)
 - Mostki cadastre map - raster
 - QuickBird data
- MS + PAN 15.09.2003



QB PAN



QB 432_PAN

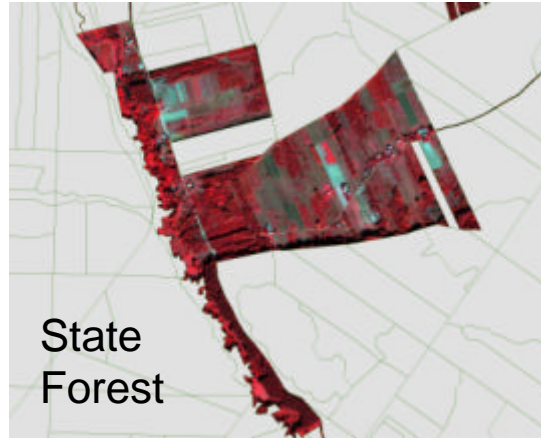


QB 321_PAN

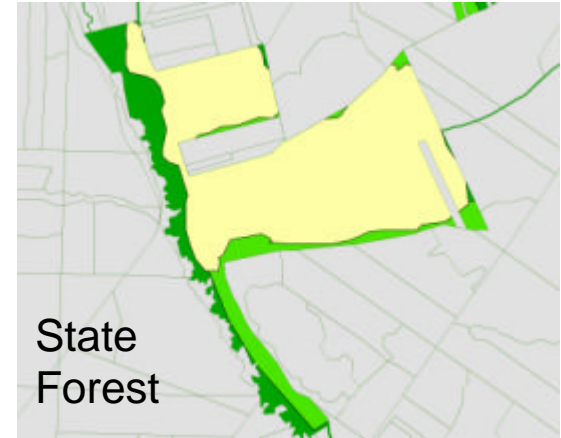
CORINE Land Cover 2000



Poland



State
Forest



State
Forest

Forest cover:

CORINE = 29,76%

GUS (PL) = 28,4%

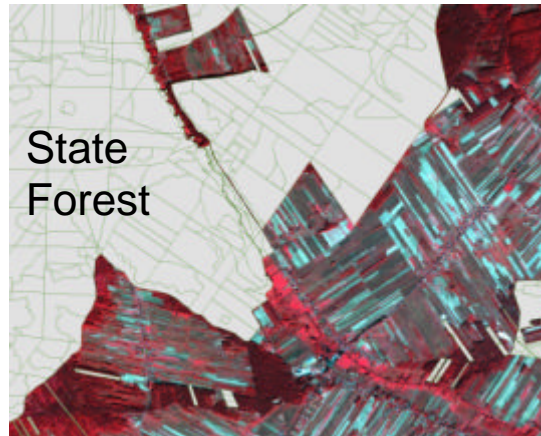
Difference = 1,3%

~ 4.064 km²

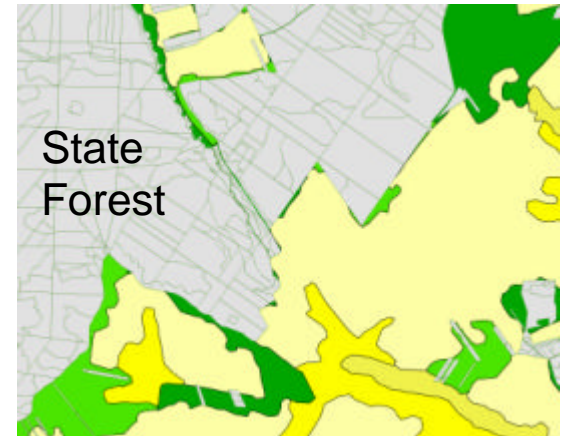
~ 12% of Holland

Forest cover in

Holland is about 9%

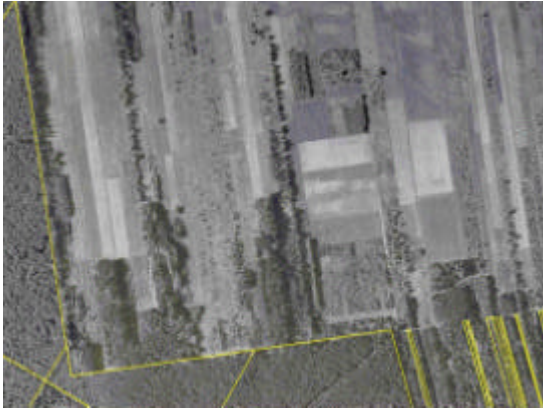


State
Forest

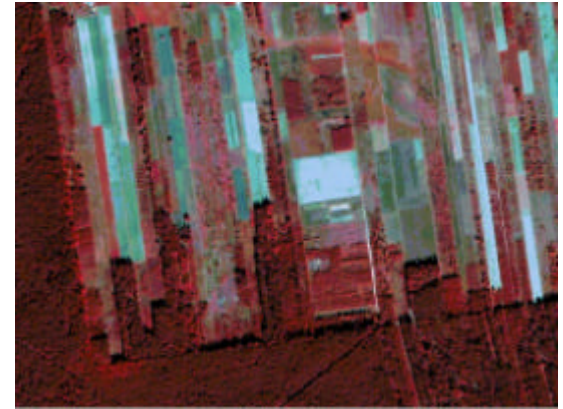


State
Forest

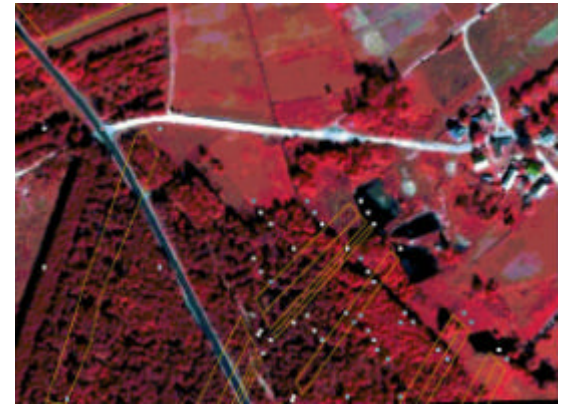
Problems



**Cadaster maps are
not up to date**

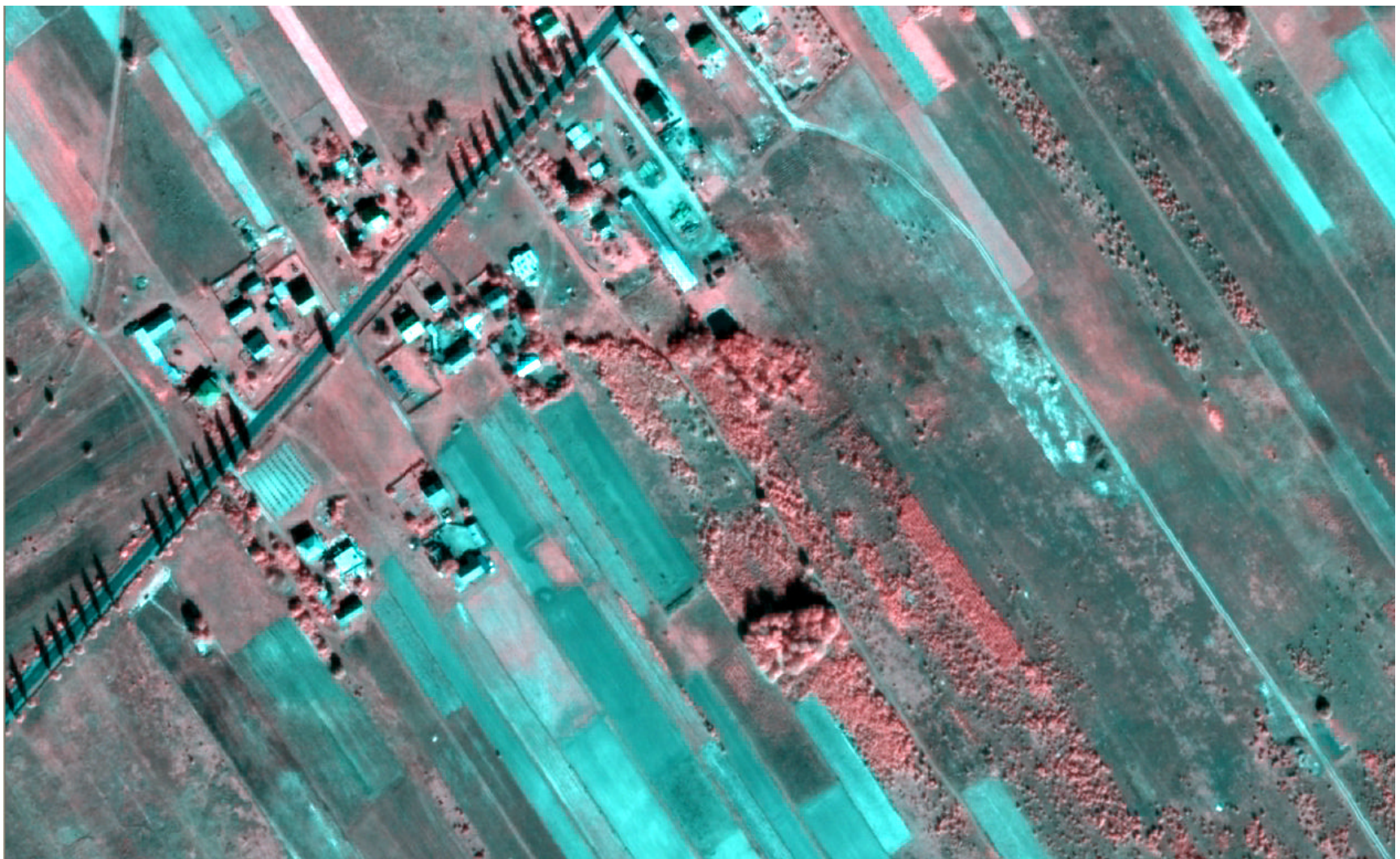


**Cadaster maps
are inaccurate**



Orthophoto 1:13.000

QuickBird 432_PAN



Complexity over the whole image domain

11-Bit ; 4 MS Bands + 1 PAN band



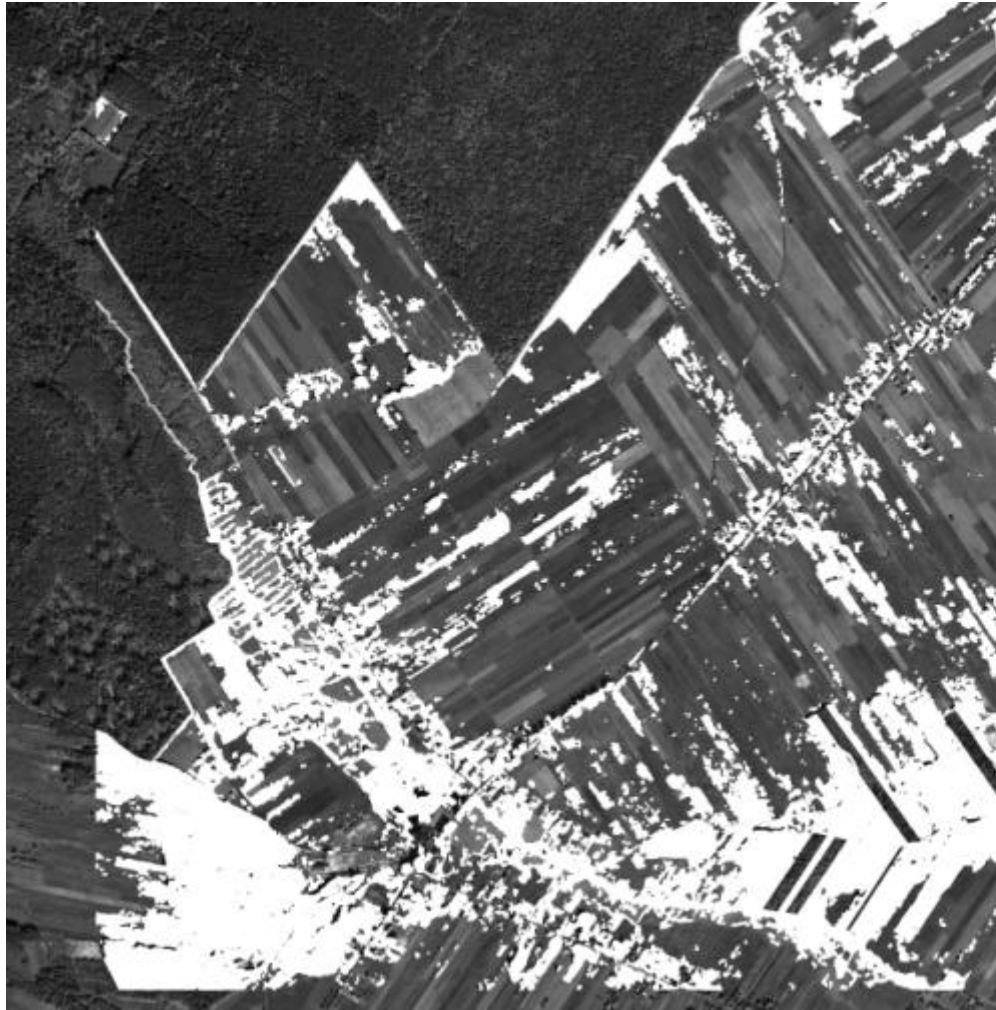
Drastic information-reduction without loss of essential details

Line Detection positive (Border)



PAN objects

Results (1)

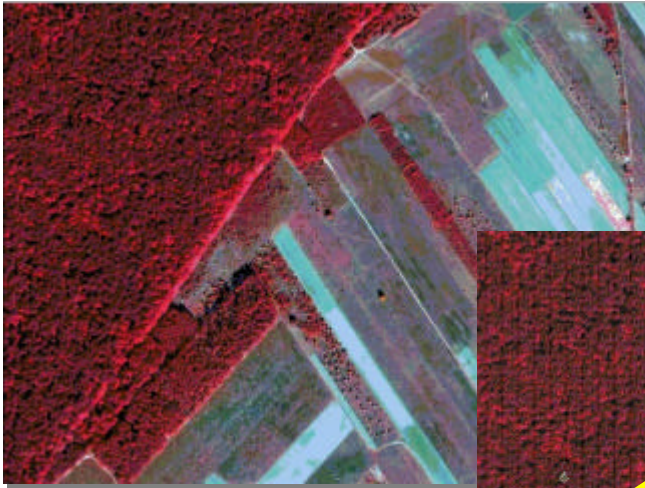


Results (5)

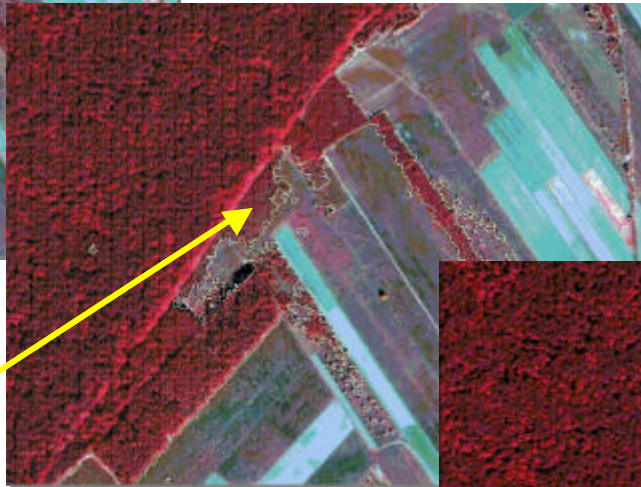


Results (6)

15.09.2003



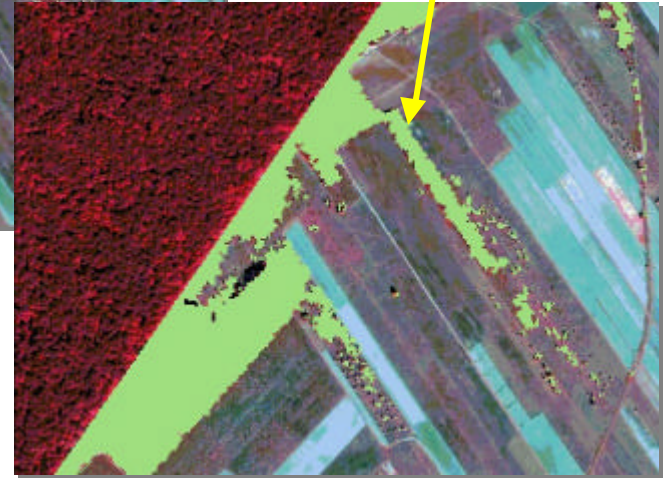
15.09.2003



26.06.2005

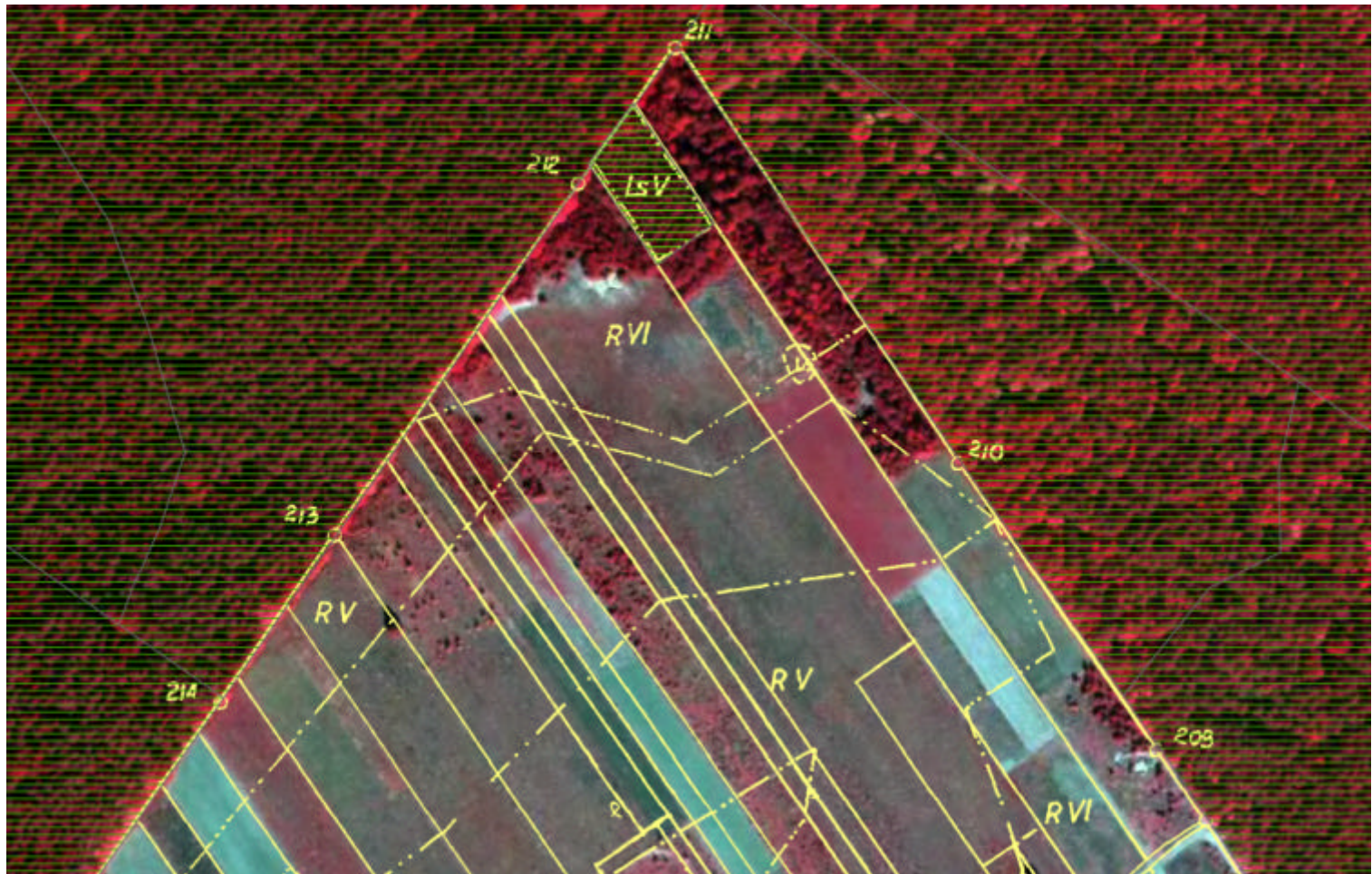


26.06.2005



15.09.2003

GIS / Cadastre (1)





EU subsidies

Payment of equivalents for afforestation on previous agricultural land

Valid only when development plan is available

- Subsidies for afforestation and game protection (from 1000 up till 1.500 Euro/ha/year);
- Maintenance for 5 first years (from 100 to 250 Euro/ha/year);
- Afforestation bonus as compensation for putting the arable land on „non-active“ (up to 300 Euro/ha/Year)



July 2005: 4.245 applications
registered
ca. 17.375 ha afforestations





Conclusions (1)

- The increment of forest cover in Poland is a chance for the whole EU (Kyoto Protocol – CO₂ contingents).
- Non-planned afforestation (succession) are not paid. The farmers carry the cost alone.
- Modernization of Polish cadastre (geometry and attributes) is necessary and technically possible.
- The integration of VHR satellite data processing with other geomatic techniques is unavoidable in the construction of the AICS/ LPIS/ Cadastre.



Conclusions (2)

- Automatic assignement over large areas to the class „non-functional“ is possible, but only when developed forest succession has taken place.
- An image classification- method that replaces „Training & Test Areas“ with an „Histogramm-Sampling“ technique, shows preadvantages in stable and transferable classification protocols.