Science for Environment Policy

Abandoned farmland widespread in central and eastern Europe

A new study suggests that abandoned farmland is widespread in Europe and that not all land that has been abandoned is unsuitable for farming. Understanding how abandoned farmland is distributed may be important for making land management decisions – for instance, recultivation versus reversion to forest.

To meet the future demands of a growing population, it may be necessary to increase the area of land that is used for agriculture in order to produce food or energy. Rather than turning to areas that have never been cultivated, it would be preferable to reclaim land that has previously been used as farmland, in order to minimise environmental costs, including biodiversity loss. In some parts of Europe, there are large expanses of farmland that were abandoned following the break-up of the Soviet Union and privatisation of agriculture. However, until now, this abandoned land has not been accurately mapped and official statistics are limited.

The researchers used satellite data to map an area of 6.4 million km^2 across central and eastern Europe and the Balkan Peninsula, acquiring estimates of abandoned farmland area in 30 countries. Their results show that in 2005, based on conservative estimates, more than 8% of the area studied was abandoned farmland – a total of 525 000 km^2. The largest areas were in European Russia, northern and western Ukraine and central Romania, with 61% of all abandoned farmland belonging to Russia. Abandoned farmland was less widespread in central Europe and Balkan States.

When the researchers considered the rate of abandonment – the proportion of all farmland that had been abandoned in each country – Belarus, Latvia and Lithuania had the highest rates. By comparison, the Ukraine's large areas of abandoned land made up a relatively smaller proportion of its total farmland. Countries such as the Czech Republic and Poland had large agricultural lands, but low abandonment rates, while Croatia had both small areas of agriculture and low abandonment rates.

One important finding was that a region's natural suitability for cultivation was not strongly linked to its likelihood of being abandoned. Thus, although in most countries, areas that were less well-suited to farming were more likely to be abandoned, there were examples where the opposite was true. In Russia, Latvia, Estonia and Croatia, land that was moderately or well-suited to agriculture was more often abandoned. The researchers say this suggests that in general, abandonment is more strongly influenced by socioeconomic factors, such as farming subsidies, land reforms and EU accession, than the characteristics of the land itself. At the same time, other elements such as plot size, land control and tenure, geographical position and soil characteristics may be important on an individual level.

The accuracy of the map as it relates to Europe today remains debatable, as not only is the data from 2005, classification of land cover is limited by factors such as land complexity and image resolution. However, it does suggest that farmland abandonment is widespread and differs substantially between countries. According to the researchers, the patterns of abandonment identified by mapping suggest it will be possible to find and recultivate farmland that is well-suited for agriculture despite having been abandoned. Assessment of abandoned land in different countries, and its unique characteristics, would be necessary to ensure sustainable recultivation.

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