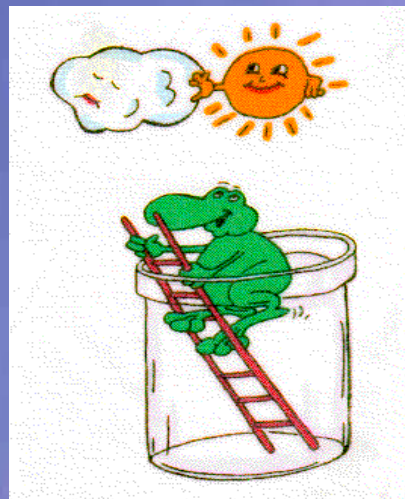


COST 734 - Model comparison exercise CZECH DATA SET

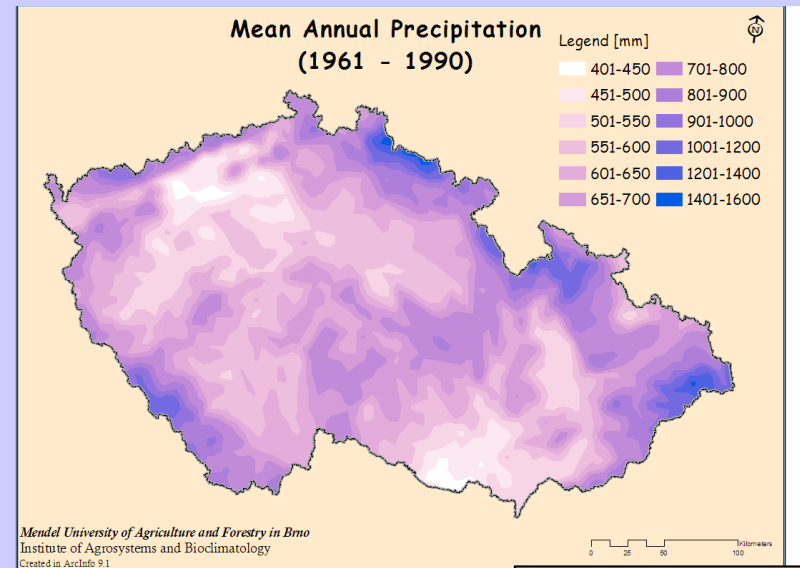
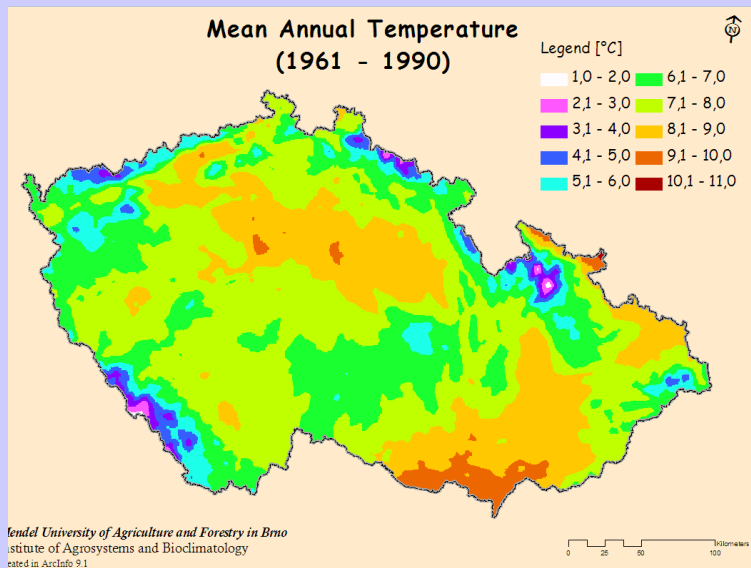
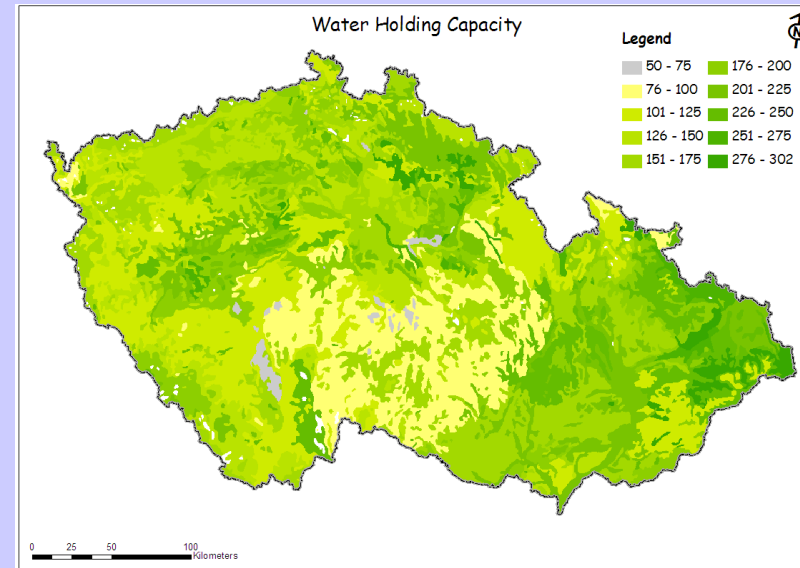
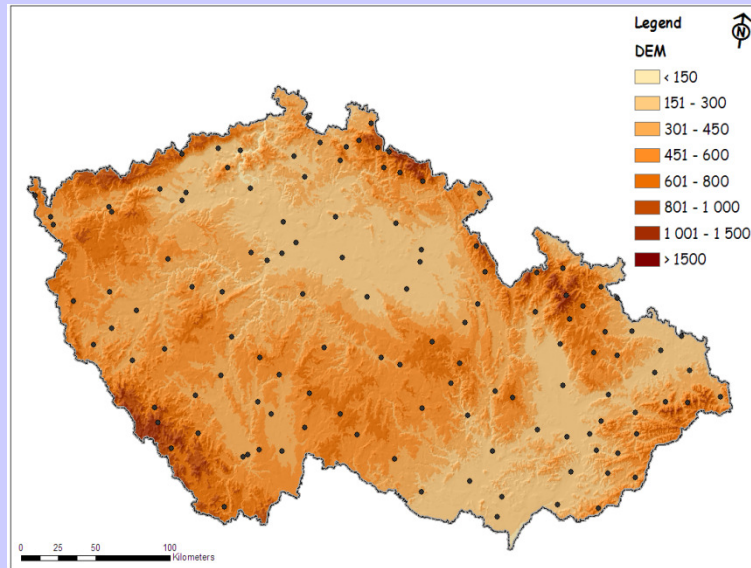
Miroslav Trnka, Martin Dubrovský, Petr Hlavinka,

co-authors/contributors:

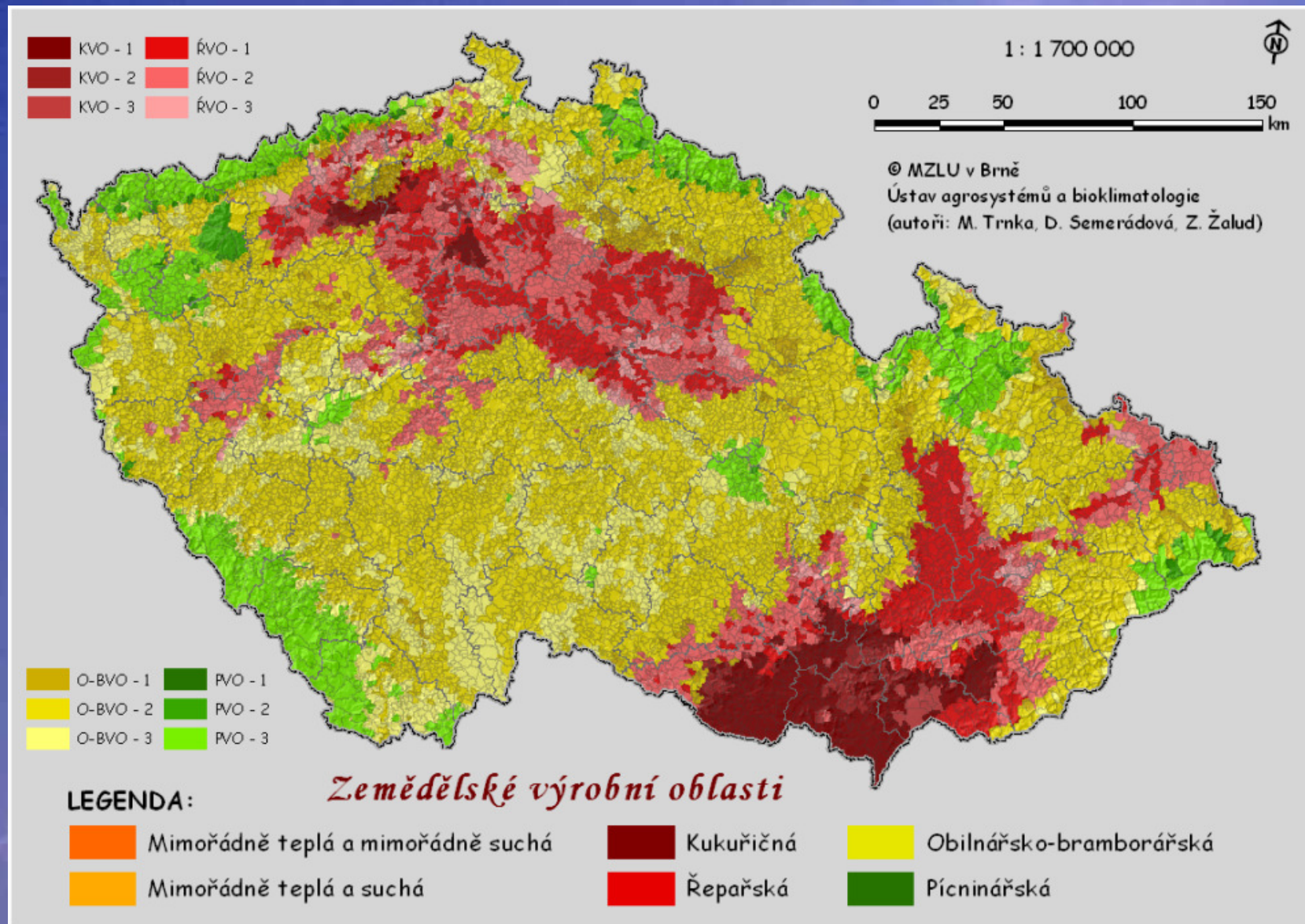
D. Semerádová, J. Eitzinger, M. Možný, P. Štěpánek, V. Horáková



Introduction of the area:



Agriculture regionalization:



Specifics of crop modelling in Czech conditions



- ☀ Crop production is almost entirely rainfed
- ☀ But there is no single one driving variable determining yield
- ☀ Crop model calibration and evaluation is rather challenging...



Data sources - state variety trials

- ☀ Independent well kept trials with experimental traditions since 1930-1950's;
- ☀ Uniform trials with same methodology and continued oversight by senior trial managers;
- ☀ Overall management synchronized with farming practice (but not too frequent change);
- ☀ Not project based and focused only on objectivity of the results;
- ☀ Each year/location between 30-40 cultivars and 10-30 newly tested materials.

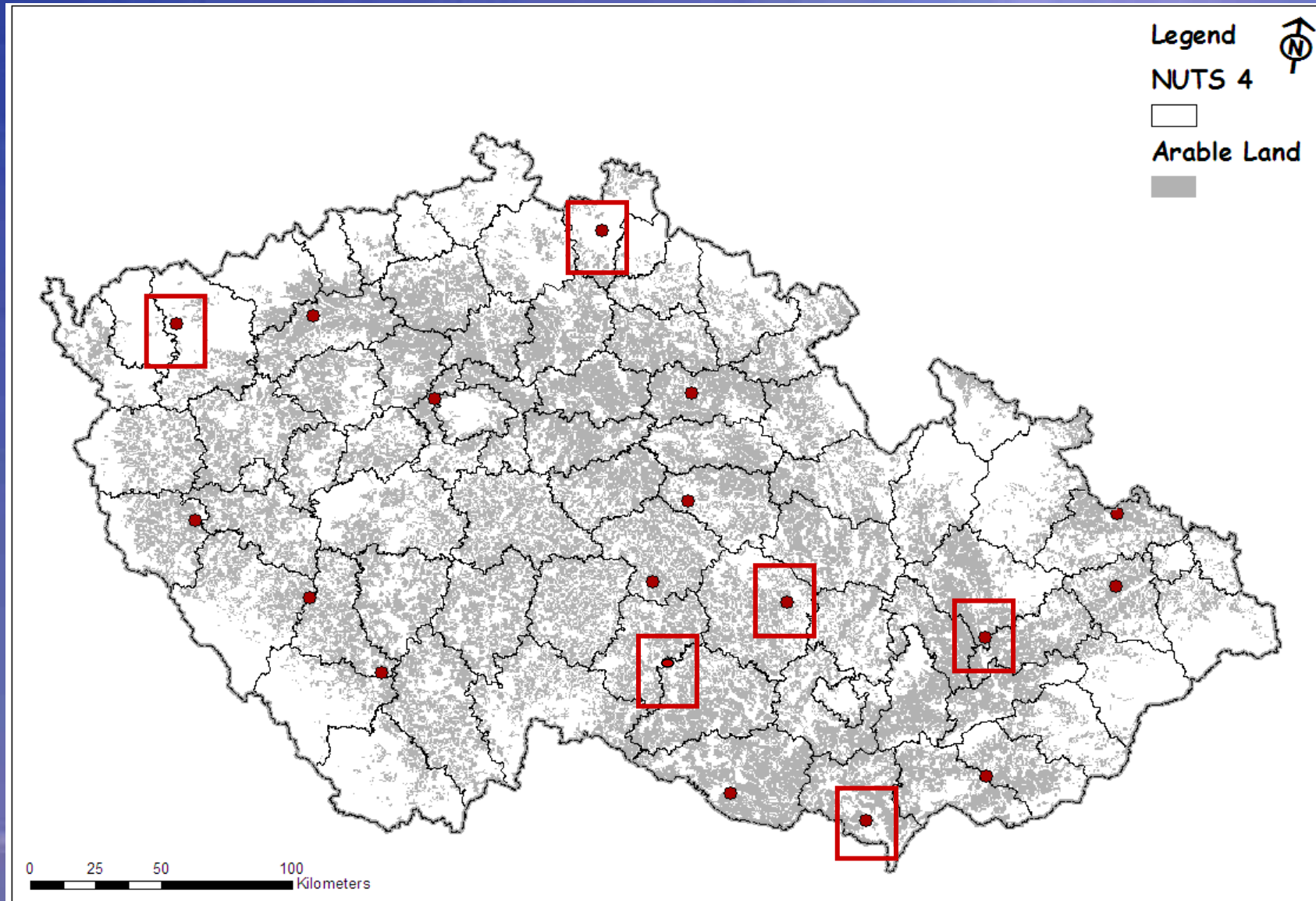


Selected locations

Site	Name of the site	Elevation (m)	Primary crop	Soil type	T (°C)	Precip. (mm)
CZ-1	Lednice	170	maize	Chernozem	9.5	488
CZ-2	Věrovany	210	sugar-beet	Chernozem	8.7	502
CZ-3	Chrastava	345	cereals	Luvisol	7.6	816
CZ-4	Jaroměřice	490	cereals	Brown soil	7.3	540
CZ-5	Domanínek	565	potatoes	Cambisol	6.8	591
CZ-6	Kr. Údolí	647	forage	Cambisol	6.4	604



Data sources - state variety trials



Cultivars:

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	YEARS		
Winter Wheat_HANA	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█												15	
Winter Wheat_SAMANTA									█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	17
Spring Barley_ORBIT	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█												15	
Spring Barley_TOLAR												█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	14

Total experiments available:

- ☀ Winter wheat - up to 90-102 experimental years;
- ☀ Spring barley - up to 84-90 experimental years;



Available parameters:

Weather data:

- ☀ Direct observations (in most cases) or interpolated in daily step;
- ☀ TMAX, TMIN, SRAD (estimated from sunshine duration); PREC; VAPO and WIND;
- ☀ Scenario data will be provided!

Soil data:

- ☀ Detail soil profile information (determined 2002) including
 - ☀ soil structure (essential for hydro-limits calculation);
 - ☀ mean nitrogen content (including Nmin tot)
 - ☀ CO_x



Management & production parameters (each season):

- previous crop
- organic carbon
- pH
- N,P,K, Ca fertilization (date, type, amount)
- tillage and ploughing (date, depth)
- sowing (date, number of seeds)
- harvest (date)
- Herbicide & Fungicide treatment
- Data on overwinter damage (0-9 scale);
- Key diseases infestation levels (0-9 scale);
- sowing (date, number of seeds)
- emergence (date, number of plants)
- tillering (date)
- shooting (date)
- heading (date)
- maturity (date)
- yield (kg/ha)
- number of productive tillers
- WTS
- Grains per ear
- Quality parameters

