Abstract

Between 1700 and 1850, English grain yields were substantially higher than those attained in other countries. It is widely believed that yields were constrained by the availability of nitrogen, and that supplies of nitrogen were effectively limited to animal dung produced on the farm. This paper presents the first systematic analysis of *off-farm* sources of nitrogen, such as urban and industrial waste. We show that the use of off-farm nitrogen was both widespread and intensive by 1700, contrary to the received wisdom. We further argue that there was only modest growth in the use of off-farm nitrogen up to 1850. We explain this pattern of use of off-farm nitrogen by supply and demand factors. We use a new method of estimation to show that the overall impact was to raise wheat yields by a constant 20 per cent throughout the period.

Keywords: agriculture, renewable resources, extractive industries.

JEL Classification: N5, Q1, Q2.