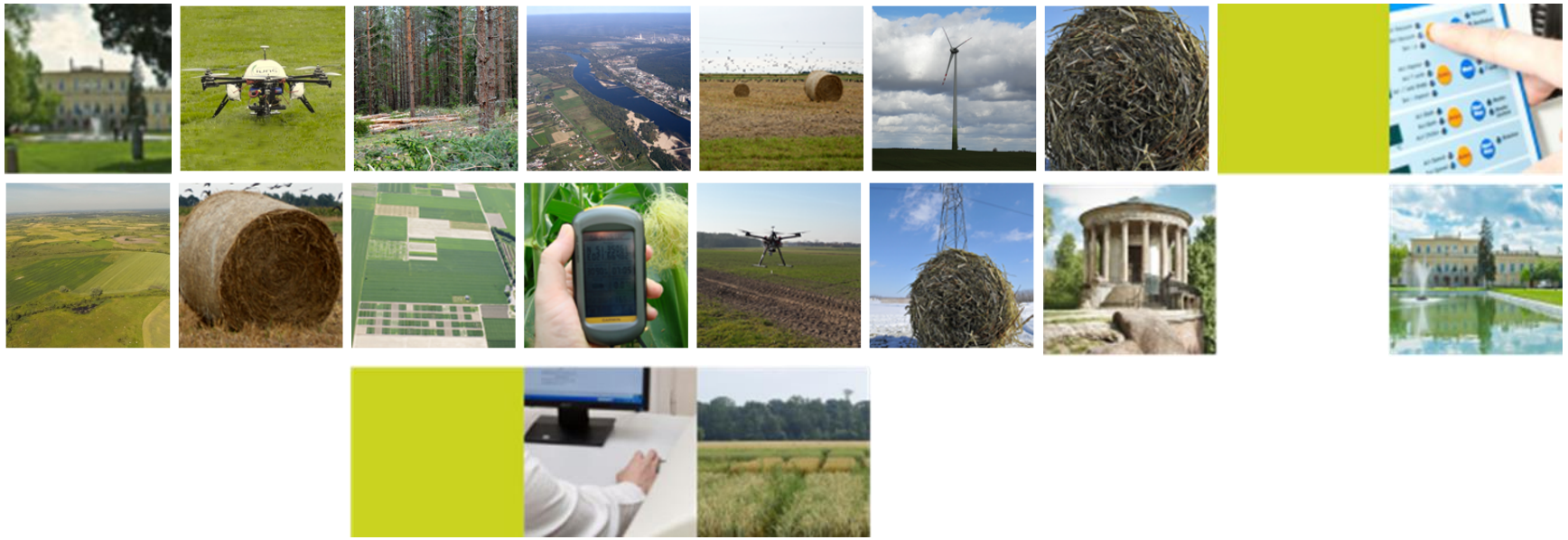
Institute of Soil Science
and Plant Cultivation



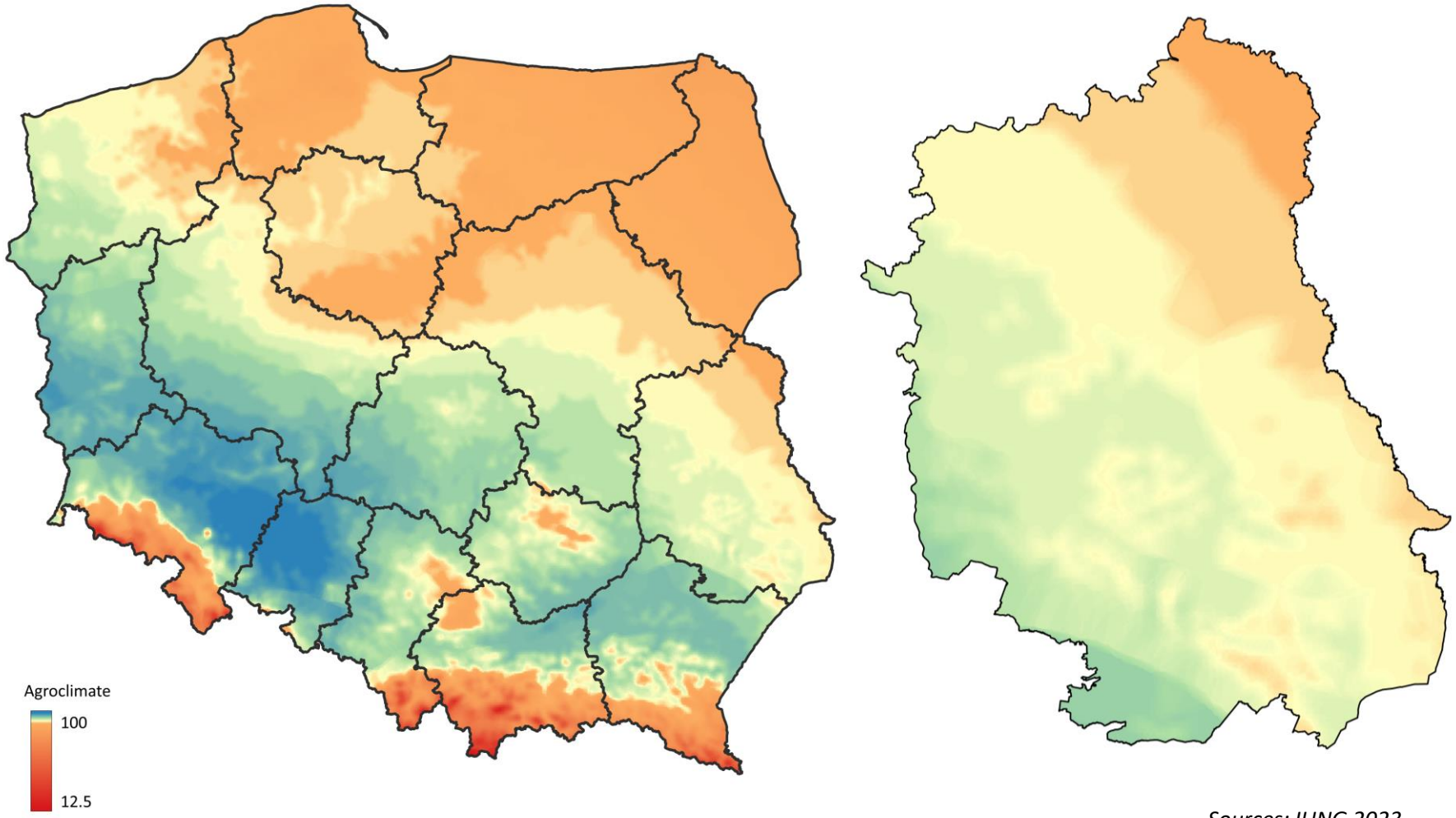
Environmental conditions for agricultural production in Poland and in the Lubelskie Voivodeship

Department
of Bioeconomy
and Systems Analysis

IBO Summit 2023 Poland

Agroclimate:

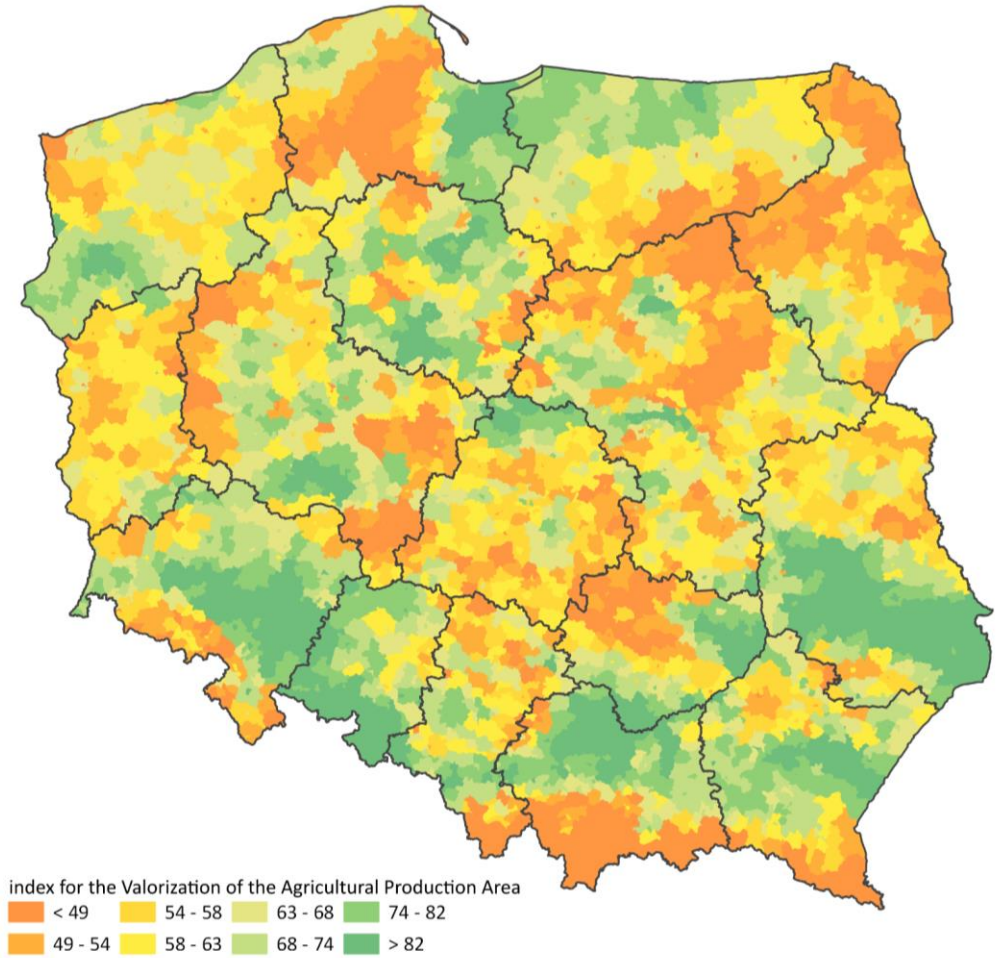
- insolation,
- temperature,
- precipitation,
- wind,
- growing season

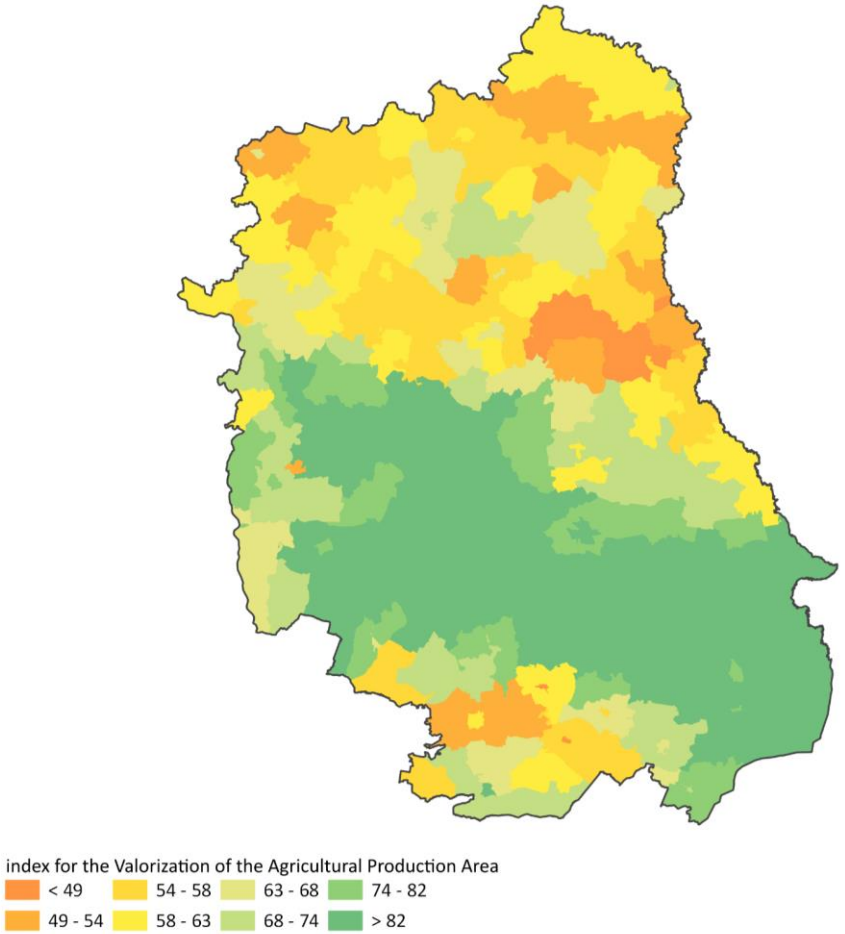


Sources: IUNG 2023

Poland	Lubelskie
min 17.4	min 90.1
max 100.0	max 95.0

Valorization index of the Agricultural Production Area



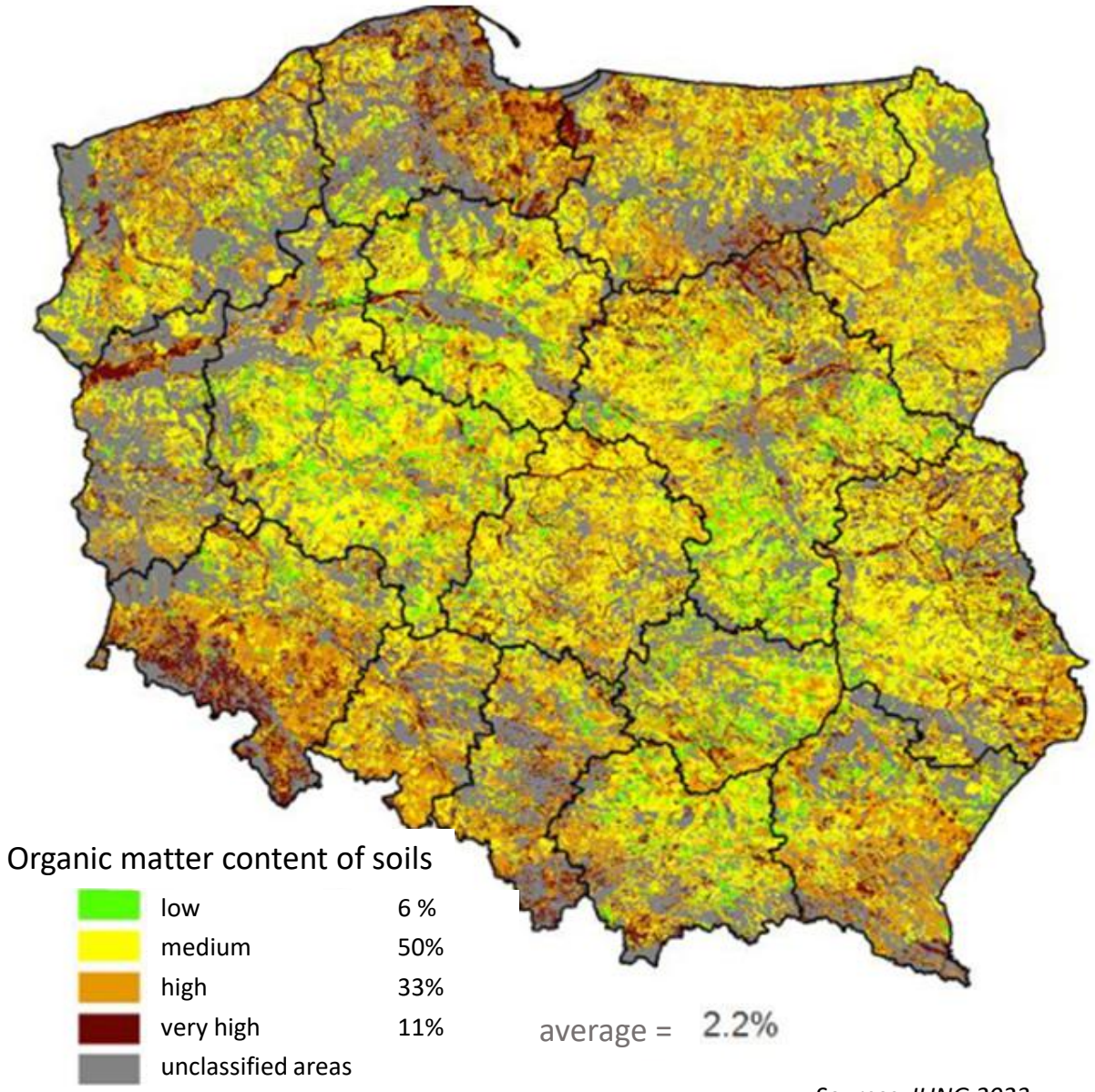


Poland	Lubelskie
mean 65.0	mean 72.6
min 30.9	min 47.1
max 108.3	max 103.9

Sources: IUNG 2023

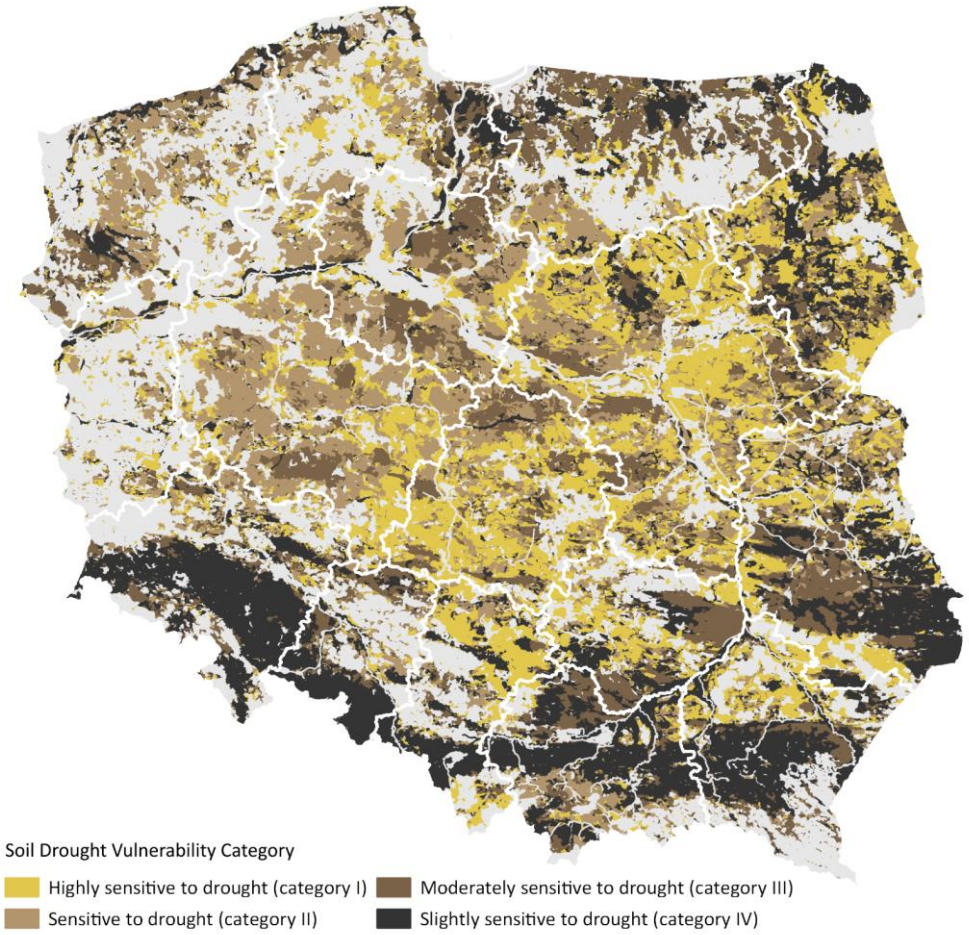
Organic matter content of soils-

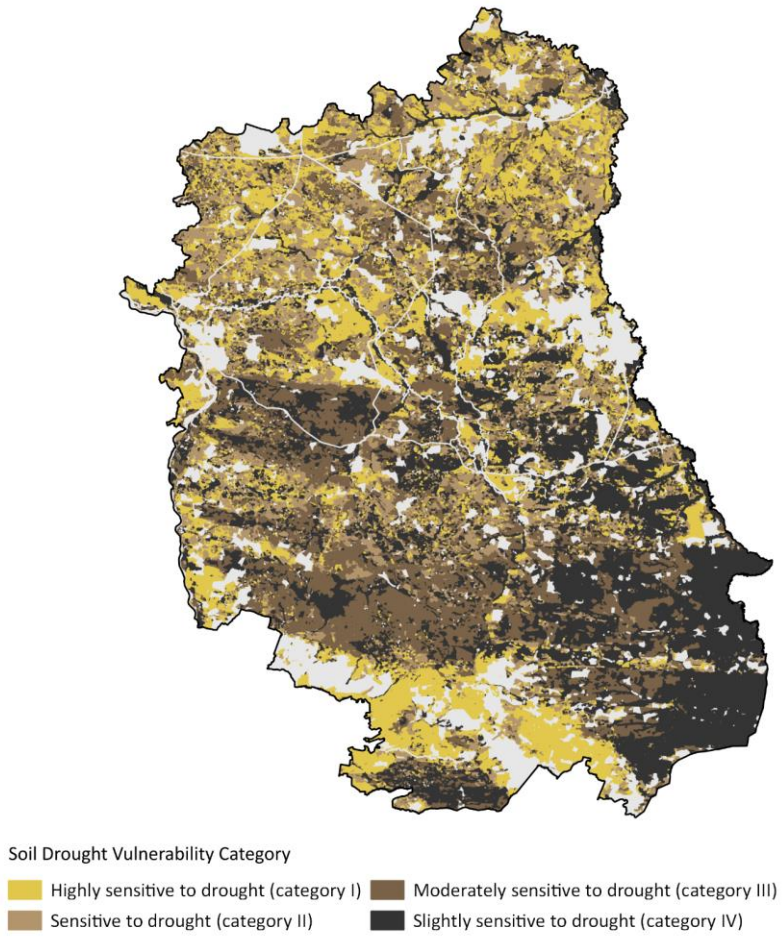
- approx. 55% of soils with low and medium content



Sources: IUNG 2023

Soil Drought Vulnerability Category

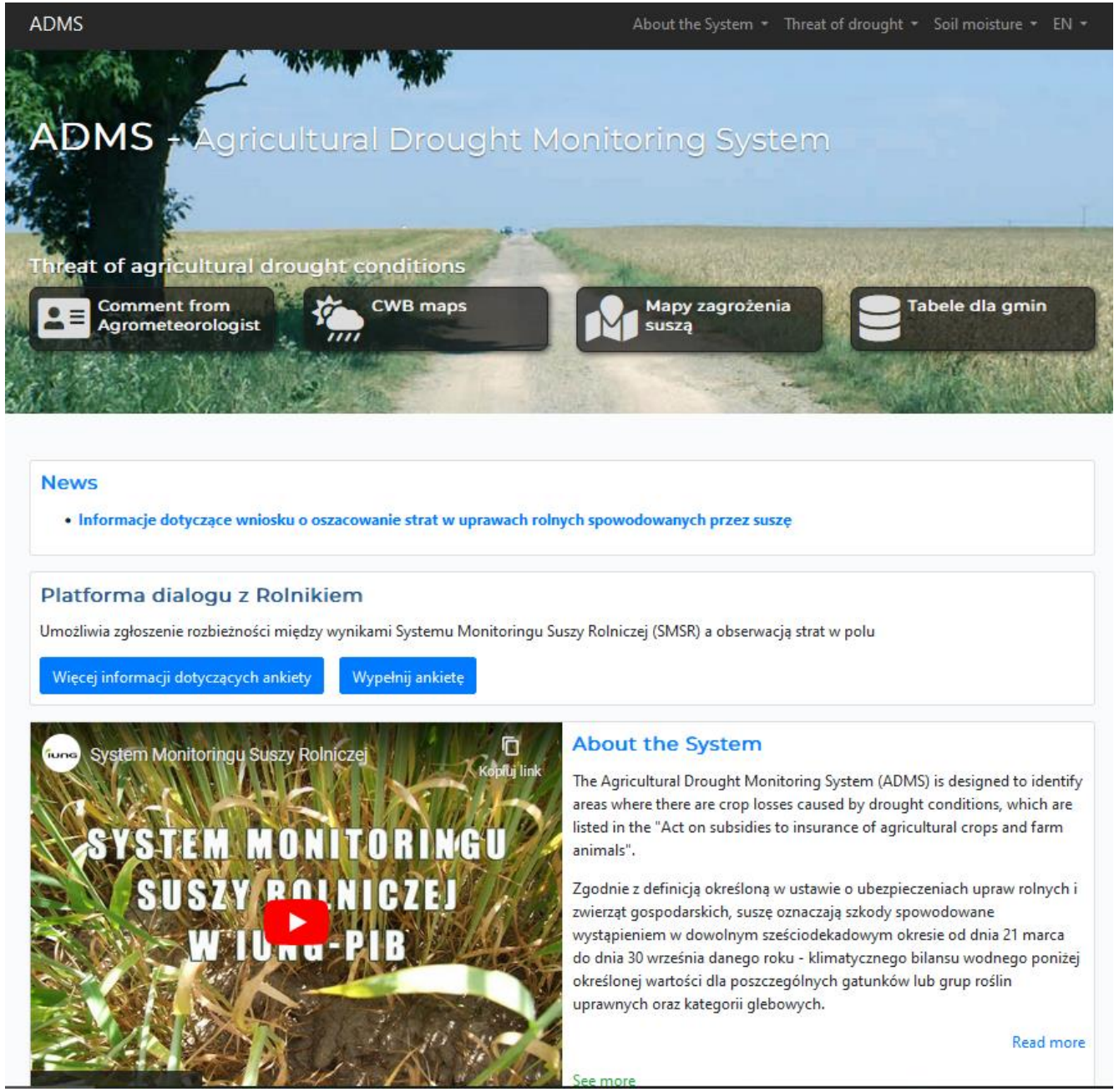




Poland	
category	share [%]
I	27.1
II	27.2
III	23.3
IV	22.4

Lubelskie	
category	share [%]
I	23.2
II	19.9
III	26.4
IV	30.4

Sources: IUNG 2023



Sources: IUNG 2023

Climatic Water Balance (CWB)

In the ADMS, meteorological conditions causing drought are evaluated based on the climatic water balance (CWB).
CWB expresses the difference between the precipitation and potential evapotranspiration.

$$CBW\ (mm) = P\ (mm) – ETP\ (mm)$$

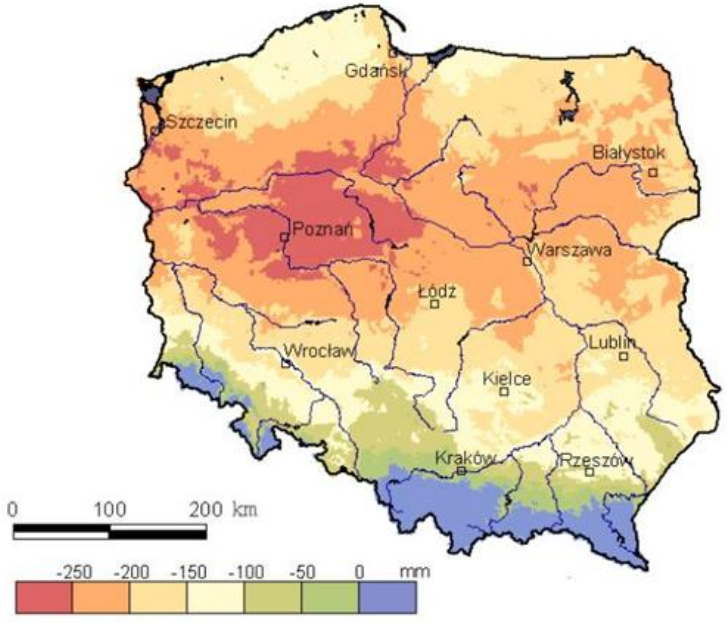
CBW Climatic Water Balance

P precipitation in a given period

ETP Penman evapotranspiration in a given period

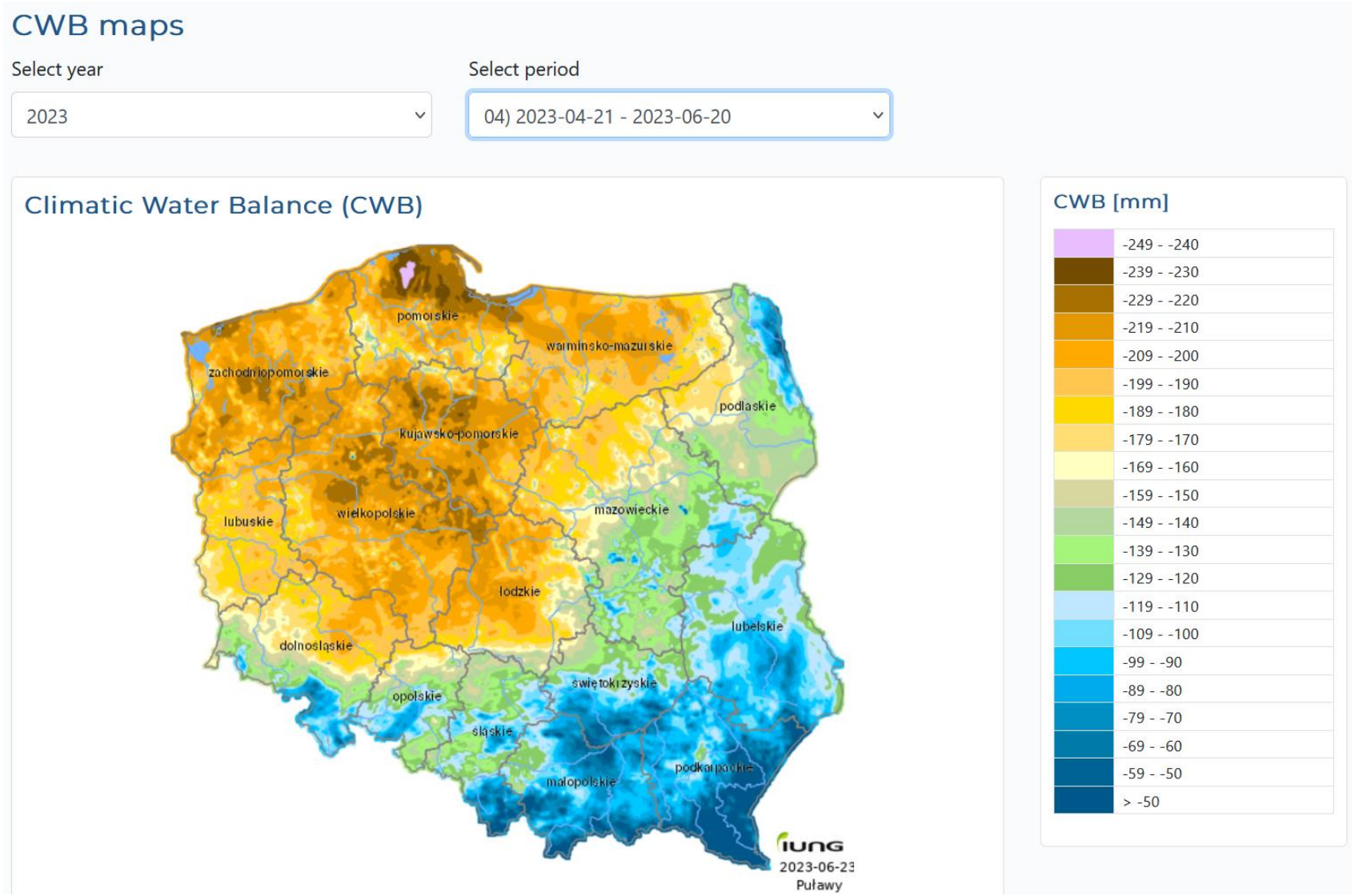
The meteorological data used to calculate ETP:

- ❑ sum of real sunshine,
- ❑ total insolation potential,
- ❑ the average wind speed,
- ❑ the average air temperature,
- ❑ average relative humidity



Sources: IUNG 2023

Map of Climatic Water Balance (11.IV – 10.VI)



Sources: IUNG 2023

Crop and soils specific climatic water balance levels indicating crop drought conditions

Variety of field crops	Soil category	Sixty-day period												
		21.III - 20.V	1.IV - 31.V	11.IV - 10.VI	21.IV - 20.VI	1.V - 30.VI	11.V - 10.VII	21.V - 20.VII	1.VI - 31.VII	11.VI - 10.VIII	21.VI - 20.VIII	1.VII - 31.VIII	11.VII - 10.IX	21.VII - 20.IX	1.VIII - 30.IX
Fruit shrubs	**I**	-149	-148	-147	-147	-149	-154	-159	-162	-163	-162	-160	-157	x	x
	II	-166	-165	-164	-164	-166	-171	-176	-179	-180	-179	-177	-174	x	x
	III	-200	-199	-198	-198	-200	-205	-210	-213	-214	-213	-211	-208	x	x
	IV	-217	-216	-215	-215	-217	-222	-227	-230	-231	-230	-228	-225	x	x
Fruit trees	**I**	-168	-171	-175	-180	-187	-193	-199	-205	-210	-215	-220	-223	x	x
	II	-190	-193	-197	-202	-209	-215	-221	-227	-232	-237	-242	-245	x	x
	III	-229	-232	-236	-241	-248	-254	-260	-266	-271	-276	-281	-284	x	x
	IV	-249	-252	-256	-261	-268	-274	-280	-286	-291	-296	-301	-304	x	x
Strawberries	**I**	-133	-137	-143	-152	-163	-178	-190	-198	-202	x	x	x	x	x
	II	-150	-154	-160	-169	-180	-195	-207	-215	-219	x	x	x	x	x
	III	-183	-187	-193	-202	-213	-228	-240	-248	-252	x	x	x	x	x
	IV	-204	-208	-214	-223	-234	-249	-261	-269	-273	x	x	x	x	x

Clarification of soil categories

I - very light soil, granulometric group:	sand
II - light soil, granulometric group:	loamy sand
III - medium-heavy soil, granulometric group:	sandy loam silt
IV - heavy soil, granulometric group:	sandy clay loam loam clay loam silt loam clay

Sources: IUNG 2023

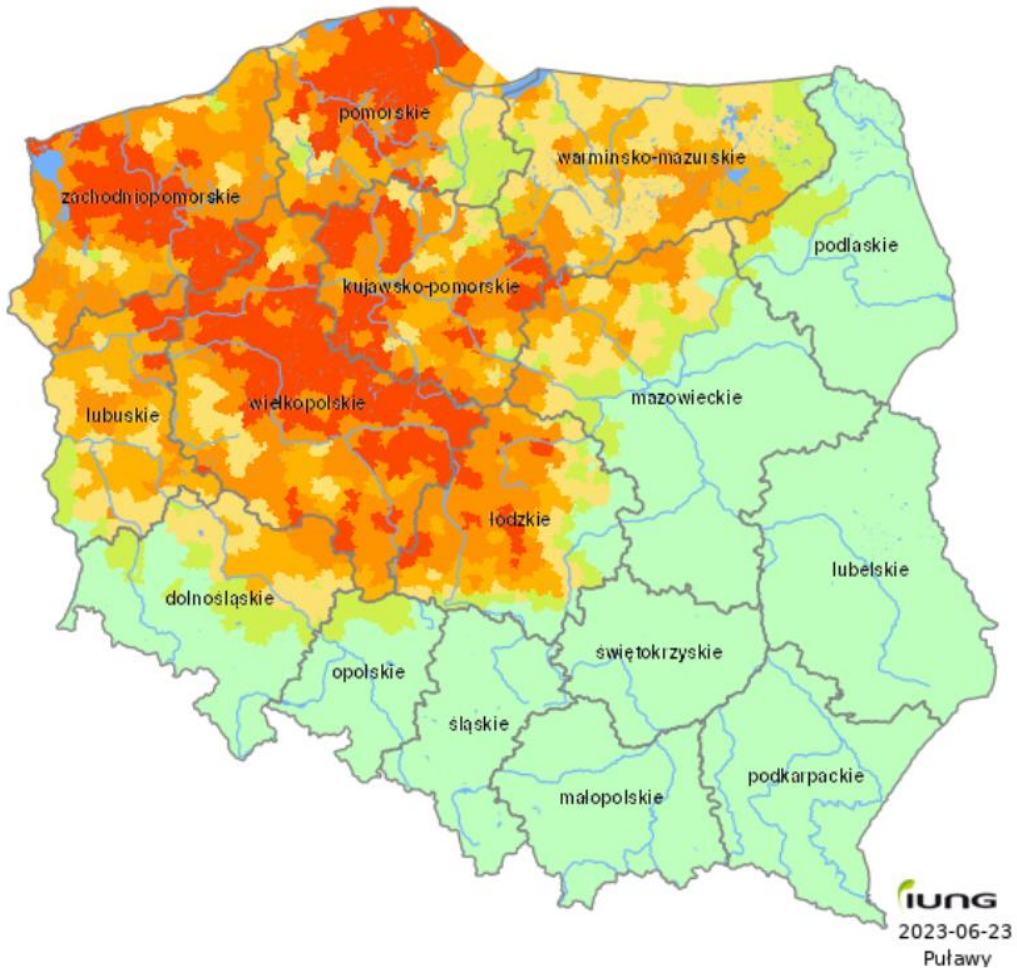
Potential zones of drought

Select year: 2023

Select period: 04) 2023-04-21 - 2023-06-20 [S]

Select crop: Fruit trees [S]

Fruit trees



Participation of soils at drought risk

	The drought benchmark (according to the Act. Dz. U No. 150) was not exceeded
	< 10 %
	10 - 30 %
	30 - 50 %
	50 - 80 %
	> 80 %

Sources: IUNG 2023

IBO Summit 2023 Poland

IBO SUMMIT 2023
Lublin, 3-6 July 2023

Adapting to changes in water availability:

- introducing water-saving irrigation systems,
- eliminating inefficient water use,
- use of farming techniques that reduce the evaporation of water from the soil surface and treatments that increase the retention capacity of soils,
- adaptation of agricultural practices to limited water resources,
- introduction of crop structures as well as plant species and varieties conducive to economical water management,
- care for soils and their retention properties.

IBO Summit 2023 Poland

IBO SUMMIT 2023
Lublin, 3-6 July 2023

What does the government do?

"Drought Effects Counteracting Plan" (PPSS)
https://dziennikustaw.gov.pl/D2021000161501.pdf

"Water Deficiency Counteracting Program" (PPNW)
https://www.gov.pl/web/infrastruktura/program-przeciwdzialania-niedoborowi-wody

- ▸ FEFTS information type
- ▸ Solution type
- ▸ Use of FEFTS
- ▸ Agricultural application
- ▸ FEFTS type
- ▸ Reference language
- ▾ Keywords
  - Adoption Behavior
  - Agricultural Buildings
  - Agricultural Implements
  - Agricultural Machinery
  - Agricultural Products
  - Agrivoltaics
  - Anaerobic Digestion
  - Ash
  - Battery Storage Systems
  - Biochar
  - Biodiesel

Sort By: **Newest**

Showing 11 to 20 of 138 FEFTS
(filtered 138 from 1655 total FEFTS)

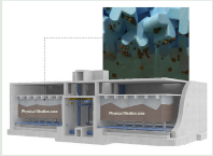
EC2CE

Our technology learns from the past to predict the future in order to increase y...

PV Pumping inverter PSk Hybrid Solar Wat...

The Complete Hybrid Solar Water Pumping Solution LORENTZ PSk is a family of s...

PROTEUS - Biofiltration system



Proteus is a state of the art biofiltration for all your wastewater applications...

2-Stage Anammox System

With livestock production at the core of Hongcheon's economy, managing the...

Ardeusi.gr

Ardeusi.gr is an integrated smart irrigation system that aims to facilitate the...

Irrigantionsystems

There are various products for irrigation for different industries. From drip pi...

BLUMAT DRIP SYSTEM

The drip system consists of only a few components and can be assembled without t...

AutoPot

AutoPot irrigation systems have been successfully used for many years for automa...

Seawater Greenhouse

Seawater Greenhouse can provide full feasibility, design, implementation and sup...

Efficiency in the use of resources for t...

The LIFE PRIORAT+MONTSANT project developed and demonstrated a model of sustaina...

This project has received funding from the European Union`s Horizon 2020 research and innovation programme under grant agreement ID 101000496

IBO Summit 2023 Poland

IBO SUMMIT 2023

Lublin, 3-6 July 2023

Thank you

Please visit our website:
https://biogospodarka.iung.pl/en/
email: mborzecka@iung.pulawy.pl