



Risk assessment of African swine fever virus transmission at the wild and domestic pig interface in Lombardy

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Introduction

- African swine fever (ASF) is a fatal disease affecting domestic and wild pigs;
- In Italy, in 2022, the ASF virus was detected in Piedmont, Liguria and Lazio, and it is currently spreading in wild boars;
- Lombardy is at risk of introducing the disease, due to the proximity with Piedmont.

The aim was to create a risk index of ASF virus transmission at wild and domestic pigs interface, estimated at municipality level, which considers the risk factors involved in the spread of ASF.

Method

- Percentage of wooded areas were divided in "0-50%" (low), "50-80%" (medium) and "80-100%" classes (high risk);
- Combination of trichinoscopic examinations, agricultural damages and road accidents;
- Pig farms were classified as "non-commercial" "commercial" and "outdoor", less and more exposed at risk, respectively. Density of farms were computed and split into tertiles, including 95% of data;
- Municipalities were then classified in risks categories ("low", "medium-low", "medium-high" and "high") based on the combination of risk assessment of ASF virus calculated in domestic and wild pigs.

Results

Figure 1

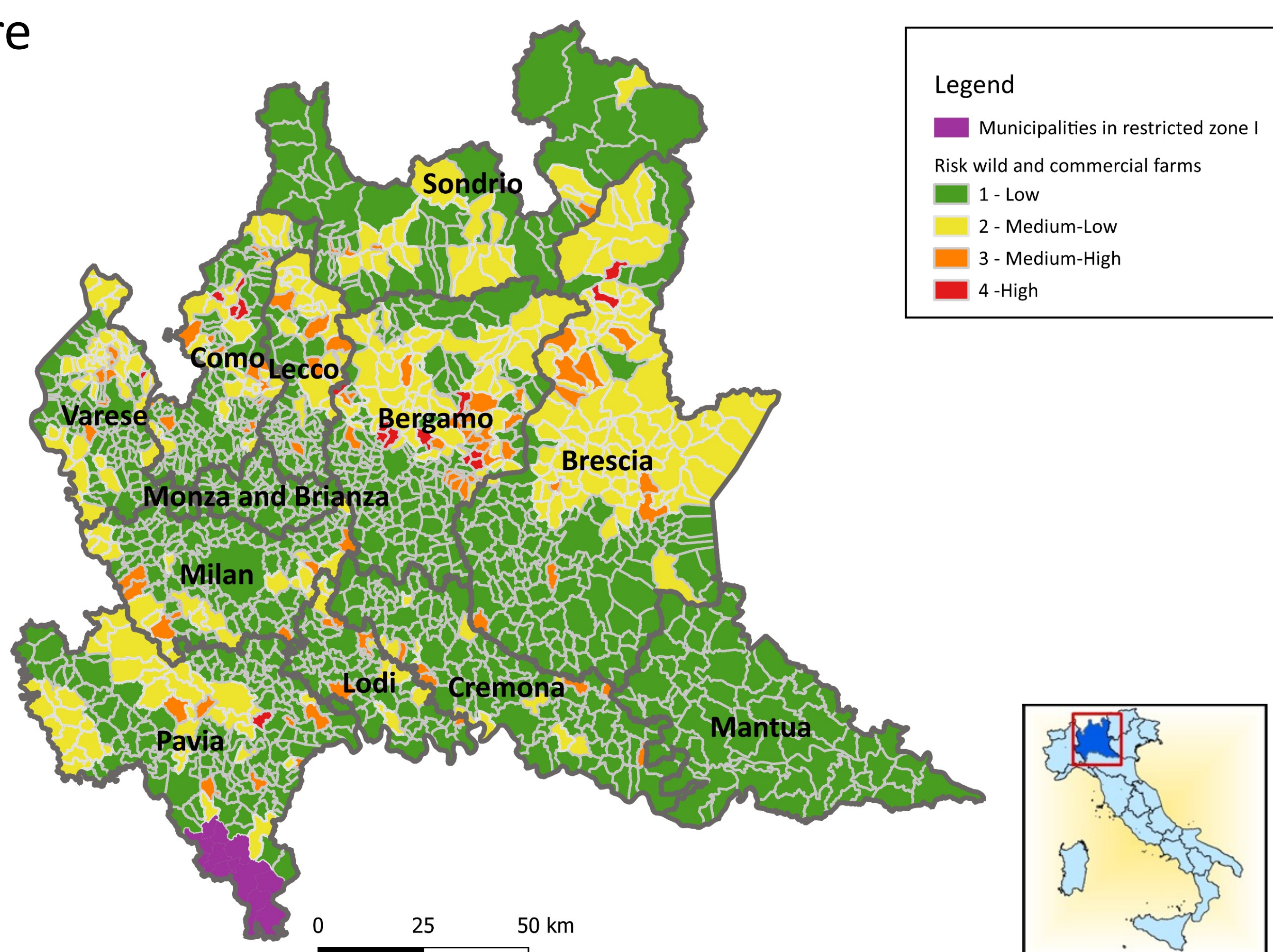


Figure 2

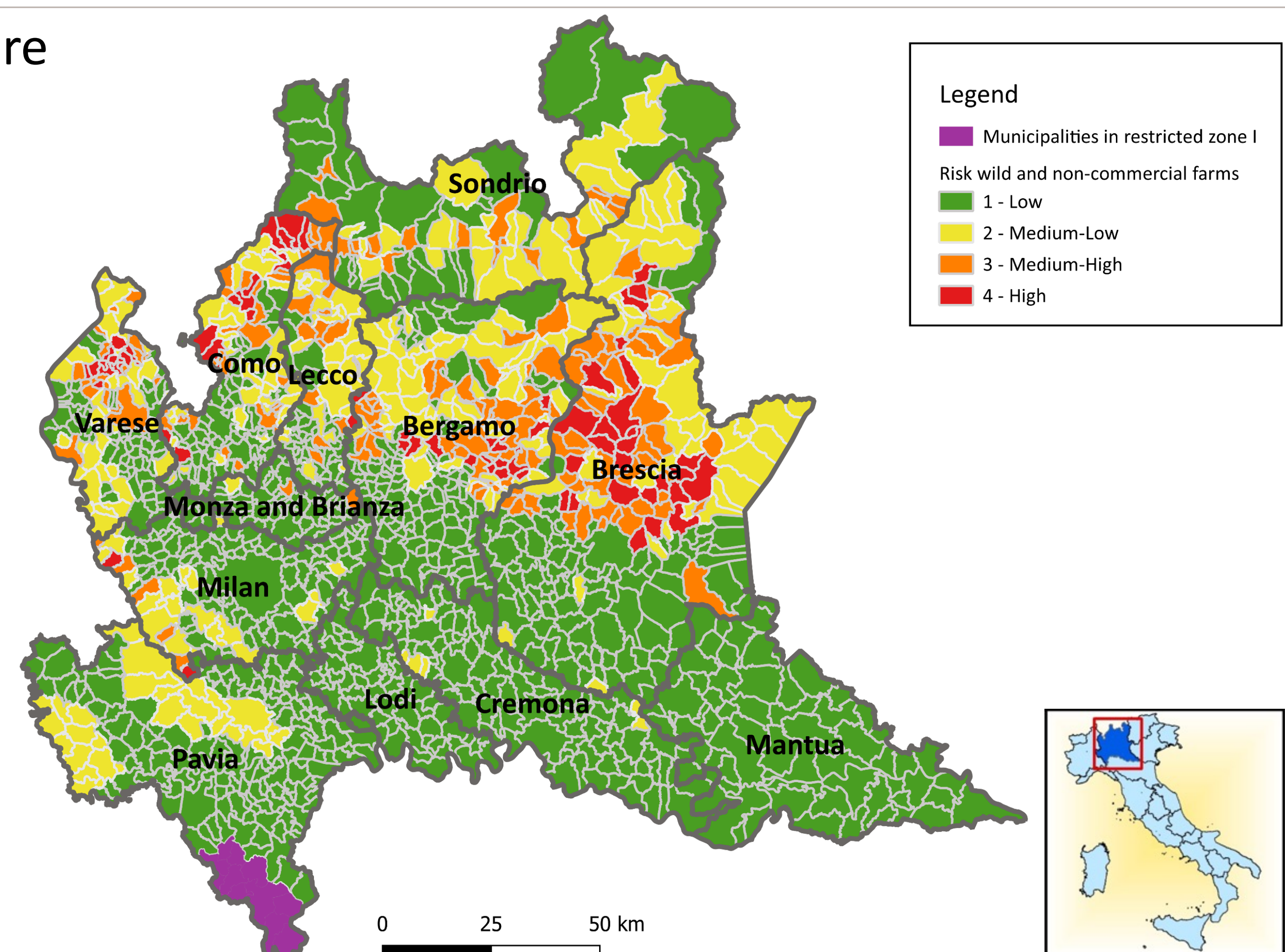
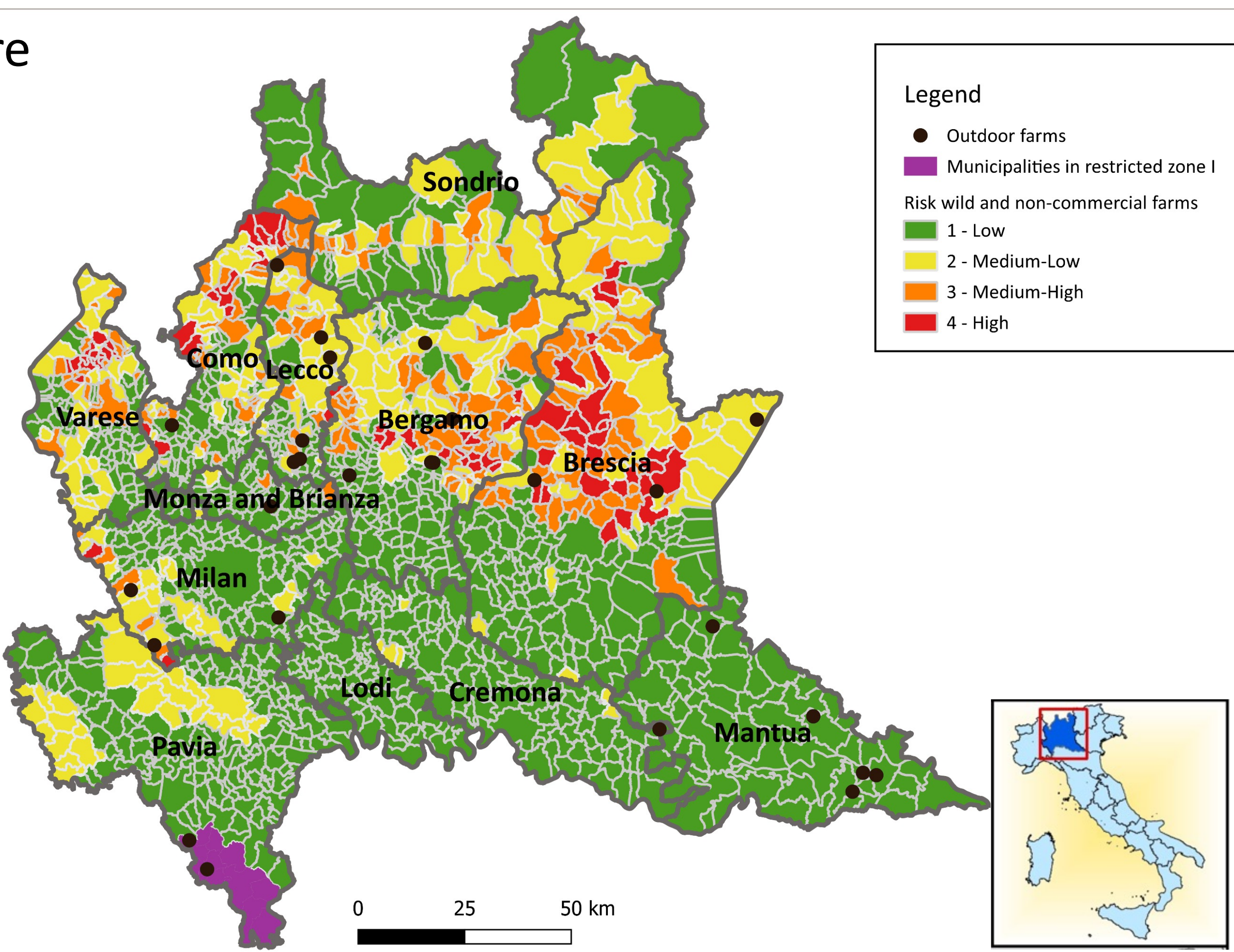


Figure 3



- Commercial farms (Figure 1):
 - most of the municipalities were classified as low or medium-low risk;
 - only few municipalities (7%) were at medium-high or high risk.
- Non-commercial farms (Figure 2):
 - 84% of the municipalities resulted at low risk;
 - 34% and 25% municipalities with higher risk were located in Brescia and Bergamo provinces, respectively;
- Outdoor pig farms (n.27) were rare (Figure 3):
 - 23% were in the medium-high risk municipalities, 3 of them located were located in Lecco province.

Conclusion

This method makes it possible to identify the territories in which the spread of ASF virus from feral to domestic pig is most likely. These results were used by Regional Veterinary Authority to strengthen prevention and control measures on farms in the territories most exposed to the risk of ASF virus transmission.



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