

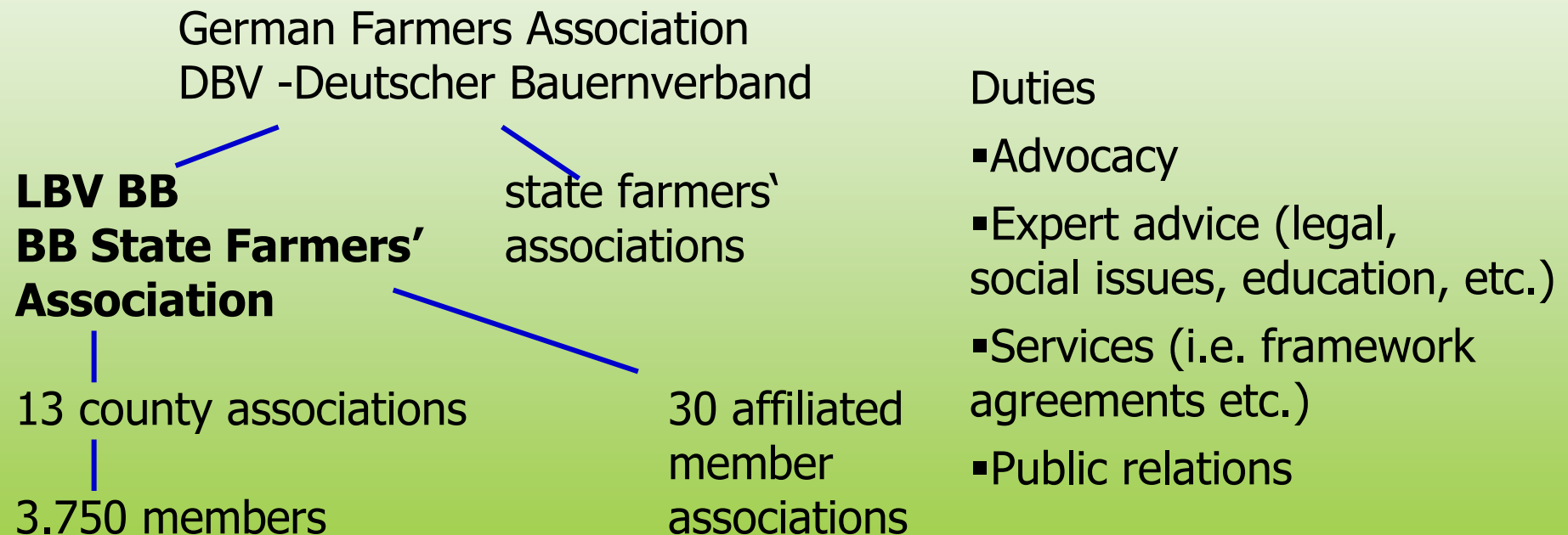


Agricultural Innovations for Climate Change Adaption

Brandenburg Farmers' Association

Landesbauernverband Brandenburg e.V.

Brandenburg Farmers' Professional and Advocacy Organization



Land Brandenburg

Capital: Potsdam
Population: 2,5 Mio. residents (85 inhab./km²)
in detail: 64 inh./km² in least populated areas
221 inh./km² in Berlin suburbs
231 inh./km² national average

Area: 29.480 km²

Land use:

	km ²	%
Agriculture	13.281	49,5
Woodland/Forestry	10.928	35,2
Water bodies	1.006	3,4
Traffic Infrastructure	1.047	3,6
Other	2.461	8,3

Source: State Statistical Institute Brandenburg , 2010
(Amt für Statistik Brandenburg)

Agriculture in sandy Brandenburg

Agricultural land use in 1.000 ha	2011
Total agricultural area	1.319
Grassland	285
Horticulture/perennials	11
Arable Crops	1.029
Small grains	514
Rye	194
Wheat	157
Oilseeds	143
Legumes (grain harvest)	21
Root crops	18
Fodder plants	280
Maize for silage	165

Livestock in 1.000 animals	1989	2011
Total cattle	1.233	556
dairy cows	423	157
breeding cows	-	96
Total swine	2.858	834
sows	334	94
Total sheep	392	78
breeding ewes	109	58
Poultry total	12.422	9.517
laying hens	6.113	2.840

Source: State Statistical Institute Berlin-Brandenburg
 (Amt für Statistik Berlin Brandenburg)
 Reports: soil quality (Bodenschätzung), Livestock (Viehzählung)

Types of farm operations

	Farms				Agricultural land			
	Number		in %		1.000 ha ag area		in %	
	1993	2010	1993	2010	1993	2010	1993	2010
companies	752	975	14,8	17,5	889	763	69,4	57,6
individuals	4.003	3.932	78,8	70,6	200	324	15,6	24,4
Subset (approx):								
-primary income	918	1.590	18,0	28,6	138	248	10,8	18,7
-secondary income	3.085	2.342	60,7	42,1	62	76	4,8	5,7
Partnerships	328	652	6,4	11,7	192	236	15,0	17,9
Total operations	5.083	5.566	100	100	1.281	1.324	100	100

Source: State Statistical Institute Berlin-Brandenburg (Amt für Statistik Berlin Brandenburg)
 Agricultural Census 2010 (Landwirtschaftszählung 2010)
 Please note: revised census

Environmental Factors for Agriculture in Brandenburg

Soils:

average *Bodenwertzahl* is 32 points
with 90 % under 40 points

(*Bodenwertzahl* is a measure of inherent soil fertility based on texture on a scale from 0 to 100 points)

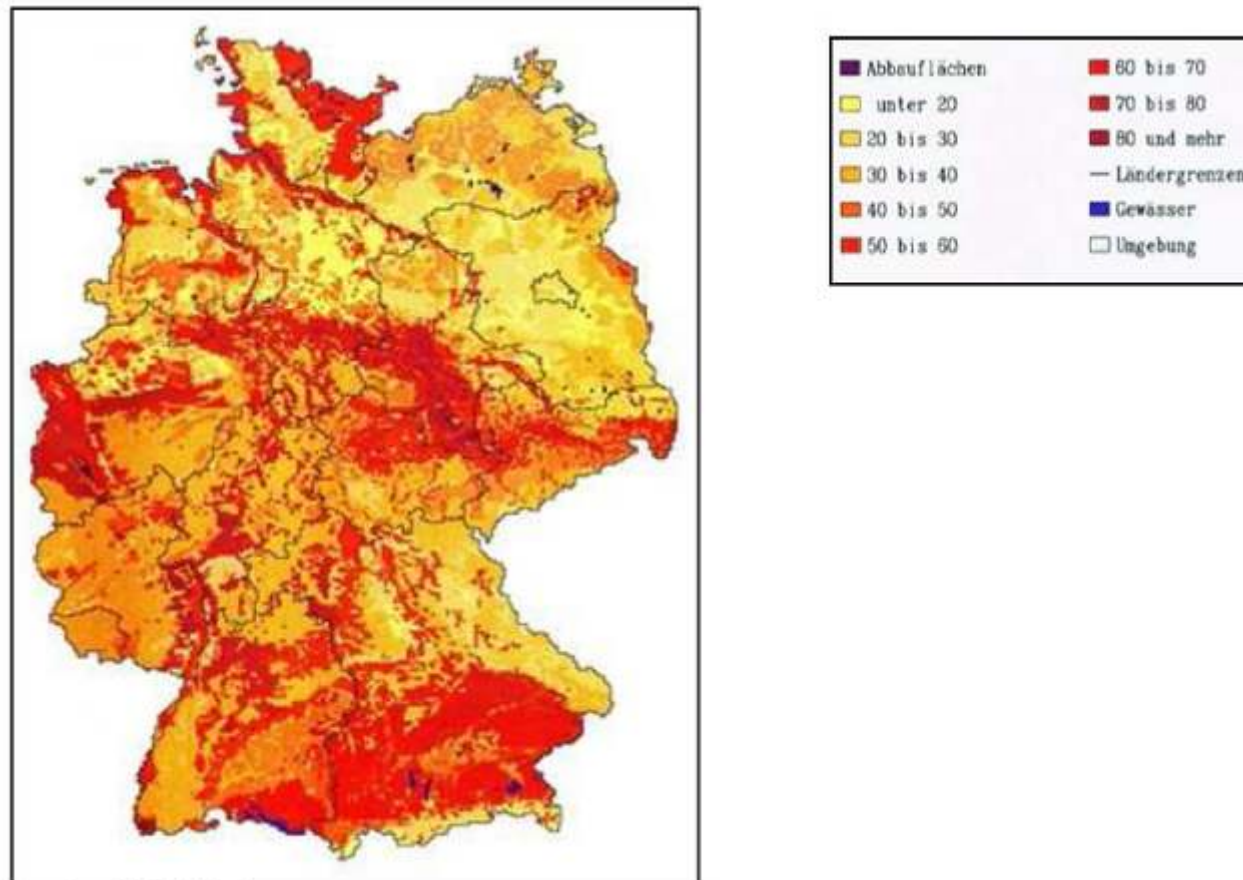
Precipitation:

long-term average is 560 mm/m²

Temperature:

average annual temperature: 8,6°C

Bodenzahlen of the predominant soil textures



Quelle: KFA Jülich

Annual precipitation

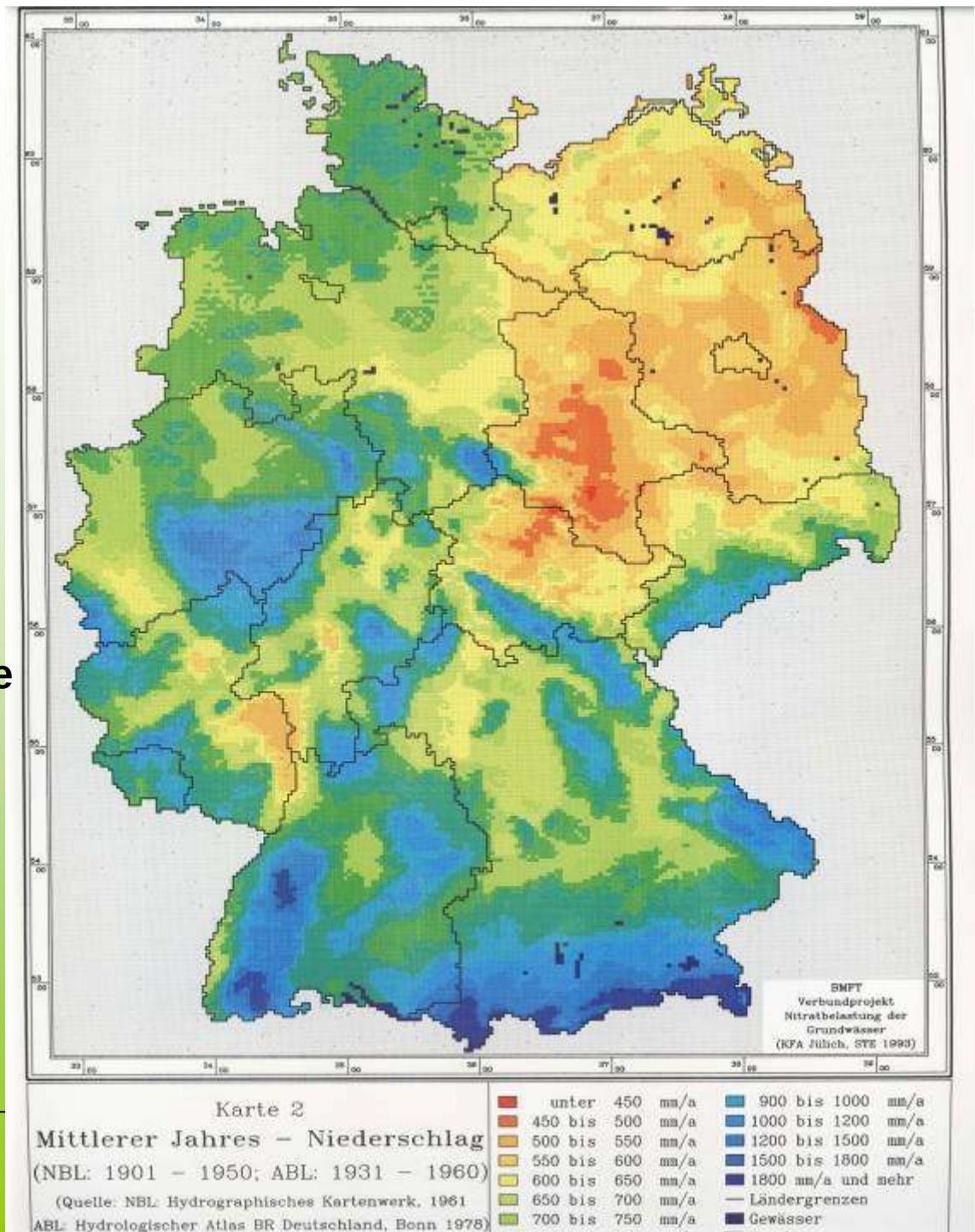
NE Germany:

Too little precipitation

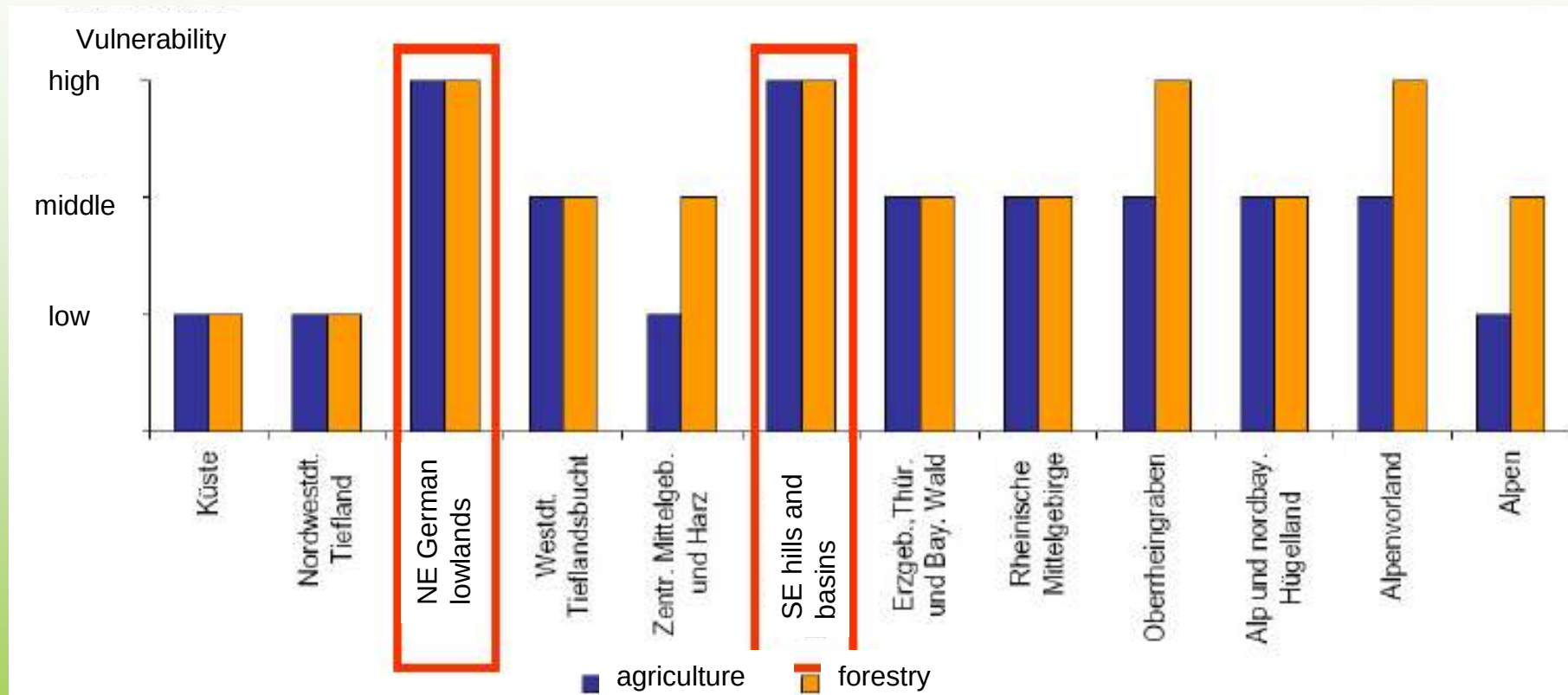
**Negative climatic water balance
in the summer**

**Mainly sandy soils,
great need for irrigation,
Water scarcity**

Brüssel, 06.Juni 2012



Regional vulnerability (Germany)



Source: PIK, Vulnerabilität und Anpassungsstrategien klimaintensiver Systeme; Juni 2005

Extreme weather events in Brandenburg

Year	Event
1992	drought
1997	Oder river flooding
2000	drought
2002	Elbe river flooding
2003	drought
2006	drought
2007	Spring drought March-April rainfall leading to flooding in July/August
2008	Spring drought
2010	flooding in Brandenburg's river valleys





July 2007



November 2011



September 2010

Possible adaptations in Agriculture

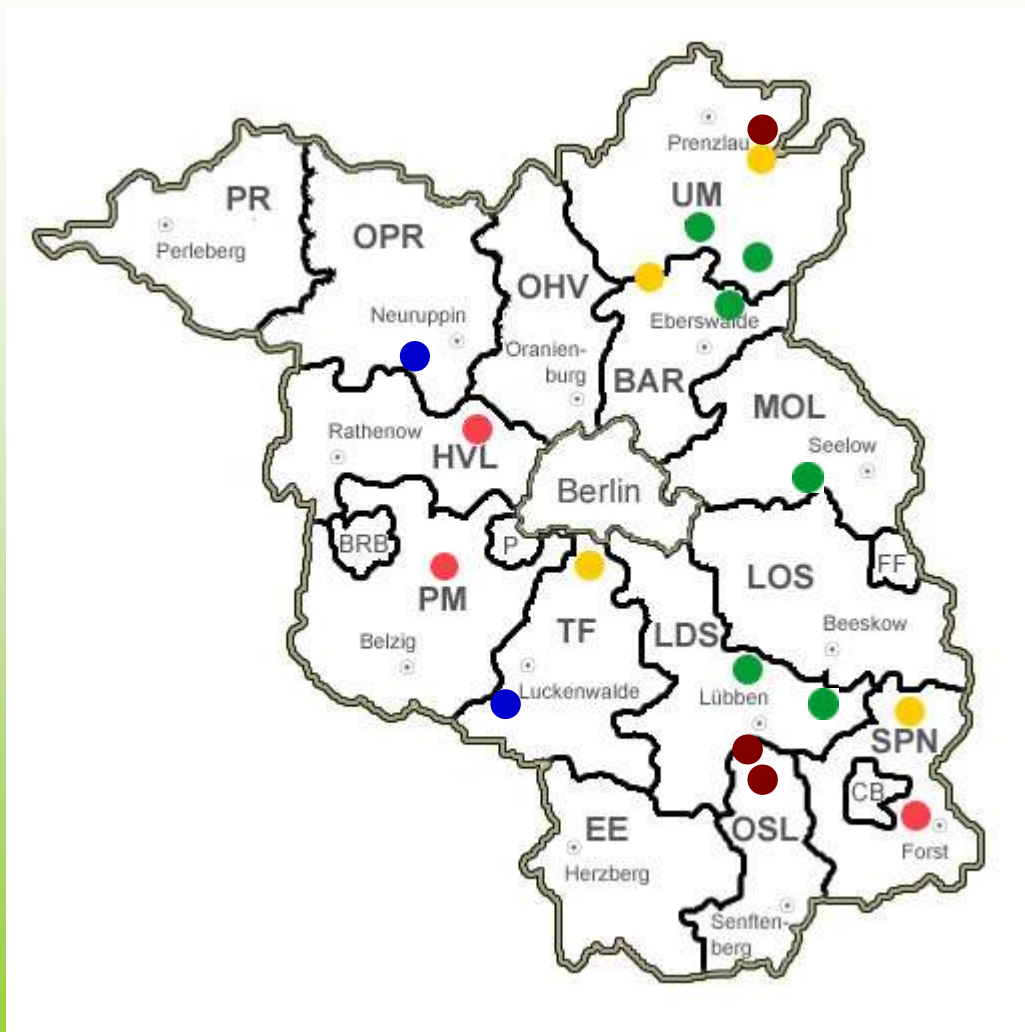
Key Aspects:

- Tillage systems
- Improved management systems
- Adapted varieties
- Irrigation

Selected Aspects of Sub-Projects in the Agriculture "Field of Activity"

- Study of management and tillage systems in conventional and organic agriculture
- Varieties breeding
- Adaptation of horticultural plants
- Strategies in grazing systems
- Study of agroforestry systems
- Efficient irrigation systems in row crops

Location of selected on-farm partners



- Climate-flexible integrated farming
- Climate adapted organic farming
- Varieties
- Irrigation
- Grazing systems

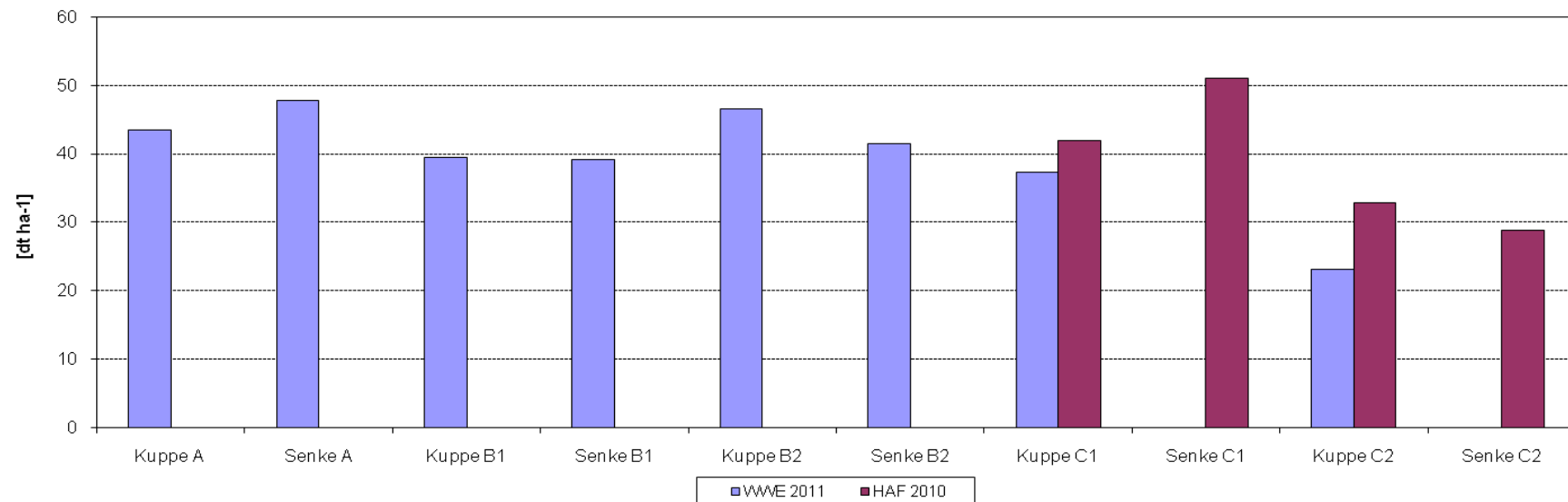


Water conserving stubble cultivation TP 06 und 07

Prof. A.M. Häring, Dr. J. Bachinger., Prof. K. O. Wenkel, Dr. K. Lorenz, R. Bloch

Optimizing winter wheat production following 2 years of alfalfa /cropping systems TP 07

Korntrag WWE 2011 und HAF 2010, Vergleich V 5 (Senke) und V6 (Kuppe) Wilmersdorf



Variante A:
Late sowing with plow



Variante B1: early sowing date
mixed with catch crop without
plow



Variante C2:
Middle sowing date without plow



Prof. A.M. Häring, Dr. J. Bachinger, R. Bloch

Climate-flexible cropping systems TP 06 und 07

- Further developemnt of the management systems experiments using planting equipment with surface tillage (planter-cultivator)
- On farm testing together with *Landwirtschaftsbetrieb Beerfelde* and *Fehrower Agrarbetriebs GmbH*



Prof. A.M. Häring, Dr. J. Bachinger., Prof. K. O. Wenkel, Dr. K. Lorenz, R. Bloch

Adapted Varieties TP 07



Prof. A.M. Häring, Dr. J. Bachinger, R. Bloch

Irrigation Technologies TP 18



Dr. A. Prochnow

Grazing Systems TP 12



Prof. O. Kaufmann, Dr. A. Fischer

Project Goals

- Farmer oriented research
- Development of adaptation strategies
- Creating internet based information systems
- Fast access to new knowledge
- Exchange of ideas
- Raising farmer awareness
- Development of new networks
- Developing a long-term dialogue between scientists and farmers
- Generate suggestions for further research and methods in agriculture

Responsibilities of the LBV

- Using own existing network for the project Communication
- Transferring information
- Training/Courses
- Organising meetings to share experiences
- Raising awareness among members
- Developing a long-term dialogue between scientists and farmers

Thank you!