



WROCLAW UNIVERSITY OF ENVIRONMENTAL AND LIFE SCIENCES

OSCAR Project

**Lower Silesia
Case Study
(Poland)**

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Brussels, 2012-11-22

BASIC INFORMATION ABOUT THE PROVINCE



Total area: 19 947 km²
6,4% of country area
90% rural area

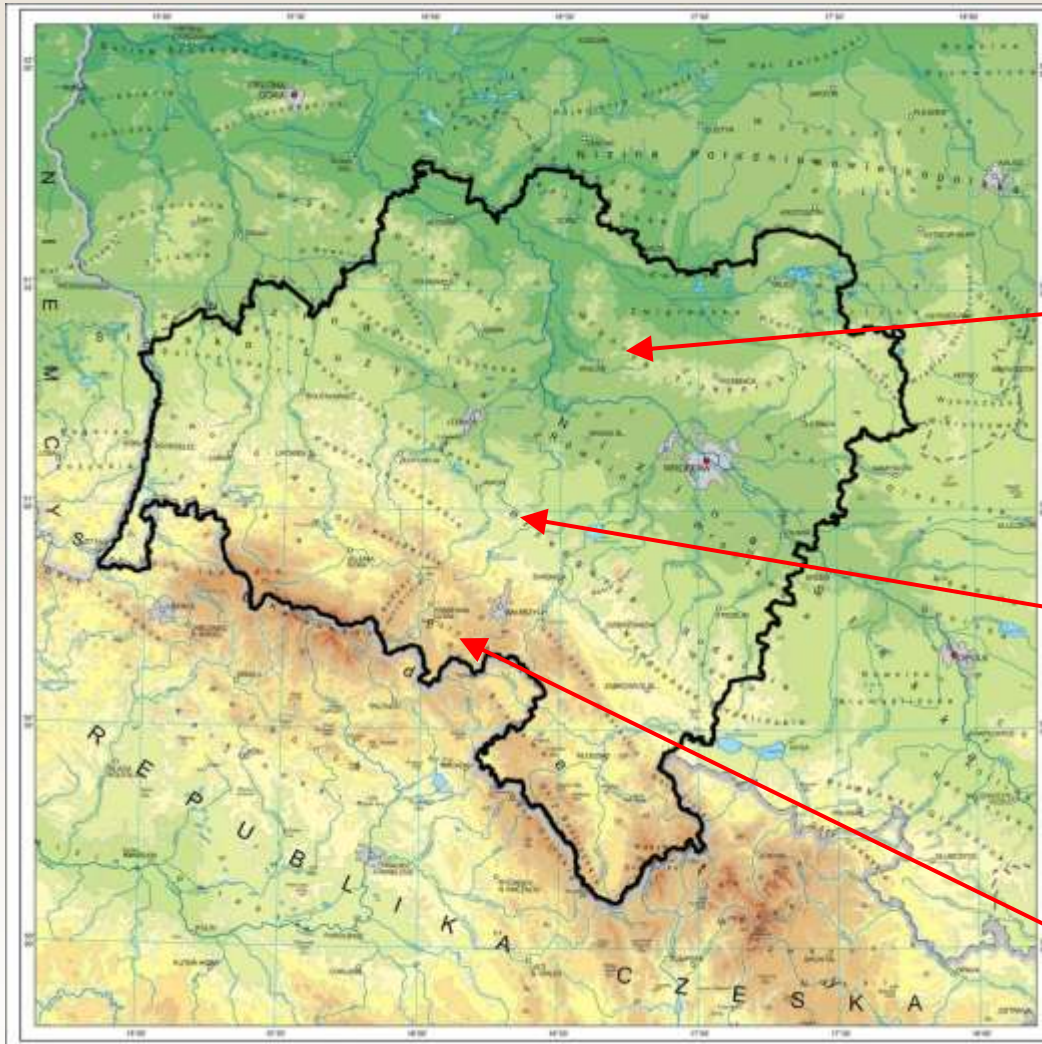
Population: 2.87 milion inhabitants
29.9% rural residents

Land use:

- arable lands 44%
- meadows and pastures 13%
- forests 31%

GUS, 2010

TOPOGRAPHY

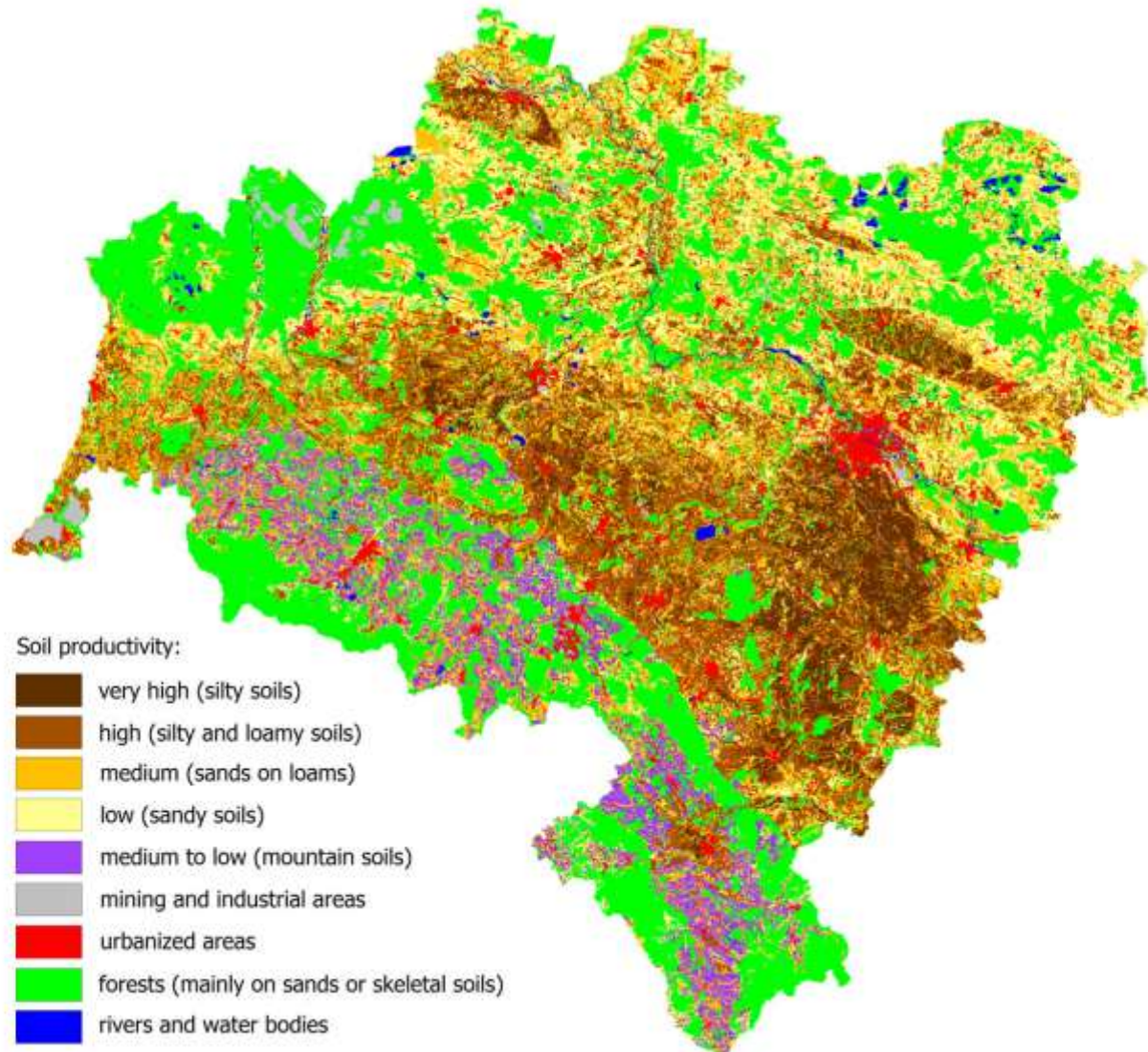


Foresudetic Monocline

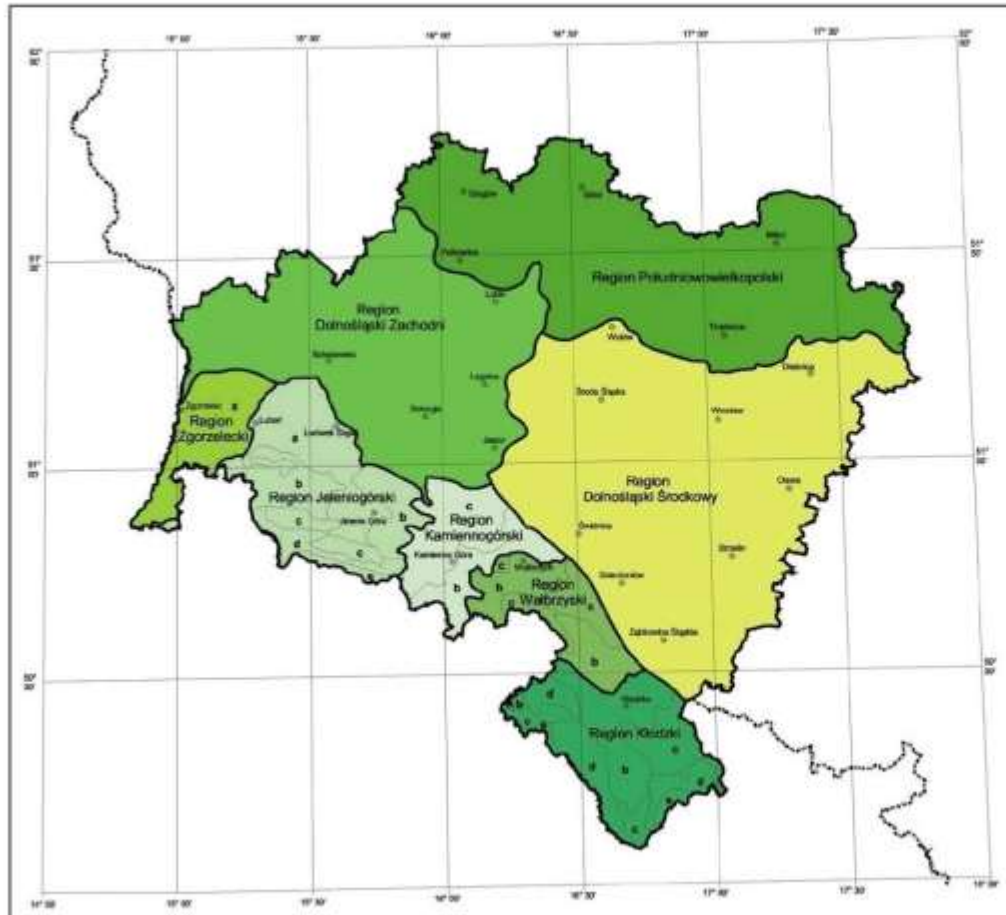
Foresudetic Block

Sudeten Mountains

SOIL PRODUCTIVITY



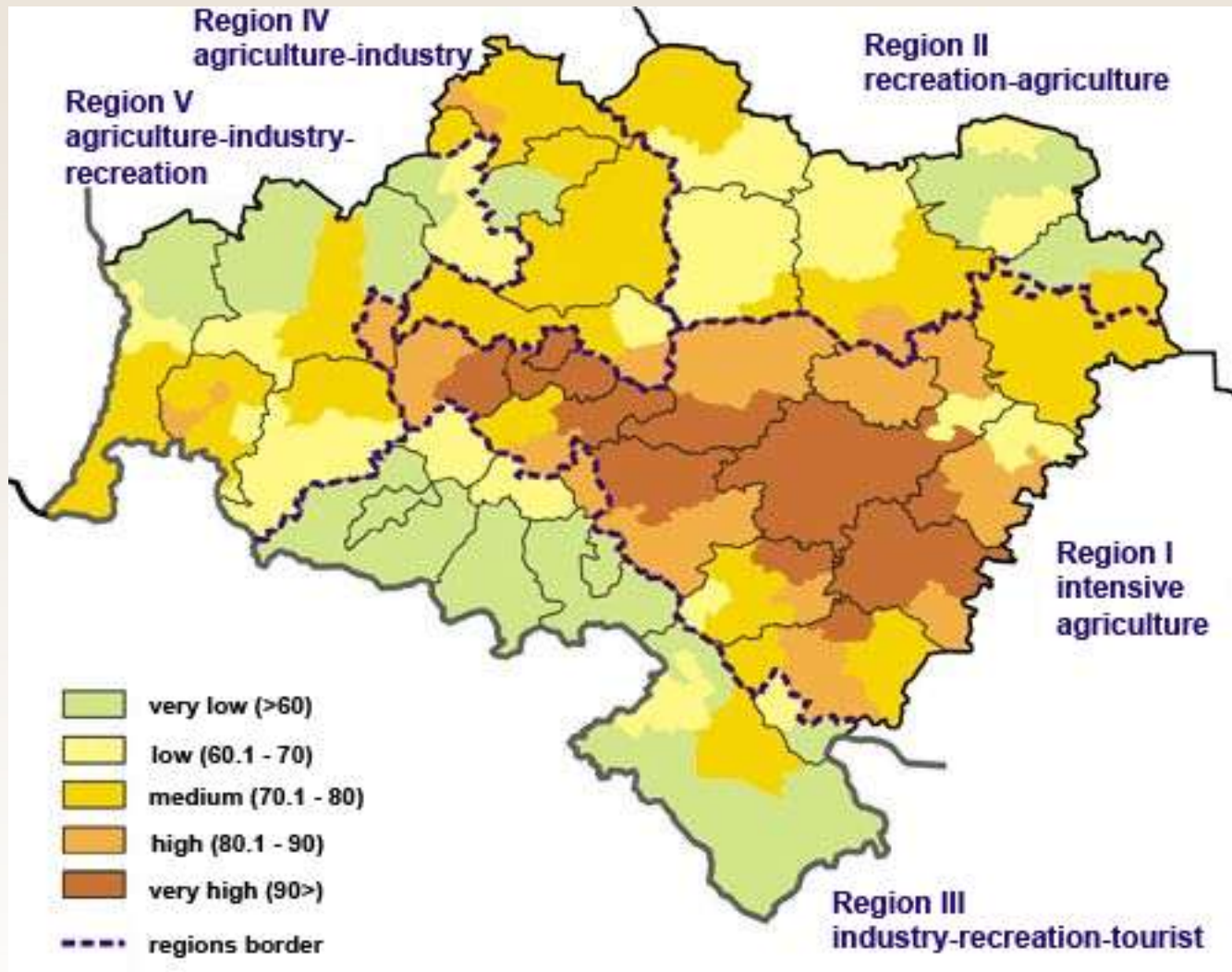
CLIMATE



8 climatic regions:

- Południowowielkopolski
- Dolnośląski Zachodni
- Dolnośląski Środkowy
- Zgorzelecki
- Jeleniogórski
- Kamiennogórski
- Wałbrzyski
- Kłodzki

FUNCTIONAL REGIONS OF RURAL AREAS

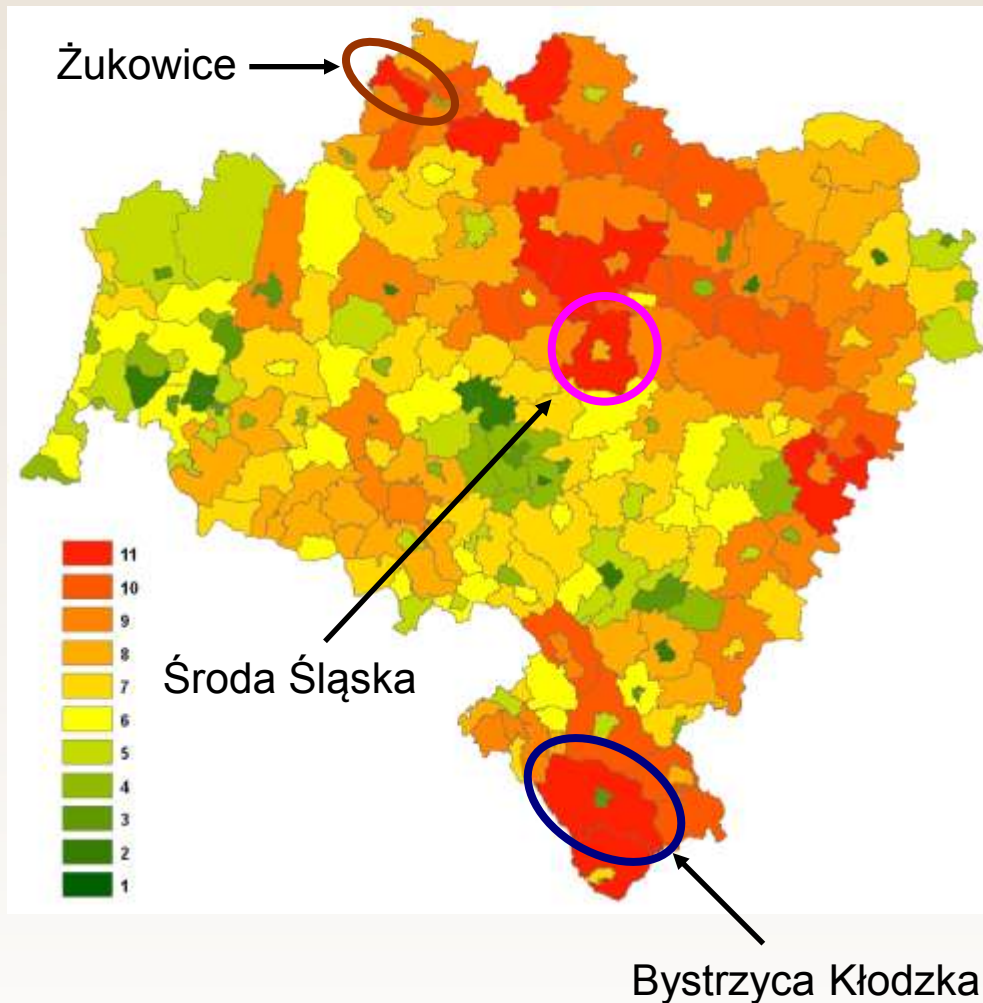


Source: Institute of Soil Science and Plant Cultivation (IUNG)

AGRICULTURAL ACTIVITIES

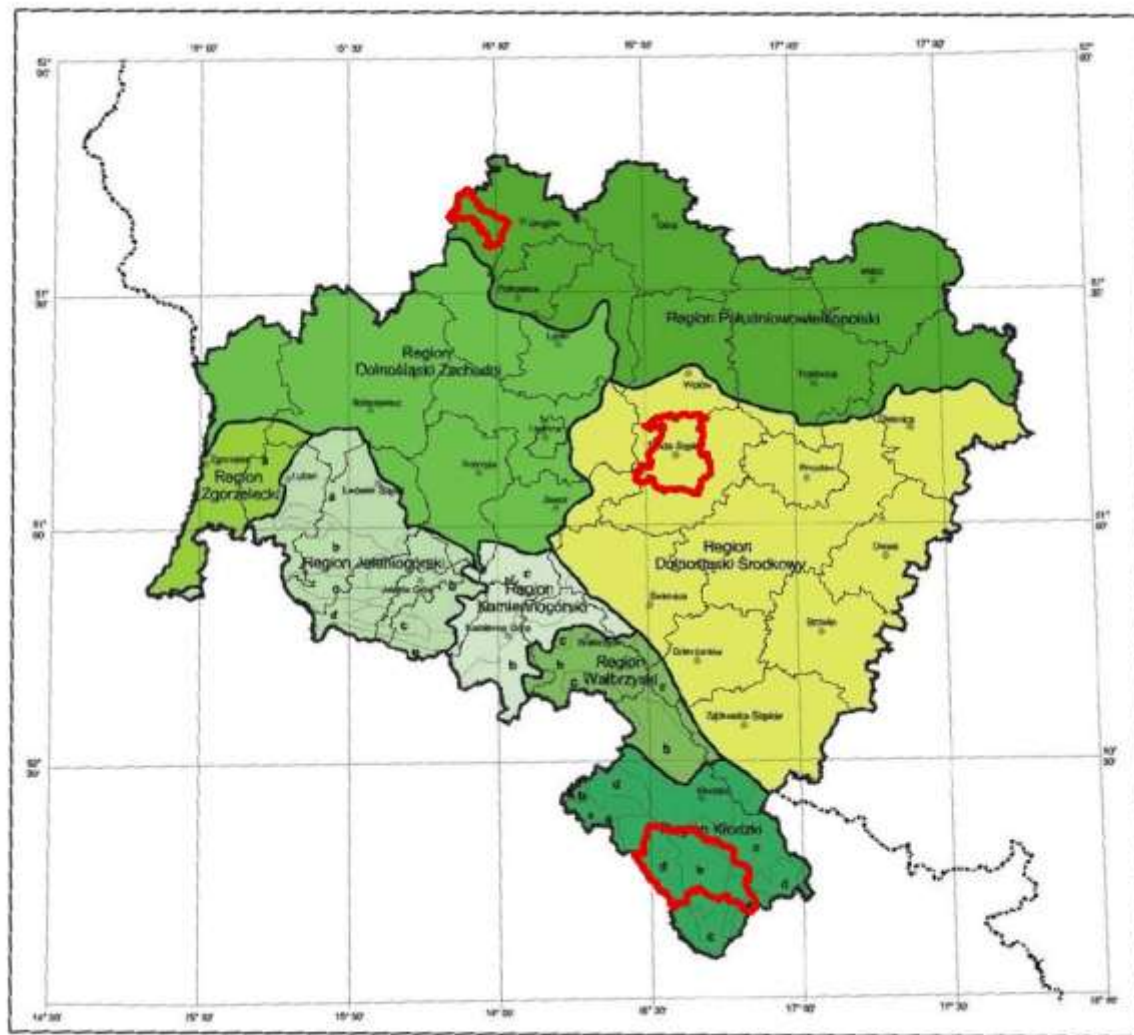
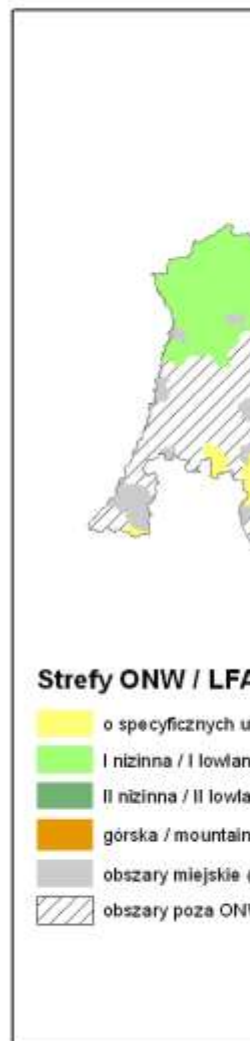
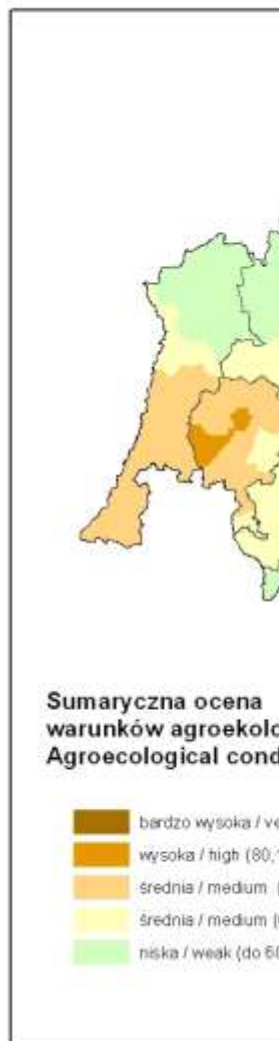
- 115 thousand farm
- 12.4 ha average size of all farms
- 58% of farms are 1-5 ha in size
- crop production:
 - 69% cereals
 - 10.7% oilseed rape
 - 5.7% potatoes
 - 3.6% sugar beet
- animal husbandry is relatively less developed
- 91.3% of farms in the hands of the private sector
- 96.5% of forests held by public sector

Selection of Hotspots



COMMUNITY	Total area [ha]	Agricultural land area [ha]	Number of factors
Oława	23441	15694	11
Bystrzyca Kłodzka	32757	15305	11
Wołów	31234	15007	11
Środa Śląska	20087	14592	11
Ścinawa	15080	11133	11
Międzylesie	17425	10993	11
Niechlów	15094	9697	11
Grębobocice	12164	8743	11
Żukowice	6824	5566	11

Hotspots location



RDP measures in the Lower Silesia



	Measure	Accepted motions
211, 212	Support of management in mountain areas and in less-favoured areas (LFA)	20 614
214	Agri-environmental programme (agrienvironmental payments)	4 309
121	Modernisation of agricultural holdings	1 972
112	Facilitation of young farmers' setting up	843
311	Diversification towards non-agricultural activities	401
221	First afforestation of agricultural land	368
312	Establishment and development of microenterprises	256
411	Competitiveness	53
223	First afforestation of non-agricultural land	28
413	Quality of life / diversification	26
126	Restoring agricultural production potential damaged by natural disasters and introducing appropriate prevention actions	16

Source: Agency for Restructuring and Modernisation of Agriculture

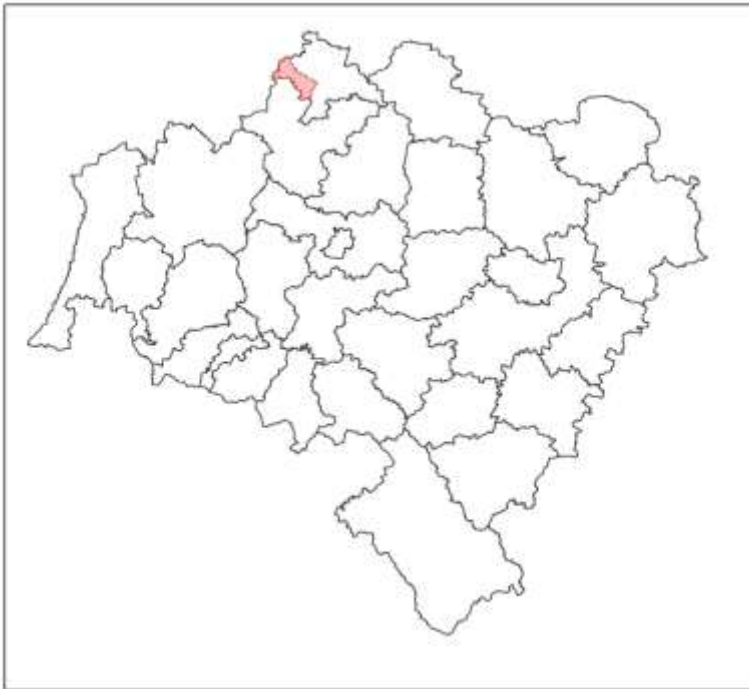
Żukowice



Area	68,09 km ²
Population	3 500 persons
Population density	51 persons/km ²

Arable land	83.1%
Forest	5.9%

Mean annual temperature	8-8.7°C
Annual precipitation	500-600 mm
Growing season	> 220 days



Żukowice

Number of farms 335

Cultivated area 5 428 ha (80%)

- *Cereals* 58.8%
- *Oilseed rape* 24.2%
- *Sugar been* 8.7%
- *Potatoes* 5.6%

Livestock 511 LSU

Identified problems

- *Insufficient use of very good soil and natural conditions for agricultural production.*
- *Insufficient level of equipment to support of agriculture activity.*
- *Predominance of small farms to 10.0 ha (78,6%)*
- *Bad road network and quality of agricultural transport.*
- Risk to food

Żukowice – 1st Farm

Soil quality of land in use:

• I and II soil class (very good)	10,47 ha
• III soil class (good)	9,67 ha
• IV soil class (medium)	6,19 ha
• V soil class (weak)	0,30 ha
TOTAL	26,63 ha

Crop production

- winter wheat
- winter triticale
- edible potatoes
- industrial potatoes
- onion
- cabbage
- extensive meadows

Żukowice – 1st Farm

Measure: 121 Modernisation of agricultural holdings

Operation: Purchase of new agricultural machinery and equipment

Main objective:

development of farm by purchase of:

- farm tractor with 110 hp
- fertilizer spreader cap. 700 l

Total investment:

230 396 PLN

Benefits:

- improvement farm technology by rational selection of agricultural equipment
- improvement of the organization of agricultural production,
- timely delivery of field operations,
- better quality of field work,
- improvement of working conditions and safety in the field,
- minimizing the adverse impact of agricultural technology on the environment.

Żukowice – 2nd Farm

Measure: 311 Diversification towards non-agricultural activities

Operation: Support activities for crop production

Main objective:

providing field services to support crop production:

- tillage
- spraying
- agricultural transport

Investment:

purchase of:

- farm tractor with 122 hp
- sprayer cap. 2500 l

350 550 PLN

Benefits:

- extending range and quality of services,
- increase the number of customers,
- increase income from non-agricultural business.

Żukowice – 3^d Farm

Arable land in use:

• I and II soil class (very good)	6,32 ha
• III soil class (good)	55,6 ha
• IV soil class (medium)	51,44 ha
• V soil class (weak)	25,25 ha
• VI soil class (very weak)	6,89 ha
TOTAL	145,5 ha

Crop production

- winter wheat
- winter oilseed rape
- forage
- grass
- winter rye
- clover

Żukowice – 3^d Farm

Measure: 112 Facilitation of young farmers' setting up

Operation: Support for young agricultural producers in starting an agricultural holding

Main objective:

increase the economic value of farm expressed in ESU

- purchase of 87 ha of agricultural land

Total investment:

2 606 283 PLN

Benefits:

- created farm will be conducted in accordance with Good Agricultural Practice and principles of cross-compliance compatibility.

Żukowice – 4th Farm

Land use:

• arable land	25,13 ha
• permanent grassland	2,45 ha
TOTAL	27,58 ha

Crop production

• spring barley	9,06 ha
• winter wheat	7,77 ha
• grass with leguminous plants	6,40 ha
• winter triticale	1,59 ha
• alfalfa	0,31 ha

Livestock

• cattle	7 heads
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Żukowice – 4th Farm

Measure: 214 Agri-environmental programme

Operation: Organic farming

Protection of endangered bird species and habitats outside Natura 2000

Main objective:

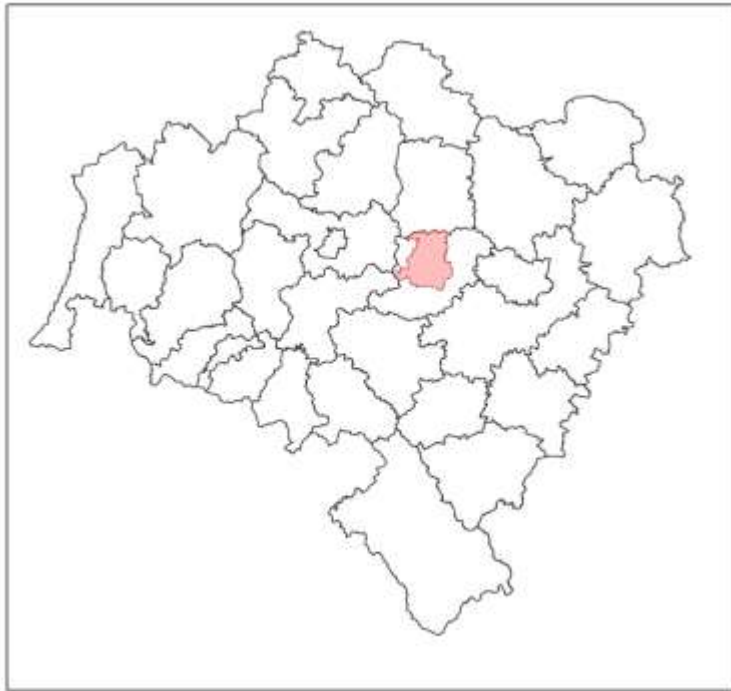
development towards crop production and organic farming

- agricultural crops
- molinia and alluvial meadows
- semi-natural fresh grasslands

Agrienvironmental payments (5 years):

37 120 PLN

Środa Śląska



Area	215 km ²
Population	19 222 persons
Population density	89 persons/km ²

Arable land	59 %
Grassland	7 %
Forest	17 %

Mean annual temperature	7,0 to 8,52 °C
Annual precipitation	575 to 626 mm
Growing season	200-215 days

Środa Śląska

Number of farms 942

Cultivated area 14 265 ha (66%)

- *Cereals* 81 %
- *Oilseed rape* 11 %
- *Sugar beet* 3 %
- *Potatoes* 2,5 %

Livestock heads

- *cattle* 677
- *dairy cows* 341
- *pigs* 5 435

Środa Śląska – 1st Farm

Measure: 121 Modernisation of agricultural holdings

Farm area 128,27 ha

Main objective:

Modernization of machinery

- 5 furrows plough mounted reversible
- agricultural tractor 163 hp
- field sprayer 2000 l
- drill - seed unit 3 m

Total investment:

541 211 PLN

Benefits:

- efficient use of farm activities,
- improvement of working conditions and safety,
- reduction of production costs.

Środa Śląska– 2nd Farm

Measure: 214 Agri-environmental programme

Operation: Sustainable agriculture

Protection of soils and water

Farm area 76,34 ha

Main objective:

sustainable management system

stubble intercrop

Agrienvironmental payments (5 years):

135 078 PLN

Środa Śląska – 3^d Farm

Soil quality of land in use:

• I and II soil class (very good)	11,86 ha
• III soil class (good)	94,88 ha
• IV soil class (medium)	9,22 ha
TOTAL	115,96 ha

Crop production

- winter wheat
- spring and winter barley
- edible potatoes
- maize
- oilseed rape
- meadows and pasture used extensively

Środa Śląska – 3^d Farm

Measure: 121 Modernisation of agricultural holdings

Operation: Purchase of new agricultural machinery and equipment

Main objective:

development of farm by purchase of:

- 5 furrows plough mounted reversible
- agricultural tractor 163 hp
- field sprayer 2000 l
- drill - seed unit 3 m

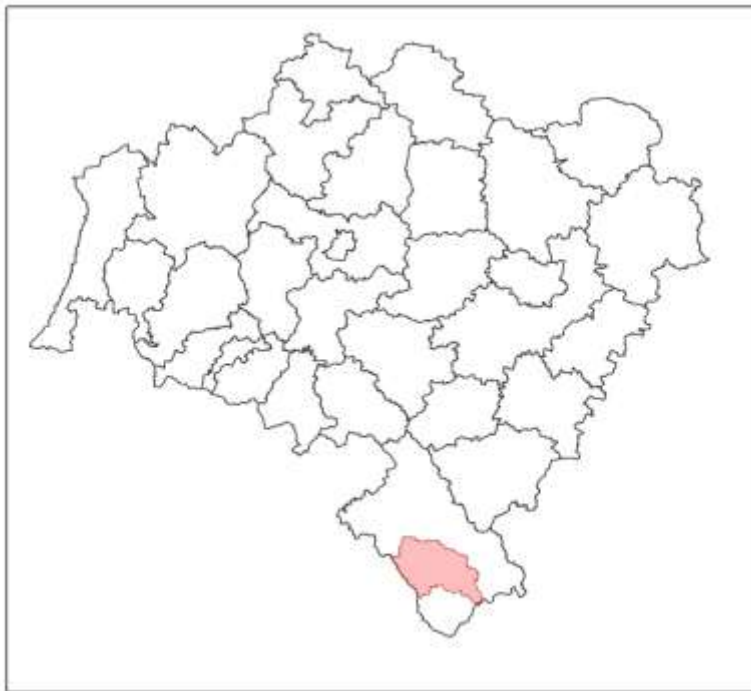
Total investment:

440 009 PLN

Benefits:

- improvement of the production process,
- reduction of pollutants emitted into the atmosphere,
- improvement of working conditions and safety.

Bystrzyca Kłodzka



Area	338 km ²
Population	20 000 persons
Population density	59 persons/km ²
Arable land	24 %
Grassland	11 %
Forest	46 %
Mean annual temperature	7,4 °C
Annual precipitation	786 mm
Growing season	180 days

Bystrzyca Kłodzka

Number of farms 1853

Cultivated area 4 822 ha (14%)

- *Cereals* 75 %
- *Buckwheat* 5 %
- *Oilseed rape* 6 %
- *Potatoes* 5 %

Livestock heads

- *cattle* 1 616
- *dairy cows* 820
- *pigs* 5 157
- *horses* 178
- *sheep* 255
- *goats* 179

Identified problems

- soil erosion, impoverishment of soils, excessive fertilization

Results of direct interview with farmers

- All the operations relate to farm modernization
- Buying equipment (tractor, plough, sprayer, jack, vehicle for fodder, mower, rake)
- Operation length (4-8 years)
- Economic benefits (decreasing total cost of production, time saving, higher efficiency, punctuality)
- Environmental benefits (Decreasing of exhaust fumes and erosion, more precise dosing of fertilisers, sustainable development)
- Changes in production (yield increasing, increment of income)

CONCLUSIONS

- radical decrease of air pollution
- beneficial changes of water quality
- radical decrease of water use by industrial and individual consumers
- decrease of soil and soil-water environment contamination
- increase of forest area
- increase of protected area

CLIMATE CHANGES PREVENTION

- increase of water retention in the environment
- soil protection
- modernization of stock accommodation in respect of proper thermal standards
- investigation on new crops and methods of cultivation more adapted to newly forming climate conditions
- farmer's education in the scope of climate changes and methods of adaptation to them
- promotion of insurance system against negative consequences of weather phenomena
- intensification of land use planning in respect of the prevention of natural disasters occurrence

Thank you for your attention