

STUDY AREA DESCRIPTION

# POLISH NE LOWLANDS

PODLASIE AND WARMIŃSKO-MAZURSKIE, POLAND



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## **POLISH NE LOWLANDS**

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the European Union**

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## 1 INTRODUCTION

Nestled in northeastern Poland, the Podlasie and Warmińsko-Mazurskie regions embody the essence of traditional, small-scale farming. This is a landscape shaped by nature consisting of an intricate mosaic of forests, postglacial lakes, and meandering river valleys, which are interwoven with pastures, meadows, and small fields bordered by willow hedgerows. Cattle farming, particularly dairy production, has long been the backbone of the region's rural economy.

However, agriculture here is currently undergoing a profound transformation. Traditional, small grazing herds are increasingly being replaced by large-scale, commercial operations, with dairy production shifting toward indoor systems. At the same time, the eastern parts of this region have served as a stronghold for wolves and lynx throughout the past century. Since the early 2000s, wolf populations in particular have been expanding in both range and number, gradually reclaiming the broader landscape.



**Figure 1:** Extensive grazing of dairy cattle in the postglacial hilly pastures of Warmińsko-Mazurskie region (NE Poland), exemplifying traditional low-intensity livestock systems in the area (Photo Credit: Gabriela Hopek).

## 2 OVERVIEW

- ▶ **Municipalities:** The study area covers 13 municipalities located within two northeastern voivodships: Podlaskie and Warmińsko-Mazurskie.
- ▶ **Geographical size:** The combined area of the 13 municipalities is approximately 3,000 km<sup>2</sup>.
- ▶ **Human population:** The municipalities are inhabited by around 142,000 permanent residents.
- ▶ **Number of livestock farmers:** According to 2024 district-level data from the Agency for Restructuring and Modernisation of Agriculture, the six districts encompassing the study municipalities (total area approx. 11,700 km<sup>2</sup>) included 8,115 cattle herd owners (approx. 258,000 animals), 332 sheep herd owners (approx. 13,000 animals), 286 goat herd owners (approx. 2,500 animals), and 1,603 horse owners (approx. 10,800 animals).
- ▶ **Livestock farming systems:** Predominantly extensive cattle farming, based on low-input, family-run operations that rely on natural grazing resources. Grazing areas are usually located within or close to settlements.
- ▶ **Large carnivore species:** Wolves (*Canis lupus*) and lynx (*Lynx lynx*) are present in the area.
- ▶ **Wolf and lynx population:** According to the most recent EU report, wolves occur throughout the entire area, while lynx are largely confined to larger forest complexes. There are currently no reliable official population estimates for either species due to the lack of systematic monitoring. Both species have persisted, at least in the easternmost parts of the region, throughout the past century, with their distribution and numbers increasing since 2000, particularly in the case of wolves.

## 3 SOCIOECONOMIC CONTEXT

- ▶ Podlaskie and Warmińsko-Mazurskie are among the least densely populated regions in Poland, characterised by a mosaic of farmland, forests, wetlands, and postglacial lakes, making them attractive destinations for tourism and recreation.
- ▶ Agriculture remains a key sector, with many small and medium-sized family farms dependent on livestock and dairy production. Cattle breeding and dairy farming dominate, while sheep farming plays a smaller role. Livestock farming remains an important source of income and employment.
- ▶ Podlaskie is highly specialised in intensive dairy production, shaped by fertile valleys and strong livestock traditions. In contrast, Warmińsko-Mazurskie has a more extensive, lower-intensity agricultural system due to its abundance of lakes and forests, as well as its lower population density.

- ▶ Farm structures are gradually shifting towards more commercial operations, though many holdings remain small, family-run, and diversified.
- ▶ Beyond agriculture, key sectors include tourism, forestry, wood processing, and the agri-food industry, with some urban growth in IT and services.
- ▶ Both regions are recognised for their high natural value and extensive protected areas. They play an important role in biodiversity conservation and the recovery of large carnivores, such as wolves and lynx. This creates both opportunities and challenges for livestock farming.
- ▶ Recent geopolitical tensions along Poland’s eastern border, the humanitarian crisis on the Polish–Belarusian border in 2021, and Russia’s invasion of Ukraine in 2022, have all increased economic uncertainty. This has affected farming costs, trade, and tourism in some areas.



**Figure 2:** Livestock in the region is often grazed close to the forest, which makes them more vulnerable to large carnivores (Photo Credit: Gabriela Hopek)

## 4 FARMING CONTEXT

Agriculture in the region is characterised by the above-average importance of animal production, particularly dairy farming and cattle breeding.

Overall, the landscape forms a mosaic of intensive indoor systems, seasonal grazing, and extensive pasture-based livestock farming, which is linked to the surrounding natural habitats. This close proximity between livestock and natural areas increases the likelihood of interactions with wildlife, including large carnivores.

Cattle are mainly dairy breeds, such as the Polish Holstein-Friesian, Simmental and local breeds (e.g. Polish Red), especially in low-input or organic systems. Dairy cows are typically kept indoors for most of the year and graze seasonally, depending on the farm type and conditions. In contrast, extensive beef production often involves year-round grazing.

Sheep farming is less widespread but still present, with breeds such as Polish Lowland, Świniarka, Wrzosówka, and Kamieniecka, usually managed in extensive or semi-extensive systems.



**Figure 3:** Scottish highland cattle is valued for their defence abilities against wolf attacks. Beef cattle like this breed is often grazed outdoors all-year-round (Photo Credit: Gabriela Hopek).

#### Main Challenges:

- ▶ **Increasing droughts and extreme weather events** cause crop and forage losses, increasing uncertainty in agricultural production.
- ▶ **Rising costs** of fuel, fertiliser, feed, machinery, and energy, combined with market price volatility, put economic pressure on farms.
- ▶ **Animal health risks and wildlife-related damage** remain important challenges, including African swine fever (ASF), avian influenza, and, in some areas, livestock losses due to wolf predation.

- ▶ Farmers face **administrative burdens related to EU/CAP subsidies**, including complex procedures, electronic application systems, and delayed payments.
- ▶ **Ageing farmers, limited farm succession, and fragmented farm structures** reduce investment capacity and mechanisation, particularly on small family farms.
- ▶ **Labour shortages and rising labour costs** create difficulties in recruiting seasonal and qualified workers for crop and livestock production.



**Figure 4:** Sheep and goats are less common than cattle in NE Poland, but are more likely to be attacked by wolves (Photo Credit: Gabriela Hopek).

## 5 LOCAL CONFLICT ASSOCIATED WITH LARGE CARNIVORES

### Number of attacks:

Between 2022 and 2024, 68 wolf attacks on livestock were recorded across the 13 studied municipalities (including 27 attacks in 2024 alone), resulting in 229 animals being killed. Although cattle outnumber sheep in the region, sheep accounted for the majority of losses, including several mass depredation events with up to 40 animals damaged in a single attack. In addition to cattle, sheep, goats, and horses, wolves also prey on farmed fallow deer and red deer. Attacks on domestic dogs in

house yards are also becoming increasingly common. Most attacks occur during the grazing season, typically on pastures located near villages.

#### **Social conflict:**

- ▶ **Limited support for strict wolf protection:** Many rural residents view the current legal status of wolves as inadequate, and favour regulated hunting in specific seasons or areas, although overall attitudes remain neutral to slightly positive.
- ▶ **Fear of wolves:** Despite their long-term coexistence with humans, wolves are generally still perceived as a cause for concern, although reported levels of fear are low.
- ▶ **Perceived inadequacy of compensation:** Compensation schemes are often considered insufficient, as they do not account for future losses or unrealised benefits, particularly in cases involving very young animals.
- ▶ **Increasing social polarisation:** This issue reflects the broader divisions between stakeholder groups with different views on nature, wildlife, and conservation priorities.

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