

Assessment of Regional Vulnerability to Africa Swine Fever in China Based on a DEA Model

Juan Li¹, Lu Gao¹, Baoxu Huang², Youming Wang¹, Zhen Jin³, xiangdong Sun¹, Ping Liu⁴, Quangang Xu⁴, and Huaiping Zhu⁵

¹China Animal Health and Epidemiology Center

²China Animal Health and Epidemiology Centre

³ Shanxi University

⁴Affiliation not available

⁵York university, Canada

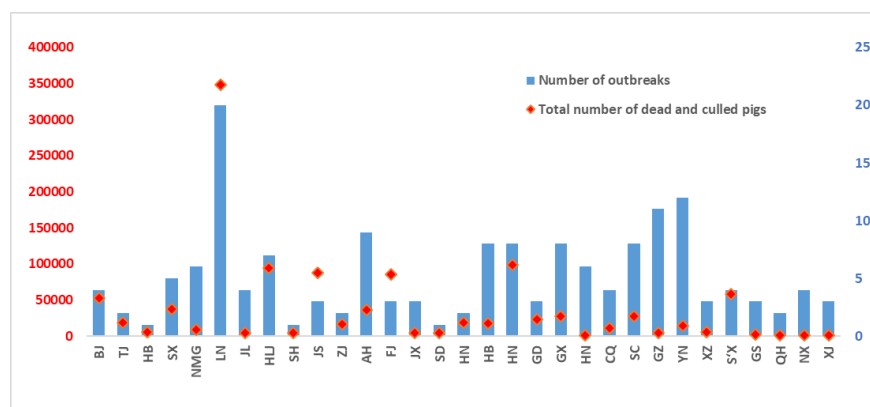
June 10, 2020

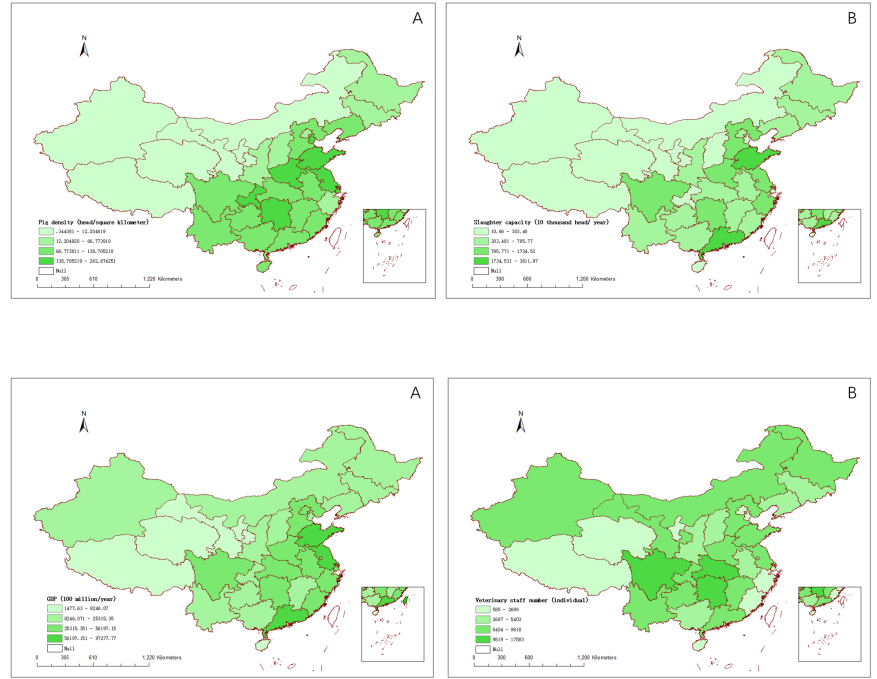
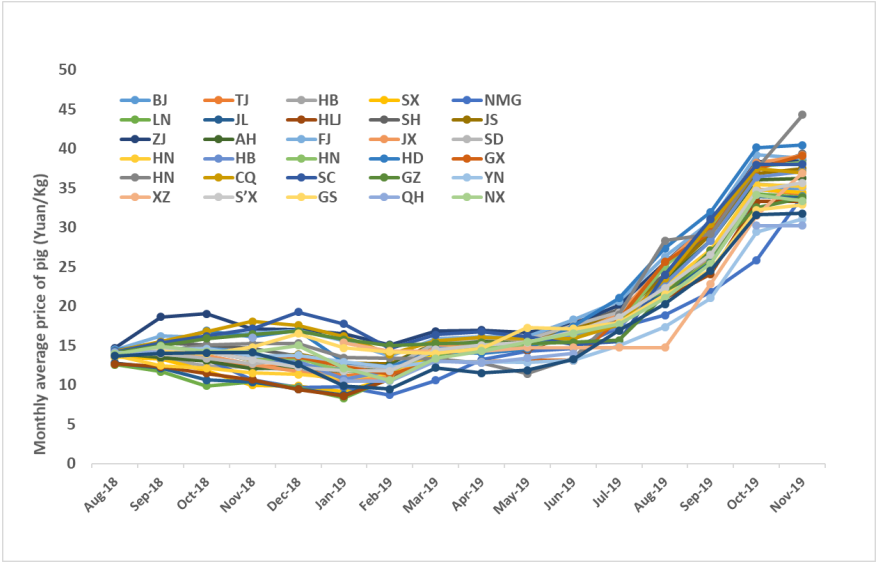
Abstract

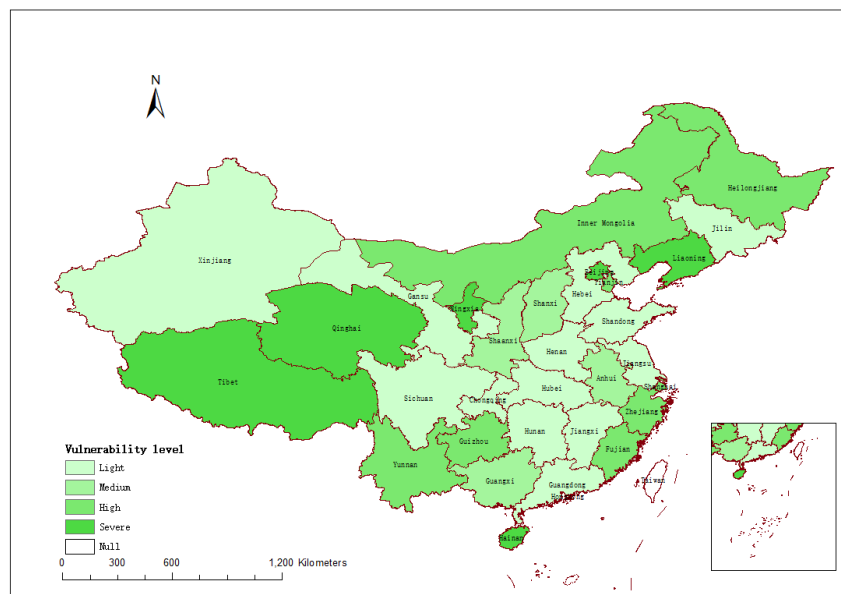
In this study, we introduce the vulnerability index to measure the regional ASF epidemic and present the ASF severity ratings of 31 provincial regions of China. The index is defined based on the data from investigation, national statistical yearbook and reports. The data to be used includes pig breeding, financial resources, human resources, epidemic information of ASF and price fluctuation from the 31 regions. Then we use the data envelopment analysis (DEA) model to define the vulnerability index, the relative severity values for each region which quantitatively reflect the damage degree caused by the epidemic of ASF. The method allows us to provide a systematic classification for regional vulnerability level of ASF in China. Using the index, we find that the vulnerability of the whole country is at a high level, and there is no regional aggregation phenomenon. The vulnerability level of the 31 provinces are quite different and the provinces with high vulnerability level are dispersive geographically. For the five major prevention and control zones for ASF in China, the northern region has the highest vulnerability level, while the level of eastern zoon is the lowest.

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