NUFFIELD
Farming Scholarships

Per Plant Farming: How Artificial Intelligence will create a better future for arable farming

Written by:
Sam Watson Jones NSch
July 2025

A NUFFIELD FARMING SCHOLARSHIPS REPORT

KINDLY SPONSORED BY:

The Elizabeth Creak Charitable Trust

ELIZABETH CREAK
CHARITABLE TRUST

NUFFIELD FARMING SCHOLARSHIPS TRUST (UK)

Awarding life changing Scholarships that unlock individual potential and broaden horizons through study and travel overseas, with a view to developing farming and agricultural industries.

"Leading positive change in agriculture"

“Nuffield Farming” study awards give a unique opportunity to stand back from your day-to-day occupation and to research a subject of interest to you. Academic qualifications are not essential, but you will need to persuade the Selection Committee that you have the qualities to make the best use of an opportunity that is given to only a few – approximately 20 each year.

Scholarships are open to those who work in farming, food, horticulture, rural and associated industries or are in a position to influence these industries. You must be a resident in the UK. Applicants must be aged between 25 and 45 years (the upper age limit is 45 on 31st July in the year of application).

There is no requirement for academic qualifications, but applicants will already be well established in their career and demonstrate a passion for the industry they work in and be three years post tertiary education. Scholarships are not awarded to anyone in full-time education or to further research projects.

Full details of the Nuffield Farming Scholarships can be seen on the Trust’s website: www.nuffieldscholar.org. Application forms can be downloaded and only online submission is accepted.

Closing date for completed applications is the 31st July each year.

ISBN: 978-1-916850-50-7
Published by The Nuffield Farming Scholarships Trust
Bullbrook, West Charlton, Charlton Mackrell, Somerset, TA11 7AL
Email: office@nuffieldscholar.org
www.nuffieldscholar.org

A NUFFIELD FARMING SCHOLARSHIPS REPORT (UK)

Date of report: July 2025

"Leading positive change in agriculture. Inspiring passion and potential in people."

Title	Per Plant Farming: How Artificial Intelligence will create a better future for arable farming
Scholar	Sam Watson Jones
Sponsor	The Elizabeth Creek Foundation
Objectives of Study Tour	To understand how new farming technologies are developed in other parts of the world. To assess the opportunities for Artificial Intelligence to support farmer decision making in different farming systems and geographies.
Countries Visited	Brazil, USA, Canada, China
Messages	- There is huge potential for AI in arable farming, although its widespread adoption is not imminent. - Farmer-led startups are an essential ingredient in the future of agriculture. - The UK is a particularly challenging place from which to launch these startups for a number of reasons. - New funding mechanisms are required, and longer term capital deployment is essential.

EXECUTIVE SUMMARY

Per Plant Farming is the idea that it will be possible for a farmer to take action on each plant in their field individually. They will be able to do something to one plant - apply a chemical, a fertiliser, harvest it or kill it if it is a weed - and they will be able to do something different to the plant next to it.

However, farming will only get to that future if decisions are supported by large scale computing and data management power and guided by Artificial Intelligence (AI). AI in turn will only be able to have a significant impact on farming if it is given a consistent flow of up to date, structured, detailed datasets. A fully digitised view of the field.

The vision is that any farm growing any crop anywhere in the world will routinely use Artificial Intelligence to support their everyday decision making. Under a Per Plant Farming system, arable farming would use far fewer chemicals and fertilisers and it would be far more productive.

Transformative visions for a better way of operating have been delivered in many other industries in recent years, from smartphones to e-commerce to electric cars. Perhaps the key driving question behind this project has been; why has the change been so much slower in agriculture?

The study tour sought to find out if there is an opportunity for Per Plant Farming in a diverse range of cropping systems around the world and to see what the UK farming can learn from other systems.

I visited Brazil, Canada, USA and China to explore these questions and saw farms ranging in size from 600,000 hectares to 1 hectare. It was clear that Per Plant Farming is possible on the full range of farm sizes, and the potential benefits are enormous. It is not, however, on the cusp of being adopted worldwide at scale and its full implementation seems likely to be some way in the future.

Recommendations

Startups are essential to driving progress in any industry and large incumbents are not currently driving a vision for Per Plant Farming. Venture Capital is the wrong source of funding for AgTech, which needs longer form, more patient capital investment structures. Government has played a key role in establishing new technologies internationally and is in many ways an ideal funder, but for many reasons this is unlikely to work in the UK. We need new forms of funding to address the challenges of this industry. Regional Ag Tech Studios which are funded with a long term perspective, which support startups for longer and which are guided by farmer entrepreneurs seem to be the right solution. New technologies are inevitable, but if they are not developed by and at least partly owned by primary producers then there is a risk that they serve everyone in the industry except for farmers.

TABLE OF CONTENTS

DISCLAIMER

The opinions expressed in this report are those of the author alone and not necessarily those of the Nuffield Farming Scholarships Trust, of the author's sponsor, or of any other sponsoring body.

CONTACT DETAILS

Sam Watson Jones

Bath, South West

sam@howlemanor.com

Nuffield Farming Scholars are available to speak to NFU Branches, agricultural discussion groups and similar organisations.

Published by The Nuffield Farming Scholarships Trust
Bullbrook, West Charlton, Charlton Mackrell, Somerset, TA11 7AL
email : office@nuffieldscholar.org
www.nuffieldscholar.org

CHAPTER 1: INTRODUCTION

Figure 1: The author. Photo: author's own.

I grew up on the family farm, which has been in my family for four generations. It is a 1,200 acre arable farm, with a broiler chicken unit also on the site.

Growing up, I did not want to be a farmer; in fact, I was desperate to get off the farm and to go and experience the world. However, during my time at university, where I studied English Literature, I became more interested in business and I began to think more about going back to the farm.

In an effort to broaden my breadth of business experience, I spent five years working in London before going back to the farm. As part of this, I spent two years working at Accenture as a management consultant, with a particular focus on new technologies. It was this last experience which particularly sparked my interest in technology as I spent a lot of time looking at how other sectors were being transformed by technology. I began to spend more time thinking about how technology could have a transformative impact on agriculture.

CHAPTER 2: BACKGROUND TO MY STUDY SUBJECT

When I moved back to work full time in the family business in 2011, it was immediately apparent that there was a stark contrast between the pace of change driven by technology transformation in other industries and the relative stagnation and lack of vision in the agriculture industry. Where new technologies were being introduced into farming, there seemed to be a bias towards automating or increasing the efficiency of the farming system we have been operating for the last 100 years, rather than considering what a farming system could look like given the range of technical capabilities that are available today.

Central to my thinking at this time was considering the potential for Artificial Intelligence in supporting decision making on farms. Why was it that Artificial Intelligence (AI) had had almost no impact in farming, whilst it was a critical piece of the infrastructure in so many other sectors?

Eventually, this question led me to start a company looking explicitly at the idea of Per Plant Farming and developing the technologies which could maximise the potential for AI. Small Robot Company was started in 2017 and ran for seven years. Over that time, it raised £9m in equity, and a further £4m in grant funding. At its peak, it employed 55 people and developed some true world firsts in terms of technical achievements. However, whilst we developed some exciting technology, we were too early for the market and specifically too early for significant investment. Being UK-based further limited our opportunities and it was forced to go into liquidation at the start of 2024, after this Nuffield Scholarship had been awarded.

However, despite the failure of this project, my belief that what we had developed was the future of arable farming remained, and I was still determined to continue working on it. I therefore re-focused my Study Tour on increasing my understanding of this area beyond the UK, and to look more broadly at which parts of the world had the right ingredients to enable these technologies to become widely adopted, hence my focus in this report on countries as a whole, rather than individual companies.

Why is this a future that we should choose for our farms? A crop farming system which is managed on a Per Plant basis would be different from today's farms in three fundamental ways.

Firstly, it would have to use a fraction of the chemicals and fertilisers that it uses today. Modern farming has been built around speed and scale, optimising the efficiency of the person hours required to carry out a task. If weeds are identified, herbicide is applied at a uniform rate across 100% of the field, even though the weeds do not appear at a uniform rate across 100% of the field.

If fertiliser is required, a decision that is made on gut instinct and experience more often than not, that fertiliser is generally applied at a uniform rate across the whole field, even though it is widely accepted in the industry that 40% of the fertiliser we apply is wasted. Per Plant Farming would see chemicals and fertilisers still in use, but only applied where they were needed and at exactly the right amounts.

Secondly, a Per Plant Farming system would see huge increases in productivity. The inaccuracies of the modern farming system can be most starkly seen in the gap between the productivity of a trial plot and a commercial plot. In trial plot scenarios today in the UK, winter wheat regularly achieves tonnages approaching or even exceeding 20t/ha. The commercial average in the UK is around 8.5t/ha. The trial plot field has effectively been managed on a Per Plant basis. The timing, amount and placement of any crop inputs has been planned and executed with minute precision, with a 2.3x increase in productivity being the result. It's impossible to replicate this highly accurate approach at scale on today's farms with either people or existing farm machinery, but it is potentially possible with autonomous, smart machines and artificial intelligence.

Thirdly, Per Plant Farming could herald the end of the monoculture. Monocultures are an entirely human creation, designed to make the machinery that we use as efficient as possible. The plant serves the machine, but Per Plant Farming offers the potential for a different approach. In today's farming system, we have millions of genetically identical plants species next to each other with none of the gaps created by other plant species that would exist in a natural environment. Our risk of disease is massively increased and we make ourselves reliant on fertiliser to solve this problem for us. The monoculture has created its own vicious cycle. A Per Plant Farming system would see multiple crops being grown in the field at the same time, each of them treated to achieve optimal output. Different types of machines play a role in this third part of the vision, but all of it is guided by Artificial Intelligence, and none of it is possible without a per plant, digital view of the field.

If the belief that Per Plant Farming is going to be the future is accepted, the three key questions driving this study tour are:

1. What are the ingredients required for Per Plant Farming to become adopted across the globe?

2. Where in the world is going to be the launchpad for Per Plant Farming?

3. How, when and by whom is Per Plant Farming going to be enabled? Will it be new startups or existing incumbents? And what are the consequences of either scenario for the industry?

CHAPTER 3: MY STUDY TOUR

For my study tour, I wanted to visit countries which were, or had the potential to be, at the intersection of developing AI capabilities in a highly significant agriculture market. I, therefore, began by looking at the biggest economies in the world and cross referencing this against a list of the biggest agriculture producers in the world and then further cross-referenced this against countries with the most 'unicorns' (technology startups with a valuation in excess of $1bn) and used this as a proxy for a developed investment ecosystem. Using this criteria, I eventually focused my travels on Brazil, USA, Canada and China as places which all have huge farming sectors, where AI technologies are being developed and deployed both inside and outside of agriculture, and where disruptive technologies are being well funded.

This mix of countries also enabled me to look at a mix of very large farms and very small farms. At the start of my travels, it was not clear to me what size of farm was going to be the first to adopt Per Plant Farming and I therefore wanted to explore this further. Large farms will often self-identify as early adopters and have budgets already assigned to new technologies. At the same time, they operate with such a high level of efficiency that the cost of deploying Per Plant Farming may be prohibitive. On the other hand, smaller farms necessarily have smaller budgets, and so the price point is extremely important to them, too. However, they inherently place a higher value on each individual plant because they have fewer of them.

CHAPTER 4: CASE STUDIES

4.1 Case Study One – Brazil

From the visit to Brazil, it was immediately evident that this was a vastly more dynamic agriculture sector than the UK, focused on rapid growth and change. There are farmers in Brazil who have gone from a family holding of less than 100 hectares to billionaires farming in excess of 600,000 hectares in the space of 30 years. Growth on that scale is completely unimaginable in the UK context. A key criteria for growth, particularly in the arable sector, has been the huge difference in profitability of the farming operations in Brazil as opposed to the UK. In the former, net margins in excess of 35% are not uncommon, whereas something around 1-2% is normal in the UK.

Examples of these farming operation are:

- The Scheffer family, who grew a business from 40 ha in 1980 to 220,000 ha wholly owned in 2024.
- The Bom Futuro farm, which went from 50 ha in the mid 1980s to over 600,000 ha farmed today.
- SLC Agricola was founded about 30 years ago and today farms 660,000 ha.

As a result of these better margins and these opportunities for growth, there is a greater ability to invest in new technologies. Brazil is also a vastly bigger agriculture market, which means that it attracts more investment and provides greater opportunities for new technologies to scale. To support this, agriculture is also much more important to the Brazilian economy, representing over 30% of its GDP, whereas the figure is somewhere around 1% in the UK.

However, it was clear from the visits in Brazil that they were not more advanced in terms of on-farm technology at scale than their UK counterparts. Although there have been huge gains made from the mechanisation of farming systems which were previously very 'old fashioned', such as in cotton, tobacco and coffee crops, AI driven decision making and precision farming still has huge growth potential. Innovations such as double cropping of corn and soy and pivot irrigation have led to increased productivity, but there remains a strong desire to continue to search for future gains in efficiency and productivity, driven by new technologies. We did see good examples of self-funded research and development on these larger farms, which no doubt will yield strong results in time.

In summary, the scale of Brazilian agriculture was a revelation, but on an envisioned transition from mechanisation to artificial intelligence, to autonomy, Brazil is still right at the start of this journey.

4.2 Case Study Two – North America

In part two of my trip, I visited North America, spending time in Ontario, Saskatchewan and California. These three areas were deliberately chosen for their contrasting agriculture systems, climatic conditions, opportunities and constraints.

Although there were huge differences amongst the farming systems in these regions, the way they made decisions was startlingly similar. All the farms I visited were on the point of putting seeds or plants into the ground and making early season crop applications. There were decisions to be made about soil moisture, seed variety, drilling depth and spacing, and application timing. None of these farmers used quantifiable data sources or AI to support these decisions. In Ontario, Saskatchewan and California, farmers all made their decision based on a combination of gut instinct, personal experience and normal best practice in their particular geographical area.

It seems that there are two opportunities for Artificial Intelligence to have a significant impact in North American agriculture.

The first is around supporting decisions that farmers are already making but helping them to quantify this decision and getting to a 'right' decision, which is specific for their farms, for the crops they are growing and the markets they are trying to reach. There is an optimum seed variety, seed spacing, seed depth and nitrogen timing for their farm, which might be different from the farm 100 miles down the road. AI can help farmers to identify 'optimum' in a way that a person would not be able to, removed from human biases. For example, does variety choice have a 5% impact on performance, or a 25% impact? Is drilling timing and conditions 40% of the answer or 4%? AI algorithms with sufficiently granular digital datasets can provide answers to these questions.

The second opportunity, which may be a longer term objective, is in using visual data to spot diseases and issues with the crop that are difficult for people to identify accurately. An example of this is red blotch which is impacting the vineyards of Napa Valley in California. It is difficult for human beings to spot in field, partly because they cannot analyse every plant and therefore miss many of the early development signs. However, with large enough visual datasets covering an entire field, early identification of diseases such as this should become possible.

Another key insight that became apparent during this time in North America was that there is a fundamental problem with where funding and innovation comes from in agriculture. Silicon Valley, the birthplace of modern venture capitalism, has assumed that the VC model is the right mechanism for funding innovation in agriculture, but there was plenty of evidence that this was not the case.

The VC model has achieved success in funding software companies which can achieve growth rates in the early years of 10% per month and achieve a payback for investors within five to seven years. Agriculture simply does not fit this model, requiring longer time frames and a slower development cycle to fit into the seasonal constraints of the system, as well as the challenges presented by the localised nature of farming systems. VCs are looking for a 'winner takes all' model, such as Facebook dominating social networking or Google dominating search. The likelihood of a 'winner takes all' outcome in agriculture feels extremely low.

Firstly, Chuck Baresich, a farmer in Ontario who has engaged with over a dozen startups as a contract service provider, shared a number of examples of businesses that had received funding and had then been forced to pivot to other enterprises in an effort to meet the time frames expected of their VC investors. The result was almost always a less impactful technology and an unsatisfactory service delivered to farmers.

Secondly, Kyle Cobb, CEO of AdvancedFarm, shared a similar story. Kyle had recently closed a $20m Series B investment round. It might seem that his company had reached the promised land of startup investment, but his story gave a very different impression. He spoke of a constant pressure to deliver revenues quickly and explain his slow revenue growth to investors who did not have any understanding of the agriculture industry.

Thirdly, Igino Cafiero, CEO of Bear Flag Robotics, a business which was acquired by John Deere three years ago for $250m had already achieved what many startups feel they are aiming for. He was delighted with his financial success but spoke of his frustration that everything the company had pivoted away from its early vision and been forced to drop all of its existing farmer customers post-acquisition. He also described his frustration that, despite his continual pitching to John Deere that they should become the world's leading farm data and farm AI company, he was getting very little traction with this idea.

Finally, Alain Pincot at Bonipak who is operating an 11,000 acre vegetable operation in central California, Alain has invested a lot of time and money over many years in VC backed ag tech startups. His experience is that these startups either run out of investment and disappear, or they are acquired by a large ag company and diverted away from the relatively small markets that his company is focused on, towards the billion dollar markets of corn, soy and cotton. Bonipak engaged extensively, for example, with Blue River which was developing micro-spraying technology for cauliflower. When Blue River was acquired by John Deere for $305m in 2017, they immediately pulled out of their engagement with Bonipak because *"John Deere has no interest in developing technology for cauliflower - the market is too small."*

4.3 Case Study Three – China

In the final phase of my travels, I visited China. Starting in the south, in the tech hub of Shanghai, travelling through the flat and productive plains of Shandong further north and then onto the Steppe and wide open expanses of Inner Mongolia, north of Beijing. China was a huge cultural shock and an incredible experience.

In terms of their adoption of technology in general, the infrastructure and organisation of the cities is incredibly impressive, probably the best that I have seen anywhere in the world. There is a sense amongst the Chinese people that if it is technically and physically possible, then China will work out a way to do it.

The Chinese people that I met along the way spoke constantly about how much better their lives had become over the previous 20 years, and they have a feeling that their country is accelerating towards positive change.

All of this change is not happening without cost, however. As cities expand, so the amount of available farmland is disappearing.

Most of the farms I saw in Shandong, which is one of the most productive parts of the country, were very small. The Chinese use a 'mu' as their area of measurement - a mu being the equivalent of about 1/15th of a hectare. Many of the family run farms are only operating 10-20 mu, or less than 2 hectares. Much of the land is farmed very manually, with crops in small strips. Any chemicals are applied by hand with a knapsack sprayer, and even irrigation is carried out manually, with a knapsack or a garden hose.

Many of the Chinese people I spoke to had parents or relatives still engaged in running small areas of land in this way. However, they also spoke of their fear that many farms in poorer provinces, such as Shaanxi, were being abandoned and were at risk of turning into desert lands. The younger generation is not going to provide the labour force in the same way that their parents have. As this older generation dies out, many of the farms will cease to be actively managed.

Some of the land areas, in Shandong and elsewhere, are owned and operated by the government. I went to see one such government-run operation which was farming about 650 hectares. However, whilst they had mechanised to a far greater extent, the physical structure of the farms was the same. Their combine harvesters were the equivalent of trials combines in Europe, as were their tractors and sprayers. Although there has been a steady focus on increasing productivity and efficiency, Chinese agriculture has not increased the scale of everything in the same way as the other countries that I visited.

In other parts of the country, such as Inner Mongolia, which I also visited, and Heilongjiang, the farms are much bigger. The Eurasian Steppe is very visually similar to the Prairies of Western Canada, and these farms seem to have more in common with the farms in that part of the world than they do with the farms in their own country further south.

Whilst discussing the affordability of new technologies on small farms remains a big question, it did feel as though there was an urgent structural need for new technologies which would automate these farms and maintain their function as productive assets.

As with other countries that I visited, China also has a very different process for investing in innovation than the UK. There is a significant cultural difference in the role that they expect the government to play in developing technology and there are positives and negatives to both approaches. However, from the companies I visited it seemed clear that there were certain advantages for investing in ag tech.

Local and provincial governments are given the autonomy and the budgets to back local companies that they think have the potential to create significant breakthroughs and jobs for the local economy.

One such company I visited, Nxing Technologies, had raised the equivalent of over £100m from a combination of regional agriculture companies and the local government, and had grown their IOT and e-commerce business for the pig industry to over 700 employees and £1bn in annual revenues since starting up in 2015. There had been no VC investment within that figure.

It should certainly be noted, however, that there will be challenges in maintaining a constant stream of innovative new technologies coming into the sector. Many of the startups I spoke to had only been made possible as spinouts of larger entities. I received unclear answers as to how a young entrepreneur with a new idea would be able to bring their innovation to market. Connections with the government at a high level appeared to be a prerequisite, which seems unlikely for all but a very small elite within Chinese society. There also appeared to be a very different attitude towards the failure of business ventures in Chinese society where owning a business which failed was deemed to be almost catastrophic for your future prospects. This is a highly competitive society from early schooling onwards where the risks of making a misstep at any stage are so great that most young people seem to opt for safer jobs in the government or with very established companies, rather than starting entrepreneurial ventures. This is in stark contrast to Brazilian or US society where embracing risk, and enduring failure where necessary, is seen as a necessary part of the entrepreneurial journey and where the successful entrepreneur is lauded above all others.

CHAPTER 5: DISCUSSION

There were four main conclusions from my study tour.

1. Startups and new entrants will be an essential part of the next agricultural revolution.
2. The existing funding mechanisms for startups are not fit for purpose.
3. Unless farmers lead and own the outcomes of this change, it will not serve the needs of farmers.
4. The UK is failing to create an AgTech ecosystem which enables lasting companies of substance to be developed and scaled in this area.

My primary conclusion is that startups are an underappreciated but essential part of technology transformation in arable farming. At present, most of the technology deployed into the industry is developed by a handful of very big incumbents. Sixty per cent of the agriculture equipment market is controlled by four companies (John Deere, CNH, Kubota, AGCO) Roughly the same share of the ag chemicals market is again controlled by four companies (Syngenta, Bayer, BASF, Corteva). The founding dates for these companies ranges from 1802 to 1913, but none have been founded within the last 100 years. By contrast, none of the biggest companies in the world by market cap are more than 50 years old. The conclusion is that other industries are regularly disrupted and transformed by new entrants - agriculture is not and that is a problem. This is where startups can play a role.

My secondary conclusion is that there needs to be new funding mechanisms to support innovation in farming which comes from people who have a deep understanding of the industry and who have the patience to develop these technologies over multiple seasons alongside farmers, with a focus on using technology to address the fundamental challenges within our food production system.

Finally, the importance of farmers having an ownership of Per Plant Farming or any future technology in this sector was clear. Large incumbents have a very important role to play in the future of agriculture. However, if new technology is exclusively delivered by these businesses, change will be slow moving and incremental, and it will not serve the needs of farmers.

However, it was clear from every country that I visited that Per Plant Farming is not imminent. Innovations such as those described in this report are technically achievable in the short term, and probably essential in the long term, but the market conditions are not yet right for this to be widely adopted. My recommendations overleaf are intended to help accelerate this process.

CHAPTER 6: RECOMMENDATIONS

We need many more farmer entrepreneurs. We need more people who are willing to take a step back from the day to day operation of their farming business to push the frontiers of this industry forward. However, in the UK in particular, the paucity of funding in the ecosystem make this nearly impossible. New technologies are inevitable but, if they are not developed by farmers, there is a risk that they serve everyone in the industry except for farmers. We also need mechanisms by which non-farming engineering talent can be encouraged into the industry to solve some of the fundamental technical challenges in front of us, but who are also given regular guidance by farmers so their endeavours remain grounded in the reality of this industry.

Again, funding is the key ingredient here and its absence means that very little of this is happening.

My primary recommendation is that an Ag Tech Venture Studio be established in the UK to serve the needs of farms in the UK and Northern Europe. The Studio will take a large equity stake in new companies at a relatively early stage in their development. The Studio will engage a wide group of farmers who will guide, focus and provide feedback to the startups, in some instances taking formal non-executive or even executive roles. For the startups, they will be protected from the requirement to spend the majority of their time raising funds from VCs and will instead be entirely focused on delivering solutions which solve farmer problems. The objective of the studio will be to build strong, stable and independent businesses which operate at scale within the industry and provide a long term return to their investors.

In the next Chapter, I explain how I have developed a personal 25-year plan to fund and grow an Ag Tech Venture Studio.

CHAPTER 7: AFTER MY STUDY TOUR

I set off on this journey at the lowest point in my professional life, within days of having put Small Robot Company into liquidation, a business into which I poured seven years of my life and a good deal money. I had lost hundreds of thousands of pounds for my family business, and 100% of all the money invested by around 350 farmers and more than 3,000 non-farming investors.

Through the course of my travels, I searched continuously for a means by which I could re-engage with this challenge, but although I have been offered a number of opportunities to build and advise startups in this space, there is insufficient funding available in the UK ecosystem as it stands to make this realistic, and the risks of moving to another country to pursue this, which was closely considered, were ultimately considered too great.

Upon returning from my travels, I formed a 25 year plan to self-fund an Ag Tech Studio based in the UK. I still believe that there is more than enough engineering talent and more than enough capital in the UK to solve the biggest problems facing farming, but the two are not meeting each other in the right way. Whilst the UK has the potential to be a leader in this space, it will not be unless something significant changes about its current approach. The Ag Tech Studio will be developed to solve this problem.

My plan is to build a Group of non-farming companies through acquisition, initially partly funded using debt raised against farmland. Over time, this Group will generate sufficient cash that a percentage can be used to run the Ag Tech Venture Studio. It is also possible that additional investors be brought in to support this project, although this is not currently part of my thinking.

To facilitate this plan I've had to think very carefully about where I invest my time. I cannot see any logical financial reasons to invest more than a bare minimum amount of my time in day to day farming operations. I have therefore employed a new manager in the business and reduced my time commitment on farm from c. three days per week at the start of my travels to one day per month now.

I remain committed to contributing to a better farming industry, but the major challenge it faces in the area of developing new technologies is a lack of funding, and more time spent on farm by me is not going to address this challenge. As I have seen, there are certain parts of the world where fantastic returns from farming are achievable. The UK is not one of them.

In the short term, therefore, my Nuffield journey has pushed me away from farming. In the long term, I still hold the hope that I can make a significant contribution to its development.

The main quality required is patience. Technology costs will come down, the necessity for systemic transformation will become more obvious, and one day the timing for this innovation will be right.

CHAPTER 8: ACKNOWLEDGEMENT AND THANKS

Thank you to Nuffield and to my sponsors, the Elizabeth Creek Charitable Trust, for giving me the opportunity.

This travel experience came at an important point in my life. It has not pushed me in the direction that I was expecting, but it has given me a clear direction and focus which I was lacking when I set out on my travels.

Thanks as well to the many Nuffielders who helped to provide connections, advised me on my travels and made the experience so enjoyable.

ISBN: 978-1-916850-50-7
Published by The Nuffield Farming Scholarships Trust
Bullbrook, West Charlton, Charlton Mackrell, Somerset, TA11 7AL
Email: office@nuffieldscholar.org
www.nuffieldscholar.org