

Multifunctioning

LAND





A regular presenter on BBC1's *Countryfile*, Tom Heap specializes in investigative films, and has made many BBC *Panorama* documentaries on food, energy and the environment. He is also the presenter of Radio 4's new *Rare Earth* series and was the anchor of *The Climate Show* on Sky News. He talked to Fergus Byrne about his new book *Land Smart*.

At least a third of the world's population is being kept alive by 'extensive chemical fertilizer use' says journalist, author, podcaster and *Countryfile* presenter Tom Heap. Talking to me about his new book, *Land Smart*, he highlights a problem that people have been grappling with for many years. Because of its damage, both in terms of climate change, local pollution, and harm to nature, extensive levels of fertilizer use are not sustainable in the long term. 'So, you've simultaneously got something that's keeping us alive today' says Tom, 'but will harm us badly if we carry on using it in the same way.'

It's a quandary that has engaged the minds of some of the smartest people in agriculture and science, and as Tom says, 'there is no silver bullet' to solve this. But there is, he says, 'silver buckshot', in the sense that 'we need lots of different things to be tried at the same time.' *Land Smart* is an attempt to look at this problem and investigate the current challenges and trade-offs involved in land use.

In the distant past, what we did with land was fairly simple; its essential uses were for food and housing. But in our modern world, beset with more complex challenges and needs, along with a growing population, Tom points out that land use now includes 'carbon storage, energy storage, flood water, space for recreation, space for wildlife, as well as food, and transport, and business, and all those kinds of things.' So, we need to 'be smart about how we use it.'



Although, we know there isn't an 'easy prescription', by profiling a range of different people Tom meets in the pages of his book, he learns ways of balancing and multiplying different land uses. 'For instance,' he says, 'a lot of smart farmers out there are now able to store carbon and produce a lot of food off their land, you've got multiple use. Or they can have a solar farm that's also a great meadow for wildlife. Or you can have a farm where the soil is managed in such a way that it holds water much more effectively, so it lessens flooding downstream. It's really thinking about where we can multifunction land. And in some cases, it might be where land is best used for just one thing and do that extremely well. And one example of that would be land that is already completely wild and hasn't been taken into farming. We must leave that to be completely wild and not take it into farming, and that applies more globally than here in the UK. But there are some spaces like that you might pick out in the UK as well.'

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Tom has tried not to be too polemic in *Land Smart* and has avoided highlighting too many villains in the world of climate and environment issues. However, he couldn't hide his distaste for biofuels. Crops which you end up burning or putting in an anaerobic digester to gain a hydrocarbon fuel from are 'incredibly inefficient' he says. 'If you have a few square meters, or a tennis court or a hectare, or whatever, and put solar panels on it, you will get at least 50 times as much energy as you would get from any biofuel.' He fears that biofuels will become an easy paying crop that will push land use away from food production, and indeed increase the use of fertilisers and chemicals in the pursuit of profit. Despite an initial interest in biofuels, he says 'my feelings went from sceptical to standoffish to pretty hostile.'

In *Land Smart*, Tom also cites many examples of land that could have a multifunctional use such as warehousing being used for solar panels. 'Making useable energy from the light that falls on a warehouse is one of the most obvious and productive multifunctional land uses' he says. But of course, that would require new regulation, for instance planning permission contingent on solar and energy being much more prominent in local plans. Speaking with Clare Bottle from the UK Warehousing Association (UKWA) he learns that one third of all commercial roof space in the UK is on warehousing and if used

for solar power could provide savings of up to £3 billion per year.

Tom also talks about the World Resources Institute (WRI) which he explains has a 'mantra' when it comes to land use, which he says he has quite a lot of respect for. This revolves around 'Produce, Protect, Reduce and Restore.' 'Produce', explains Tom, is about carrying on 'producing a lot of food off a small area' and the question is 'can we find ways of doing that with less fertiliser?' 'Protect', he says, is to 'absolutely keep the wild lands that are wild, wild' and 'Restore' is about areas that have been degraded. 'Can we restore them either to better agriculture, or for better nature use, or maybe use them for energy generation, put solar panels on or wind turbines? Have them become a useful land use again.' 'Reduce', he says, 'includes choices within the food world that we've set up. And there are questions there about eating less altogether, wasting less, and eating less meat, which definitely affects this calculation.'

In recent years many farmers have turned to what is known as 'Regenerative Agriculture', seeing it as a method of farming that helps soil to regenerate and therefore remain productive without excessive fertilisers and chemicals. Whilst the WRI is concerned that this may produce less food than traditional methods, Tom's experience with farmers he had met simply reinforces its value. 'The World Resources Institute' he says, 'are worried about regenerative agriculture because they worry it will result in less food being produced from our existing farmland. So, they will therefore worry that it will push farming into new areas of nature.' This is obviously something that should be avoided. However, he says there are people 'practicing regenerative agriculture whilst not reducing their yield.'

Part of the problem he says is the fact that regenerative agriculture is a rather 'ill-defined term' which he likens to the word 'sustainable' which has become an overused term with multiple meanings. With regenerative farming there is what Tom calls a 'clear goal' which is that 'the land that you control should be improving year by year. Basically, the ground should become healthier, not less healthy year by year. That's the regeneration implied in the title. And I think there are ways of doing that. And as I mentioned in the book, I think science has a big role to play here. And I'm not shutting out any particular scientific



*Tom Heap*

approaches. I think if they can achieve it through conventional science or genetic modification with the right kind of safety tests, then I think those are all to be looked at.'

We need to feed the world's population whilst ensuring the land that feeds us is maintained to a standard that allows it to survive and thrive. Therefore, the mix of looking after wildlife, supporting organic farming and ensuring we achieve recreational and health benefits, means that all aspects of land use must be looked at. Tom calls it a 'wicked problem', because 'we can't just have parkland here and skip around amongst our butterflies while we're trashing the rest of the world to produce our soil, or our lettuce, or whatever.'

Having said that Tom is keen to show that these knotty problems can be tackled and are being tackled by people all over the globe. 'I'm an optimist about these things' he says 'the book is really a series of profiles of people who I think could do it smartly and are showing it can be done. They are, if you like, sort of, pinnacles of best practice. Or at least examples, I think, that we the audience have an interest in, and possibly other landowners could learn from. And so, I think there are ways of doing it. But it's tough. It's hard. It requires people to be smart.'

With a new government in place that may have a less short-term interest in land than the previous one, I ask Tom what he would do if he were in charge of

policy. 'There definitely isn't any evidence that the Conservative Party gained any electoral popularity from dissing stuff to do with climate change' he says. 'But there is no magic button that says simply do one thing, I would definitely open up the conversation. Start asking really smart people some critical questions. How can we produce as much food with much fewer chemicals? That's a critical question and I think that involves scientists, farmers, food, retailers, etc, etc.'

He says we also need to start a conversation about our diets. The types of food we eat and how that determines land use and what is grown. He is not a vegetarian but agrees that as a race we are eating far too much meat.

He describes himself as 'a bit evangelical about food waste' and wonders whether 'we can seriously reduce food waste while we demand that food is cheap. So, I'd also want to start a conversation about how we value food, how we price food.'

When it comes to housing, he says there are questions that should be asked more loudly. 'As an administration, you lock yourself into a number, and it very easily becomes all about quantity, not quality.' Tom believes that solar power, batteries and fuel used to heat homes shouldn't be a 'bolt on afterthought', they should be a 'condition of allowing these things to go ahead. It's about the administration making sure it has the will, and to a certain extent the guts, to do it.'





He cites a law that came into force in Scotland this year that prohibits new house builders from installing direct emission (or polluting) heating systems such as oil and gas boilers.

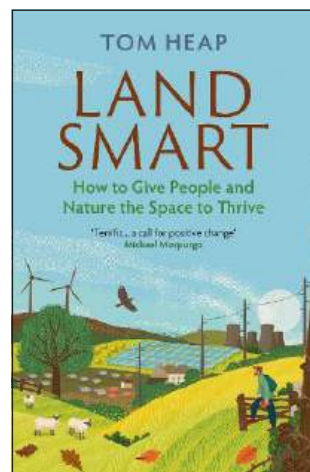
Whilst it's vital to have conversations about the future of our planet, and massively important to implement whatever changes are needed to protect a future for our grandchildren, change is difficult on many levels. Not least behavioural change. This is something that Tom also tackles in *Land Smart*. Talking to Sarah Bridle, author and Professor at the University of York who specialises in how food effects the environment, he hears that globally around 75% of agricultural land is used to grow food for animals, and although meat and milk are very good sources of protein, so are many vegetables, so this ratio is way off the scale.

Sarah makes the point that we have the ability and the land to produce more than enough food to feed everyone on the planet, but we do need to change our behaviour, something that would also decrease the burden on healthcare. The 'Our World in Data' website shows that between 1975 and today, world obesity rates went from less than 5% to around 15%. The increase in ill health caused by trends like this has an enormous effect on healthcare facilities.

But terms like 'nanny state' are not easily avoided when it comes to legislation to help a population become healthier, so the question is what might make us change our habits? Well, according to Professor Tim Benton, an ecologist turned food, politics and environment expert based at Chatham House, our uncertain times may play a part in creating change. Quoted in *Land Smart* he says that nationalism is on the rise and transnational cooperative institutions—like the European Union, the United Nations and the World Trade Organization are 'under siege'. With increasing fragility and increasing volatility 'there's

more political division and potential for all sorts of nasty things to go on.' However, it's the 'looming crisis' in our health systems that 'could embolden governments to influence what we eat.' When it comes to land use Tom Heap concludes that behavioural change is an important tool in the box used to repair our ailing future.

That toolbox has one other item that Tom believes we need to seriously look at when thinking about our future. Whilst most of realise that whatever decisions are made in the coming years are to be made with the future of our children and grandchildren in mind, Tom makes a valid point about education on climate change and solutions for the sustainability of our planet. He says we need to 'respect and invest in education and skills in this area, because this is vital stuff.' Whilst we all see the value of education in engineering, AI or health research, Tom says we need to encourage people to study agriculture and how we use land because 'people working on finding solutions to this on the land are absolutely critical.'



*Tom Heap will be speaking at the Dorchester Literary Festival on October 18<sup>th</sup> at 3 pm. For tickets and more information visit [www.dorchesterliteraryfestival.com](http://www.dorchesterliteraryfestival.com).*