

In support of soil

Among the conclusions of an examination of the link between land tenure and soil management is that short-term tenancies may lead to practices that could damage soil structure. By **Ian McKenzie, Gwyn Church and Charles Cowap**



After spending a year examining the relationship between soil management and land tenure in Staffordshire and Sussex, two final-year students at Harper Adams University made some contrasting discoveries. But while the two study locations were subject to different external influences, both researchers concluded that it should be possible to include more specific requirements in written tenancy agreements to ensure the longer-term health of soil.

The concern that drove the research was the proposition that short-term farming agreements would have a damaging effect on soil health in the long term. This would arise because farmers working land on short agreements would have little incentive to look after its longer-term condition, especially given high rents, and would therefore seek to maximise their short-term gains at the expense of sustainable land management. And did they? To some extent yes, but the answer is not as clear cut as expected.

Vital asset

Soil, like water and air, is fundamental to human existence and we neglect its long-term health at our peril. Unlike water and air, however, it is a complex material not only in its textural make-up, but also in its structure, fertility and overall health. Texture ranges from very sandy to heavy

clay or silty. Each has distinct characteristics. Understanding these differences is essential to farming practice and sustainable land management. Over the past year, the effects of widespread erosion on bare or thinly cropped soils were clearly visible in rural areas, with soil washing away onto roads, into roadside ditches and the local drainage system.

This vital asset is not easily replaced with annual rates of soil accumulation of 1mm or less. Opinions vary on the best way to manage soils. Many farmers remain committed to deep cultivation using ploughs, discs and harrows, while others prefer a minimum or no-cultivation approach. The maintenance of drainage is also essential, enabling a structure to develop in which water and nutrients can be retained in the fine pores to be found in a well-structured soil. But the best use of those nutrients also calls for careful attention to the chemical balance of the soil itself.

With heavier soils tending to become slightly acidic, the use of agricultural lime is a vital long-term strategy for productive, healthy soil. Yet a lot of the inputs to soil health are themselves long term in nature, with several years' occupation required to reap the full benefits.

So, if farmers cannot be assured long-term occupation rights, is there a danger that they may be tempted to forgo some of these inputs, leading to the deterioration of this most vital of resources? Will this affect crop rotation practice, bringing with it the risk of an unhealthy build-up of pest and disease populations in soil?

Method

A small group of mixed-tenure farmers were chosen for study. The five farmers selected in Staffordshire farmed a total of 4,026ha, of which 2,104ha were occupied under short-term arrangements. The five farmers in Sussex tended a total

of 3,474ha, 1,591ha under short-term arrangements, making the total study area a substantial 7,500ha. Many of the short-term arrangements were farm business tenancies of two to five years, with a number of single cropping or land swap arrangements in the mix.

This approach allowed the researchers to compare the approach adopted by each farmer on the land they owned (or rented long term under traditional tenancies) with the other land they occupied. Farming systems covered potatoes, cereals, livestock and free-range eggs. All the farmers were obliged to maintain a Soil Protection Review (SPR) in order to comply with Single Farm Payment requirements.

Under pressure

An important influence in Staffordshire was the concern of the farmers for their long-term reputation, with one even maintaining a tenanted area as a 'showpiece' to demonstrate his farming prowess when applying for other tenancies. As one farmer commented, it takes "a lifetime to build a reputation and it can be lost in one season". All had a strong wish to pass their farms on to the next generation. Despite this, they found that the farm business tenancies they are offered are getting shorter.

In contrast, farmers in Sussex reported a strong influence from 'London money', land purchased as an investment for its strong capital growth and tax position. It was found that the Sussex farmers felt that the high cost of land had excluded them from the market, and that this had driven more to seek land to rent – pushing up rents. As a consequence, the land had to be worked hard in the short term, with little prospect in the longer term other than that it would go to the next high bidder.

In both counties, the farmers did not distinguish their approach to cultivations

and short-term nutrients on the basis of land tenure. Approaches to cultivation were varied, from traditional plough-based systems to minimum tillage. Some had invested in the latest GPS navigation systems to assist with field work. However, the frequency of potato cropping was a concern in Staffordshire, with several farmers working on rotations of only five years and one even arguing that he would grow potatoes twice in a five-year agreement if he knew it would not be renewed. In contrast, another had extended his potato rotation to seven or eight years on his own land in order to control potato cyst nematode (eelworm).

Similar concerns arose in Sussex. Although the length of agreement had little effect on rotational and fertiliser policies, it was clear that farmers would neglect longer-term activities such as liming, ditching, mole draining and hedging as the end of an agreement grew nearer. The effect of this over time, as successive occupiers take the same approach over a series of short-term agreements, is greater reliance on short-term inputs (fertilisers and, to some extent, herbicides and pesticides to control problems), instead of long-term stewardship of the soil itself in order to ensure that structurally it can sustain cropping more naturally.

It might be hoped that the obligatory SPRs required for the Single Payment Scheme would address these concerns. But all the farmers were dismissive of them, "a box to tick in order to receive the Single Farm Payment", in the words of one. At least three said they would like to see further regulation covering soil organic matter, and the monitoring of produce and residues leaving the farm.

The way forward?

So, can owners and land agents do more? None of the farmers had specific terms in their agreements covering soil management, much less any monitoring of soil condition at the start and end of occupation. The expectations of high rents that drove competitive rent tenders were another factor encouraging practices that could damage soil

structure and the neglect of others that would maintain soil ecosystems.

One proposal to emerge from the research is that tenancies should never be less than five years. Irrespective of this, it should also be possible to include more specific requirements in written tenancy agreements to ensure longer-term soil health.

Soil is, after all, one of the most basic resources and its longer-term neglect can only lead to wide-ranging problems – not only for the farming sustainable intensification agenda, but fundamentally for the way in which water, air and other ecosystem services are managed. Ensuring its longer-term health and vitality is therefore at the heart of good husbandry and estate management – two important principles that have perhaps been diminished in the rapid transition to short-term agreements since 1995.

Should the mandatory SPRs be beefed up? Should minimum terms be introduced to protect soil health? And should tenancy agreements include much greater strictures on both soil management, with a return to mandatory end-of-tenancy compensation for lime and other inputs that will continue to benefit the land, coupled with penalties for neglect of these vital procedures?

The impact of 'London money' in Sussex seems to suggest that when investment pressure comes to the fore, there is indeed a need for some strict obligations to be put in place. Staffordshire offers a more mixed story, but even there high rents with no prospect of continuance would prompt at least some farmers to chance their arm. ●

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The research

Gwyn Church and Ian McKenzie were final-year BSc honours students in Rural Enterprise and Land Management at Harper Adams University in Shropshire when they undertook this research for their final-year dissertations. Both graduated this summer. The theses themselves set out the background to the research in literature reviews covering soils and land tenure, with details of the methodology developed specifically for each project, Church's in Sussex and MacKenzie's in Staffordshire. The two counties were chosen for convenience and prior knowledge, leaving the possibility that other students may choose to undertake future studies in other counties.

A close look at the problem with a small number of farmers was thought to be more useful than a more extensive survey, and the 10 were carefully chosen to be representative. The researchers spent time on each farm over the winter and spring of 2012-13 gathering data based on extended semi-structured interviews. Charles Cowap initiated and supervised the projects as part of his tutoring role, but the students took full responsibility for developing their individual approaches. Both dissertations offer excellent examples of the type of practice-based research that final-year students can undertake, not only developing their skills of logic and analysis, but more general characteristics such as project planning, communication and negotiation.

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