

## ZCB and farmers

### Reactions to land use change

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ZCB starts from a radical perspective of where we need to be to live in a zero carbon way, rather than concentrating on where we are now and how to incrementally change that for the better. This could be understood as devising a theoretically possible model (based on the restrictions of current science and technology) and worrying about how to get there later – having to work within, or indeed often against, the parameters of human behaviour and irrationality. Unsurprisingly, one of the major hurdles ZCB has to

overcome is this human dimension. Here I consider this question in relation to the land use scenario and reflect upon some of the concerns farmers in the UK may have when faced with the imperative to decarbonise.

The land use scenario set out in ZCB suggests a major change to many aspects of current practice, including the introduction of new biomass crops, greater cover of woodland and other carbon-rich habitats, and conversion away from livestock farming to crops. The insights set out here draw on interviews with farmers to gauge their reactions to such changes in land use and the potential for incentive mechanisms, including payments for ‘ecosystem service’ provision (see <http://www.walesruralobservatory.org.uk/our-publications>).

Ecosystem goods and services are the benefits people obtain from ecosystems. They include ‘goods’ such as food and water, the regulatory ‘services’ of flood control and carbon mitigation, and the cultural and spiritual benefits of the environment. Offering payments to farmers for such goods and services is one obvious avenue towards decarbonisation – in other words, we pay farmers to manage their land to enhance carbon sequestration (for instance, payments to incentivise carbon friendly methods of food production and/or alternative land use strategies). This is called ‘paying for ecosystem services’ (PES), and while it has its critics, the following discussion focuses primarily on the responses from farmers to PES and measures like it.

Would such a proposal be viable? The first point to note is that farmers – like most people – do not prioritise financial gain above all other factors. For many, farming is a lifestyle choice as well as a business and so a range of complex factors come into play. For instance, social norms, self-perception and identity are key factors in the processes of decision-making and, as a consequence, we need to be aware that alternative land uses may conflict with how farmers perceive their role.

*“As farmers are getting older perhaps a lot of us will see it as a bit of a pension ... But most of us, I think, want to produce food, that’s the main thing we want to do...”*

Equally, whilst farmers are clearly influenced by financial incentives, they are not prepared to make changes which they feel would cause irreversible changes to the land over the long-term, by reducing fertility or allowing scrub and woodland encroachment:

*“It is quite hard, you have to make business decisions at the end of the day and when you are offered money to take the sheep off the hill it is very difficult to go against that ... but for how long can you make those short-term business decisions to the detriment of the long-term?”*

This point of view has become increasingly pressing in light of the recent emphasis upon food security. Consequently, to engage farmers it is important that decarbonisation should be done in a way that does not create trade-offs between growing food and managing carbon. For example, planting woodland and other habitats for carbon storage should be done in consultation with farmers and in a way that works with their farming systems. In this way we are less likely to plant up their best agricultural land, or large open fields, but to better place trees and scrub in margins and on poorer quality land.

Another point that the farmers in our study highlight is the need to take account of carbon management across food supply chains, given the increasingly long distances travelled in processing, retail and consumption. Hence, farmers argued that there should be more emphasis on local procurement to reduce carbon footprints. This fits well with the ZCB scenario, but it is clear that major changes to the current patterns of processing and retail need to occur. This would involve renewed investment in the local infrastructure that was lost through previous processes of rationalisation – we no longer have the small-scale abattoirs and dairies that are essential to re-localise our food networks, but they could perhaps be reinstated.

In relation to changes in crop type and shifts from livestock to crops, it is useful to note that many farmers have only begun to specialise in livestock over the last twenty years due to economic pressures. Prior to this, most farms across the UK were mixed,

and even in the most unlikely areas there are records of crops being grown. So it is possible that farmers may be more open to this aspect of ZCB. But again, it remains important to start work from existing cultural norms and expertise, and not to expect a farmer to completely convert their livestock farm to crops. Similarly, the introduction of novel crops may take longer to gain credibility simply because they are new and untested, from the farmers' perspective.

Finally, if we do require farmers to make radical alterations to their current practices, we need to explain in layman's terms why these changes are needed and how the science of climate change and carbon sequestration works. A failure to do so might mean farmers remain cynical and unconvinced, which is a particular issue in the case of the older generation of farmers who remember being encouraged to intensify food production in a way that we now realise causes a negative impact on the environment.

*“I don't know much about this carbon ... nobody's come here to explain ... how does it go up to the atmosphere, does it go from the bare peat or, I don't know ... It would make a difference if we were told a little bit more, the reasons, to see how it works.”*

Overall, there are signs that ZCB could gain credibility with the farming community, but it is critical to maintain a respectful dialogue and acknowledge the importance of tradition and local expertise as a means to build those all-important bridges from science to practice.

#### **About the author:**

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