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Doing More with Less - Learning from the Small to Teach the Big

Written by:

Jamie Stokes NSch

July 2025

A NUFFIELD FARMING SCHOLARSHIPS REPORT

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Date of report: July 2025

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

Title	Doing More with Less - Learning from the small to teach the big
Scholar	Jamie Stokes
Sponsor	The Worshipful Company of Farmers with Savills
Objectives of Study Tour	To look at what can be learnt from small-scale business and producers, including, but not limited to, urban agriculture, from the perspective of a UK high-efficiency large-scale arable farmer.
Countries Visited	Brazil, Canada, England, Ireland, Japan, Netherlands, Singapore, Scotland, Thailand, USA
Messages	<ul style="list-style-type: none">• "Doing more with less" isn't just technical thinking, it is also philosophical and cultural.• The answer to the problem of small-space farming is more mindset than methods.• There are better platforms for communication about agriculture.• Agriculture must look outward.• Ask better questions.

EXECUTIVE SUMMARY

This report investigates how small-scale agriculture businesses and food producers operate successfully within limited spaces, focusing on how their mindset and outlook could inspire conventional large-scale UK agriculture. The study began with the author's own challenge, where pursuing efficiency on a 'high-input, high-output' arable farm had created small areas of potentially productive land that became economically non-viable to farm. With increasing UK food insecurity the question was how can large agricultural businesses make better use of these 'unprofitable' corners? The project's original objective was to find practical solutions but evolved to include new ways of thinking through dialogue with over 100 businesses.

The findings reveal that while most small-scale farms often ape traditional market gardening, the real value learning came from the different mindsets. These include embracing terroir, producing for flavour, and removing barriers between producers and the public. Obsession proved a consistent theme among successful small producers, and many had rejected homogenisation in favour of seasonality, resulting in unique in-demand products. Engagement was also central: urban farms often integrated education, restaurants turned dining into food production storytelling, and even simple cafés demonstrated how clarity and accessibility can transform consumer relationships. However, financial viability remains a consistent challenge, particularly for vertical farms, with many closing due to issues such as land cost, limited capital and market access.

The study urges UK agriculture to broaden its horizons and look outward. Instead of relying on internal industry circles, farmers should seek inspiration from unlikely sources, be they coffee shops or urban rooftops. Practical takeaways include the adoption of flavour-focused crop selection, consumer engagement beyond the retail space and potentially rethinking unprofitable field corners as a testing ground for innovation. The report also encourages farmers to remove unnecessary complexity from their communications, echoing lessons from Detroit Coffee Club's simplified coffee offerings.

This study does not seek to deliver a universal technical solution but turns the original problem of unviable areas of land from a business limitation to a potential opportunity. The Nuffield Scholarship journey has left the author with more questions than he started with, and that's precisely the point. The agricultural industries, as he argues, should cultivate curiosity, diversity of thought, and adaptability. The future of food production might not lie in doing more of the same at scale, but in doing things differently in unexpected places. This creates a compelling argument for disrupting the traditional farm mentality and embracing innovative thinking from people who see the problem differently.

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CHAPTER 1: INTRODUCTION

Whilst it would be easy to cover my background and come across as a typical farmer, for the interpretation of my report it is probably best to know that typical doesn't really describe me at all. I see the world differently, partly because I am neurodiverse and partly because I get bored really easily. My travels and visits have seen me bounce through 100 different businesses, and no two were the same. I covered the entire spectrum of our industry and many others besides. The only businesses I didn't visit were those like mine.

I am a third-generation arable farmer and to be honest I can't remember a time when I wanted to be anything other than a farmer, apart from a brief period in my 20s when I thought I was going to be a racing driver. I completed a BSc Agriculture at Reading, breaking the course record in the process, then got bored with education and returned to the family farm. This lasted a predictably short time before my family and I decided it would be best to find something else to do.

Luckily, David Gardner was pushing the Royal Agricultural Society of England to become a hub of technical excellence and I took a role that allowed me to visit all the major research facilities in the UK, dissect their work, and come back with interesting ideas for farmers. It was here that I learnt that just because everyone else in agriculture is doing it one way, doesn't mean that there isn't a better way to do it. A lesson I have taken to heart and run with.

Having been running the family farm for around 10 years, I've comprehensively ripped up the rule book on what working on a farm should be like. Creating a relaxed and low stress environment with enough capacity and options to keep it highly profitable even through the recent unpredictable conditions.

It's this same approach that I took to my Nuffield travels. Rather than constrain myself to agriculture, I've gone wherever I've found an interesting person or idea. Quite possibly the most thought-provoking visit was a coffee stall in Detroit... More on that later.



Figure 1: The author with Artemis, his race car. Source: Author's own



CHAPTER 2: BACKGROUND TO MY STUDY SUBJECT

I have spent my entire life thinking that the only way to grow an arable farm in the UK was to increase its size and get more efficient. It's what my grandfather did, my father did and what I have done. From 400ha with 10 staff when my grandfather retired to 1,000ha now, run by myself and two other family members. I spent my time idolising companies like Amazon and Toyota, with their efficiencies at a micro level producing large improvements at scale. Their thinking helped me build a very successful farming business. It is a model that has been replicated over large swathes of the East of England to the point where it is generally considered the only way forward for a successful 'high input, high output' arable farm.



Figure 2: Combine harvester cutting wheat on the author's farm. Source: Harry Butson 2019

To begin with, new ideas and techniques were easy to find and develop, but as the farm became a leader in this area it became increasingly difficult. I was looking at my industry and seeing nothing new to get excited about. One thing that was bugging me was that in my quest for efficiency I had squared off many of my awkward field corners. It made sense from a cost of production point of view, but I was struggling with the idea of taking good land out of production. When you add in the fact that 7.2 million adults in the UK are food insecure (data from June 2024), and of those 2.5 million adults reported not eating for a whole day because they couldn't afford or get access to food ([ref. 2.1](#)), I became increasingly convinced that there had to be a better solution.



‘Doing more and more with less and less, until eventually you can do everything with nothing’ - Definition of Ephemeralization coined by R. Buckminster Fuller in 1938

This quote from R. Buckminster Fuller has lived rent free in my head for longer than I can remember. Arguably one of the greatest visionaries of the 20th century, his free thinking approach has been inspirational to me as I have gone about reforming the way we farm at home. Facing my unproductive areas, it occurred to me that ephemeralization is the definition of the problem facing agriculture in the future with increasing pressure on land use and an ever growing global population. If I was going to learn how to do more with less then I needed to go and see the people already making small area farms work.

This gap in my knowledge forms the basis of my Nuffield Study topic. I originally planned to look at food producers that operated in spaces smaller than my uncropped field corners, the largest of which is 1.5ha. But I quickly realised that interesting ideas from interesting people were more relevant to my way of thinking than sticking to a tightly defined brief, so I broadened my scope to any business that could be defined as ‘small’.



Figure 3: Interior of the only surviving Dymaxion House designed by R. Buckminster Fuller in 1930. Source: Author's own

“If you can’t meet your heroes, then seeing their work up close is the next best thing” – Jamie Stokes



CHAPTER 3: MY STUDY TOUR

Countries Visited	Reasons Why
England Nov '23 - April '25	Inspiration catches you unawares, I have found “Nuffield Visits” around the country in areas and places I was never expecting or planning to study.
Scotland June 2024	Nuffield visits can spring up out of nowhere; I was in Edinburgh for a wedding and stumbled into a visit that changed my thinking.
Northern Ireland November 2024	Belfast was the location of the 2024 Nuffield Conference and I took the opportunity to visit city farms whilst I was there.
Brazil March 2024	The location of my CSC, but I stayed on to explore the Pantanal and Sao Paulo because a city of 22,990,000 people (ref. 3.1) should produce some interesting food production solutions.
USA May 2024	You can't look at small-scale food production without visiting Detroit. I had to fly in via New York City, so I used that opportunity to visit the Stone Barn Centre as well as many other businesses.
Canada May 2024	Detroit brought me to Canada's door step, so it would have been rude not to see what Ontario could teach me.
Singapore October 2024	A city state whose 30 by 30 plan has produced some interesting small-scale food production facilities.
Thailand October 2024	Having to cancel a planned trip to Vietnam at the last minute, an organic farm in Phuket offered me a place to stay and an opportunity to learn.
Japan March 2025	When looking for new ideas, somewhere different is a good place to start. There are very few places as culturally different to what I understand as Japan.
Netherlands April 2025	A country on my doorstep that I knew very little about. When an opportunity to visit presented itself, I jumped at the chance and discovered some interesting places.



CHAPTER 4: “WE CANNOT SOLVE OUR PROBLEMS WITH THE SAME THINKING WE USED WHEN WE CREATED THEM” - ALBERT EINSTEIN

When I set out on my Nuffield journey, I considered my topic as a technical problem. I had small parcels of land that I could not farm profitably, so I planned to visit people who were demonstrating that it was possible, hopefully finding the answers to be able to replicate it at home. Unfortunately, the technical answer is not actually that interesting. Once you remove the variations of location and produce, what you end up with is market gardening on largely organic principles. The only sector that continued to provide technical inspiration was vertical farms. However, as I shall discuss in Chapter 6, that area has profitability issues.

What was interesting was the people behind the businesses. Many of these small enterprises have been successful due to a different approach to the problems facing them, creating unique and interesting solutions. It is this thinking that became the focus of my Nuffield; talking to people about food and food production, and learning from their enthusiasm.

4.1: “Here’s to alcohol, the cause of, and solution to, all life’s problems” - Homer Simpson



Figure 4: Butterfly sweet pea syrup cocktail made with Chalong Bay rum. Source: Author’s own

If you want to make friends in a foreign country, the bar is always a good place to start. When you travel the world with foodies, the bartenders you find tend to be more knowledgeable and the recommendations of what’s good become more specialised. That’s how I ended up drinking rum at The Distillery, home of Chalong Bay in Phuket, and stumbled upon an answer to the question ‘Why are small batch producers making products so much tastier than the big corporations?’ It’s obsession.

The basis for most industrial rum production is molasses, a byproduct of the sugar industry.



It's a commercially available, relatively standardised product and most of the rums you know will start this way. Nobody in the sugar industry is thinking about the flavour profile of its sugar, it's a yield/ cost/ repeatable uniform end-product business. As the molasses is only a byproduct even less thought is put into it. The market differentiation and flavour of the rums you see on a supermarket shelf will depend entirely on the distilling method, flavour additives and marketing.

When the Father of Chalong Bay, Thibault Spithakis, came to produce his rum, he decided that to get a rum with great flavour you need ingredients with great flavour. So, he chose to use the much longer sugarcane juice distilling method with one of Thailand's biggest agricultural products. There are over 200 different sugarcane varieties grown across Thailand, and very quickly he found that the flavour profile of the juice depended very much on area, variety and production methods. After years of trying he settled on indigenous single variety sugarcane, grown without chemical fertilisers with small-scale local farmers who still harvest their crop by hand and don't burn the residue. Believe it or not you could still taste the burning process in the sugarcane juice years later.

This is terroir, the characteristic taste and flavour imparted by the environment in which it is produced. Wine producers and drinkers have known about this for years. The best example of this I found on my travels comes from a Canadian brewery, Goodlot Farm Brewing, who said "This beer can only taste like this, because it was made here." Yet it is not a concept that I have considered transferable.

It seems so simple once it's written down: change how something is grown and you change how it tastes. Does wheat flour have a terroir?

The first time I heard terroir applied to anything other than wine was at the Tullamore Lavender Company, who make a lavender craft beer among other things. I walked onto Stephanie Craig's farm thinking lavender was lavender but she very quickly corrected me! Large-scale producers want varieties consistent in



Figure 5: The author and Stephanie Craig on her lavender farm. Source: Lauren Benoit



yield and flavour, but if you take the time to nurture and grow other varieties the flavours you can produce are mind-blowing. Stephanie has an obsession with lavender, and Thibault has an obsession with sugar cane. They both have an obsession with flavour.

4.2: “People don’t want just vanilla. They want 31 flavours.” - Katy Perry

Flavour is another concept that I had not considered transferable to arable farming. We choose a variety to grow based on what the millers want, and they are usually after varieties that are consistent in traits such as Hagberg Falling Number and protein content. I had never met anyone growing grains for their flavour until I got sent to see Randy Hamilton of Hamilton Organic Farms.

I went there after an enthusiastic Detroit baker leaned out of her kitchen to shout across the shop, “Oh my god, his cornmeal is amazing. Like the most flavour you can find.” I wasn’t sure if this was American hyperbole at the time, but all the other customers in the shop quickly agreed on how much more flavour was in the products they were there to buy, so I drove the two hours north.

The corn Randy was growing would be called a heritage variety in the UK, but I feel that this is doing him and his crop a disservice. Randy has been hand-selecting the best corn cobs from his naturally pollinated field for the last 20 or so years to create a variety that is as unique as he is. This is then treated with a blend of molasses and other organic feeds during its growing season and milled in Randy's own on-farm mill.

Labour intensive and low yielding, single-origin high-flavour grains are still profitable because it is in such high demand. This approach has been so in demand that Randy has been asked to set up a new small batch mill within the



Figure 6: Randy Hamilton’s corn seed. Source: Author’s own



Eastern Market in Detroit so that other small producers can start to bring new flours to the market.

Should I be more interested in growing flavour?

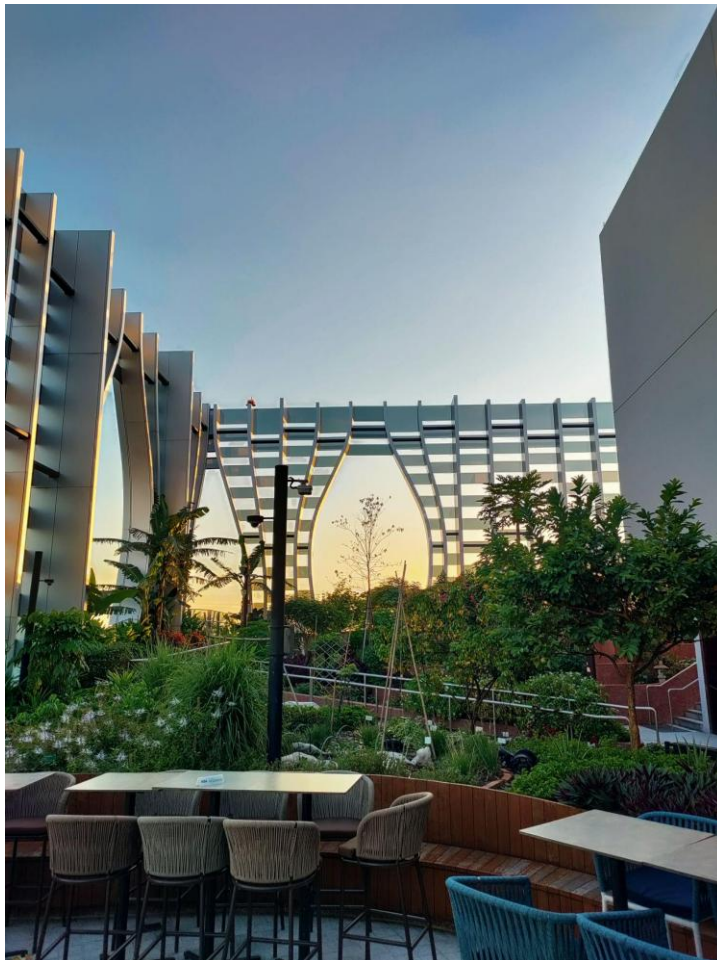


Figure 7: The Urban Food Forest in Singapore. Source: Author's own

Growing flavour is a concept that I started to see repeated in visits to some of the smaller high-end producers. The best example happened to be at the highest urban farm in the world, the Urban Food Forest 280 meters up on the 51st floor of the 1-Arden skyscraper in Singapore. The concept was to have a farm-to-table restaurant within the skyscraper, but the 10,000 sq ft growing area is not enough space to actually grow all the produce consumed in the three restaurants below. Instead, they chose to companion crop around 150 different herbs and spices with fruit trees and some vegetable plants. These plants are chosen in a collaborative effort between the chefs and the farm team so that the flavour of the food served in the

restaurants is grown in the skyscraper. The Food Forest is open to members of the public who eat in the restaurant, enabling engagement with where the flavours they experience come from.

4.3: I followed my heart, and it led me to the kitchen...

As farmers, our engagement time with our consumers is essentially limited to the moment they are buying our food in the supermarket. Here the estimated decision time per item is nine to 17 seconds ([ref 4.1](#)). That is very little time to tell our story. However, for consumers in the UK, eating out accounts for 30% of food expenditure in an average week ([ref 4.1](#)) and the average time a diner expects to be in a restaurant is an hour ([ref 4.2](#)). This means significantly more time to



engage and generate interest in where the food they are eating comes from. As a producer, this interaction has always fascinated me and I went looking for small businesses excelling in this space as I travelled. This area of study could easily be a Nuffield report in itself, but the ideas that I have taken the most from are seasonality, local produce and culture and expanding customers' knowledge.

Mono no aware (物の哀れ) meaning 'the beauty of transience', is fully ingrained into Japanese culture, seasonality as a concept for everyday life. When compared to the UK consumer who expects to be able to buy strawberries in December, it is quite the contrast. At breakfast in Hokkaido the label on the milk read "Please enjoy the taste of the milk, which changes with the seasons of summer green grass and winter hay." Which has left me wondering: Who has decided what milk should taste like in the UK? Why do we strive to homogenise our produce to such an extent?



Figure 8: The milk at breakfast in Hotel Wasabi. Source: Author's own

Seasonality was also shown to a high level by a Japanese restaurant called 'We are the Farm'. This is a restaurant where you do not choose what you would like to eat; you simply pick between five to seven courses and specify whether or not you are a vegetarian. Then the chefs prepare small plates highlighting individual vegetables that were harvested that day on one of their own organic farms. Even the drinks carry fresh farm produce, with the beer blended with carrot on the day



Figure 9: Spinach course at We are the Farm, Akasaka. Food consumed by the author. Source: Author's own

I visited. All the staff in the restaurant are also involved in the farm, meaning that they can come to the table with an example of a course's vegetable as it is harvested and share pictures and videos of it growing and being harvested. Watching both a young couple on a date and a table of businessmen holding a taro root whilst the waiter explained all about it, before a beautiful plate of taro was put in front of them makes me wish this kind of experience was more widely available. To expand on the concept of 'Mono no aware', what you eat is only served in that individual restaurant on that day. Each of

their four restaurants in Tokyo gives the chefs freedom to prepare and present the food as they want.

I was also lucky enough to experience a different take on the same concept at the Stone Barns Center for Food and Agriculture in Pocantico Hills, New York State. My guide, Andrew, told me about a time a few years ago when the kale grown on the farm was full of small holes caused by a pest called cabbage stem flea beetle (CSFB). The farm team was disappointed as they assumed the kale would not make the grade for the high-end restaurant on site, run by chef Dan Barber, and would be wasted. Instead, Chef Dan wanted to use the kale, as an opportunity for his front of house staff to explain the issues surrounding organic farming, demonstrating that imperfect produce could still taste

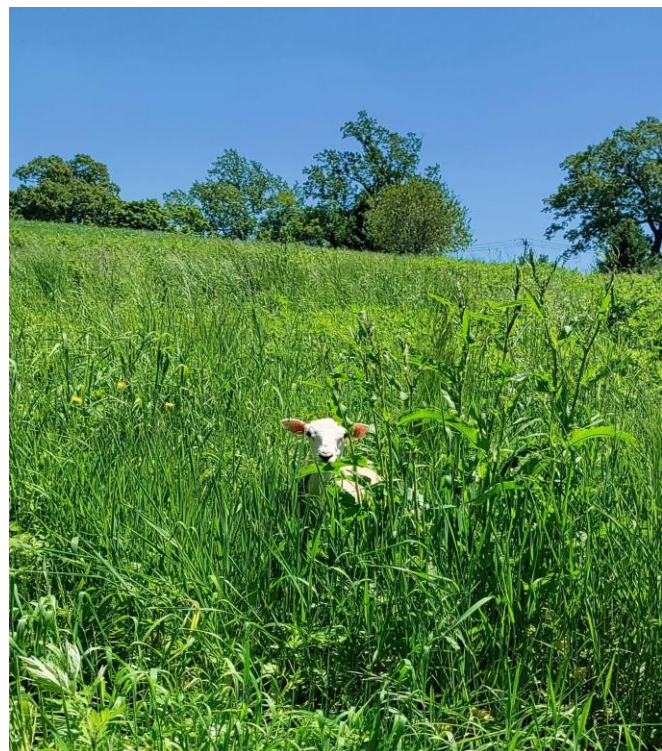


Figure 10: A lamb grazing at the Stone Barn Centre. Source: Author's own



amazing. The engagement and response from his guests was such that when in the following year there was no damage from CSFB, Chef Dan was actually disappointed.

4.4: Tell me about that coffee shop

Inspirational people will have an effect on you, regardless of industry and my conversation with the owner of Detroit Coffee Club has lived rent-free in my head since I met him.

“Coffee names don’t actually make much sense, and people don’t actually know what they want to order. So I’ve simplified it.”

I’m sure many of us have looked at the board in our favourite coffee shop and been afraid to ask the difference between a cappuccino and a latte, or an americano vs a long black. And how many of us would actually be able to tell what we were served once it has been poured into a takeaway cup? The solution he came up with is to offer a single priced drink that has three choices: whole or oat, hot or iced, and the level of milk. Being a coffee obsessive himself, he can vary each drink to each customer’s request, so if someone says “Well I normally have an iced latte,” he can make that as easily.

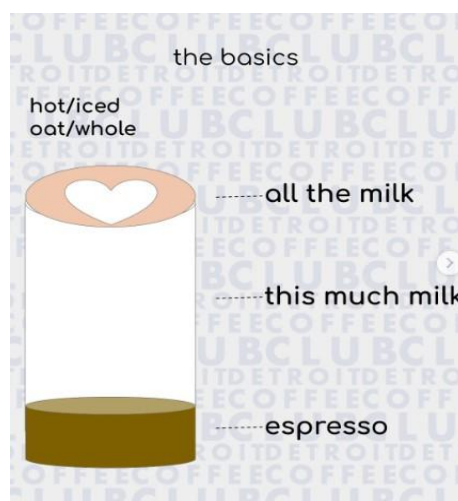


Figure 11: The beginning of the Detroit Coffee Clubs simplified menu. Source: Detroit Coffee Club

Just because you don’t know the lingo, it shouldn’t be a barrier to getting great coffee, or exactly what you want. The owner admitted that though his knowledge of what makes a good cup is off the scale, and he would have been able to fill his menu with things customers had never heard, it would ultimately likely just put people off. He started the business because he got fed up with not being able to find good coffee in Detroit, just too many weird and wonderful options that, at the end of the day, weren’t really coffees, just sugary hot milk. So he bought the kit to make them himself at home. Once his friends discovered his skill, he started to get requests to do some events for them and it has grown from there.

Does agriculture needlessly create barriers to understanding? Could we take a leaf out of The Detroit Coffee Club book and make it easier for the public, our customers, to understand?



There were two other coffee visits that also really made me think. The first was to Turret Coffee in Tokyo, Japan where Kiyoshi Kawasaki-san became the first Japanese coffee shop to get into the Michelin guide by doing something so deceptively simple that I still can't believe no one else is doing it! We are very used to coffee shops proudly displaying the beans they use, and talking about the flavour of coffee that they produce. But Kawasaki-san has looked into how the flavour of the coffee is affected by the milk. When you consider that the most ordered coffee is a latte ([ref 4.3](#)) which is two thirds milk, that interaction between the two is an important one. Kawasaki-san will use a different roast or a different blend depending on what you order to match the milk type and quantity, ensuring that he creates the very best cup of coffee for his customers. Obsessing over every part of the process, rather than just the star ingredient, creates a significantly improved product.

What area are we not obsessing over in farming? Is it something as simple as the interaction between coffee and milk?

Lastly, I need to talk about Isabella, an entomologist working at Cafezal Urbano, part of the Biological Institute for the University of São Paulo, Brazil. I had gone



Figure 12: The author and Isabella looking at coffee plants. Source: Julia Christina Campos



there to visit a coffee plantation in the middle of the city and learn about biological control methods, but what I took away is how we should all be more like Isabella.

Isabella had moved to São Paulo from Panama to study biology as natural sciences are not considered worth studying at home. Before she arrived, the idea of insects gave her the creeps, but once in the lab she found that it was studying insects that gave her the greatest buzz. Whilst we walked around the coffee plantation she showed me fire ants' nests, moth larvae, stink bugs and bees, all with a bounce and a smile that only comes when you are truly where you are meant to be. The quest for knowledge and self-betterment in this area was easy for her because she loved every second of it.

How many people in our industry are truly happy with what they do? And how many trudge about the farmyard resenting the weather, government policy or the rise of veganism?

There was one thing that Isabella taught me that really caused me to consider what I buy, when she explained to me why she will only drink coffee made with handpicked coffee beans. I will leave you in blissful ignorance here, but if you want to know, look up 'Isabella's lesson' in the glossary.

4.5: Goats, goats and more goats

When I set out on my study tour, I was working on the assumption that if the human population is going to keep growing and become more urbanised, we are going to need to learn how to produce food within an urban landscape. For fruit and vegetable production this is easy with an almost idyllic introduction of green space. You get increased air quality, wildlife habitats as well as the non-tangible benefits to human life, like improved mental health. What I had not considered was how livestock fit into this future.

I visited one urban intensive livestock farm, Hay Dairies Pte Ltd in Singapore. This is a 0.7ha factory unit on an industrial estate that contains; a shop and visitors centre with car park, a pasteurisation and bottling plant, warehousing and distribution facilities, an ice cream manufacturing facility, a milking parlour and 900 permanently housed dairy goats.

I will admit that this visit had a lasting effect on me. I consider myself pragmatic about the necessities of food production, but this left me feeling uneasy. I checked with UK dairy producers, and they said from the video footage I sent back that the goats seemed happy and healthy, but it is possibly not the future I want.



Figure 13: The goat housing at Hay Dairies Pte Ltd. Source: Author's own



CHAPTER 5: “IT IS NECESSITY AND NOT PLEASURE THAT COMPELS US” – DANTE ALIGHIERI

Everything I have written about up to now has been developed as a result of opportunities and choice. Fantastic people with similarly fantastic businesses, but these were born of choice. Not everyone I have visited has been that privileged. For some, growing food on a small urban plot is a necessity.

Mulheres do GAU (Mothers of GAU) is a group that runs a farm and cafe which operates as the heart of a community in São Miguel Paulista on the outskirts of São Paulo, Brazil. The group consists of immigrant women from the northeast of Brazil, who have typically moved to the city of São Paulo in search of work and a better life for their families. The project started because whilst their husbands found work, providing food for the families was hard. Having come from farming backgrounds, they possessed the basic knowledge to grow some vegetables but had no access to land. They managed to convince the local government to let them have a small area of wasteland under a flyover, although the ‘expert’ told them that the land would never be able to grow anything. Six months later, having cleared the site of all the rubbish, they harvested their first crop.



Figure 14: The garden of Mulheres do GAU. Source: Author's own

Now they grow a wide variety of produce stacked up in companion cropping so far beyond what conventional agriculture thinks is possible that the University of São Paulo uses this as the example to teach its agriculture students. This includes the three sisters' method, but then adds in plants to attract pollinators, fruit trees and medicinal plants as well as stacking plants that harvest at different times of year. From land that won't grow anything, it is one of the most productive sites I visited.



Originally planned to provide enough for the members, the site now supports a restaurant staffed by more women from the local area, cooking their cuisine with the food grown here, as well as being able to sell the excess to the local community at a more affordable price than the supermarkets.

Whilst this story coming out of the favelas of Brazil is one thing, to find a similar problem and solution in the USA might seem more of a surprise.

Detroit is a city full of community gardens and growing spaces. A result of some unique economic conditions causing growing space within the city to be easy to come by. However, those same economic conditions have left some communities within the city with limited access to fresh fruit and vegetables. High crime rates have pushed the big supermarket chains out of town and out of reach for the poorest, leaving only small convenience stores that tend to prioritise alcohol over nutrition. That means that if you want vegetables, you are going to have to grow them, a fact made considerably harder by areas of Detroit's soil being poisoned by cadmium from years of industry.

'Food desert' is not a term I had heard before the start of my Nuffield journey. But one that I fully comprehended after spending a week talking to people in Detroit.

Should access to healthy food be limited to wealthy people? Is it possible for our industry to do something about it?



CHAPTER 6: “+++ OUT OF CHEESE ERROR, REDO FROM START +++” – TERRY PRATCHETT

As I mentioned at the beginning of my report, profitability is the biggest issue for small area farming. Particularly in the high-tech, vertical farming world. Of the nine places I planned to visit in my Nuffield application, six of them closed before my award was granted. Of my 100 visits, nearly 10% have since shut or undergone significant restructuring, with four closing their doors on the same day in September 2024. I felt like the Angel of Death for interesting small businesses.

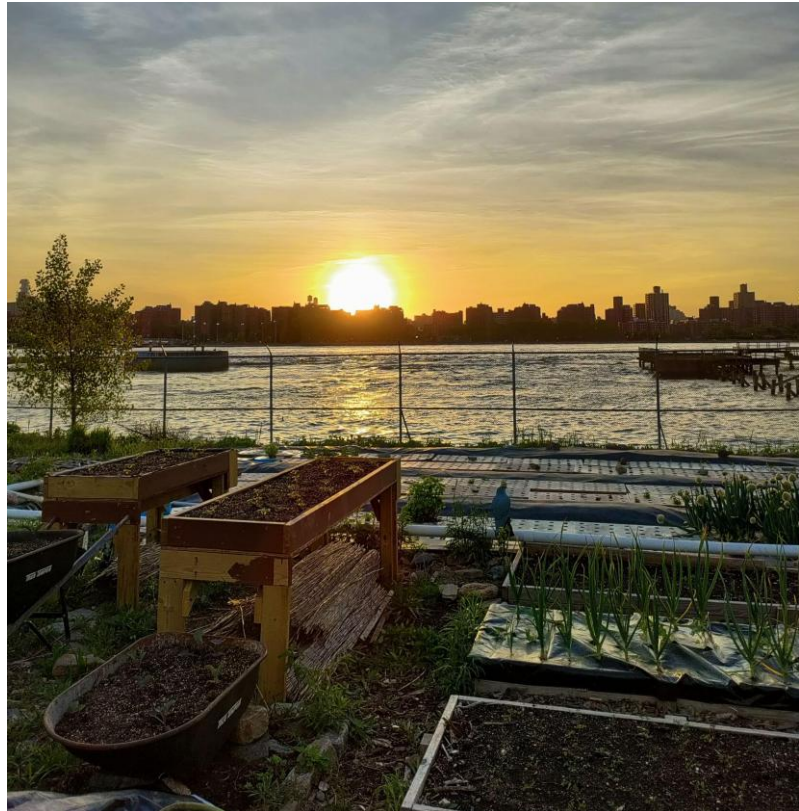


Figure 15: An aquaponics farm that no longer exists. Source: Author's own

Whilst profitability was not a part of my study plan, there were obvious areas where I could see costs building.

Labour use: Growing food in small plots or polytunnels is a labour intensive process. My farm has three full-time, and three seasonal staff over 1,000ha; many of the commercial producers I visited had at least that many on less than a hectare. If you add the complications like companion cropping, overlapping harvest periods and multi-disciplinary enterprises, you start to move away from unskilled labour to skilled or highly motivated staff. Technology potentially has the answers, but then you run into the next problem.

Raising capital: Always an issue for any business, but traditional farming typically has assets that can be leveraged to raise capital. If you take away the land that no longer becomes an option. Many of the vertical farms were working on developing intellectual property (IP) that they could then license and sell, but the more traditional growers were limited in that regard. Most techniques they were using were antiquated, and any innovation easily replicable.



Land cost: Although the potential returns per unit area are higher, most of the businesses I visited were urban-centric. And there you have much higher demands on land use, increasing cost. I did visit some unusual solutions on unused areas, but once they have shown that a site has value, other interested parties often want a cut.

Market access: Most of the businesses I visited were not involved with the traditional food retailers. They are producing a higher value product based on perceived benefits. This means that they have to find a way to reach their potential customers, sell their story, and convince them to make either a financial or physical effort to purchase the products. Getting people out of the routine of supermarket food shopping is hard; convincing enough people to pay more for your produce in tough economic climates is harder.



CHAPTER 7: DISCUSSION

7.1: Why are there so many visits? The brochure didn't say there would be this many visits!

Before we can move on to discussions of my findings, we need to talk about what I have not said. During my study tour, I visited 100 different businesses, which combined, had 130 unique enterprises. There is only space enough here to discuss a small amount of what I have seen. It would be possible to write this report multiple times, each with completely different discussions and recommendations.

I have chosen to write about the visits that tell a single story, but my conclusions inevitably have influences of the visits not mentioned. I have added an appendix of the social media posts I made for each visit.

7.2: “That men do not learn very much from the lessons of history is the most important of all the lessons that history has to teach” – Aldous Huxley

I have treated small-scale urban farming like it is a new concept, and I think many of the producers I visited have felt the same. But perhaps it's just little bits of history repeating. Aquaponics was invented by the Aztecs ([ref 7.1](#)). Green roofs have been documented in the Hanging Gardens of Babylon ([ref 7.2](#)). Community gardens are an Anglo-Saxon concept ([ref 7.3](#)).

Some of my most interesting production ideas have come from visits to walled gardens at historic properties, where they use old-fashioned production techniques and ideas to educate the public. This shows that what we consider new and exciting opportunities were a necessity not that long ago. How many lessons could modern urban farmers learn from people who lived through 'Dig for Victory', which is only one generation removed from living memory.



Figure 16: Fruit production in a Victorian glasshouse using biological control methods.
Source: Author's own

7.3: “Judge a person by their questions rather than by their answers” – Voltaire

I started this journey looking at my small areas of fields as an unprofitable problem. They didn't fit my mindset or my business model. From one question, “What can I learn from small businesses and producers?” I now have more questions than I have space for here. Some I can answer, some I can't. Yet.

- Why are small batch products tastier than the mainstream equivalents?
- Does our produce have a terroir?
- Should we be more interested in growing flavour?



- Why do we homogenise our produce to such an extent?
- Does agriculture needlessly create barriers to understanding?
- What are we not obsessing over in farming?
- How many people in our industry are truly happy with what they do?
- Should access to healthy food be limited to wealthy people?
- How much could modern urban farmers learn from concepts like 'Dig for Victory'?

These are the types of questions that businesses like mine have lost the ability to think about. You grow into a certain way of thinking, even more so when you are successful. You look for answers to problems in places that feel comfortable and are easy to understand. Everyone I have visited has shown a different way of thinking about food production, creating new interpretations of what can be done. Are my small unprofitable areas of fields actually a problem? Or are they an opportunity I just don't understand yet?

I am going to leave these as questions.

My answers would be related to my way of thinking, life experiences and business background. Your conclusions might be different. We are each influenced by our own experiences.

I'm going to leave most as unanswered questions. Because the answer to "Should access to healthy food be limited to wealthy people?" is, and always will be, **NO**.



CHAPTER 8: RECOMMENDATIONS

As a conceptual piece rather than an in-depth dive into a technical problem, what the industry can or wants to take from the above report is open to interpretation by each individual reader. I've highlighted some thought-provoking questions and hopefully provided some insight into a way of thinking that might find the next big thing, but I don't think I have found the golden bullet I set out for.

If I could get one change for our industry, it would be to spend less time looking inward, and more time looking outward. We are often guilty of letting our world end at the farm gate. We turn to other farmers for advice and ideas, and often they form the core of our social circle. I feel that the potential for a bright idea is made so much higher by visiting one brilliant person in an area you know nothing about, rather than 100 very good UK dairy farms.

It's still nagging at me that Detroit Coffee Club simplicity seems so right. Of all the visits to impressive places and people, it's this unplanned coffee and doughnut visit that keeps me thinking. Once that percolates its way into a farming system adjustment, I think I will find that step change I was looking for.

8.1: Jamie's bite-sized plan for new ideas

1. Go to your favourite coffee shop.
2. Order your favourite coffee.
3. Tell me why that place is better than the millions of other coffee shops in 10 words or less.
4. Apply the answer to #3 to your business.



Figure 17: A cappuccino from Turret Coffee.
Source: Author's own



CHAPTER 9: AFTER MY STUDY TOUR

Whilst it would be lovely to write 'I have applied this knowledge and am now producing food in the small areas', life has provided some complications.

I was in Singapore at the end of October 2024, getting ready to come home after a three-week study trip. I woke up one morning to a load of missed calls, text messages and emails:

"Jamie, can you do the maths on this?" "Jamie, can you comment on what this means?" "Jamie, can we organise a meeting ASAP?"

Whilst I was asleep, Rachel Reeves had announced that inheritance tax (IHT) was going to be increased from zero to 20% on agricultural land from April 2026.

For the last 20 years we had been working on a succession plan that was wiped out overnight. From being able to pass the business down two generations in one move and keep the farm going, to losing 30-40% of our land in tax with no time to adapt to the new rules. For an arable business based on scale and efficiency, losing my scale is going to stretch my profitability hard.

Maybe I will look back and think that there was no better time than now to look at businesses operating on a reduced scale, but currently, my entire capacity is based around contingency planning for what will happen if my grandfather makes his 97th birthday on the 10th of April next year.

Being a Nuffield Scholar has undoubtedly made me better prepared for the future, with a new outlook and skill set to work with. I look forward to being able to change my farm for the better and perhaps provide the inspiration for others to do the same.



CHAPTER 10: ACKNOWLEDGEMENT AND THANKS

Firstly I need to thank my sponsors, The Worshipful Company of Farmers with Savills. I hope that this report is worthy of the trust they put in me when funding my scholarship.

I need to thank the Nuffield selectors for choosing me, because it would have been very easy to choose someone who is less challenging to the status quo. I hope that more scholars are willing to be different in the future. Everyone at Nuffield works hard for the scholars, but Charlotte Merson is the unsung hero. The fact that you are reading this is probably her doing.

All the people who I met around the world have been amazing, friendly and so hospitable. Who would have thought you would have found lifelong friends around the world during an agricultural study tour? There really are too many to mention, but if I have darkened your doorway know that your time was appreciated more than I can vocalise.

I also need to thank everyone who stepped up at the farm to cover for me whilst I was gone over two different drilling periods (and some of harvest!). Daniel and Jason have had to make more decisions than I think they would have wanted to 24 months ago, but the fact the farm looks so well is more down to them than me. My father, Richard, also deserves more thanks than I could give for coming out of retirement and sitting on the forklift for many an hour. He will be pleased to get back to the golf course now.

Finally, I need to thank my wife, Rosanna. It's difficult to explain how challenging the Nuffield experience has been at times and how hard it pushed our relationship. For me to fly off to Brazil, and then only phone her to tell her how much I was struggling and wanted to come home took some recalibrating. But she has been there for me. From the complete breakdown in Birmingham airport, to my lack of concern over having a gun shoved in my face in Detroit. (Though we agreed that I probably shouldn't travel on my own again after that). Having her with me made my travels better. The fact I found as many amazing places as I did was down to her reminding me that I am capable of going and talking to people, even if my head was telling me I couldn't.

If you have got this far, you are more than likely a previous or potential future scholar. I hope I inspire previous scholars to look for inspiration in new and exciting places, and for those of you thinking of applying, there is never a good time to do a Nuffield, but the best time to apply is now.

My door is always open if any of you are passing by.



CHAPTER 11: GLOSSARY

Neurodiverse: Neurodiversity refers to the natural diversity in human brains. Neurodivergence is the term for when someone's brain processes, learns, and behaves differently from what is considered "typical". I have been diagnosed with Dyslexia, Dyspraxia, ADHD, 'Specific learning difficulties' and am in the process of getting a formal Autism diagnosis. In simple terms it means that certain things that a neurotypical person would find easy, I find really difficult, and there are skills that I have that neurotypical people would be envious of. I do not wish to be defined by any labels, and it's not an excuse, but in the context of this Nuffield report, it is important to understand that my pathway to conclusions is probably different to what you would expect. For more information I would recommend reading Liz Haines Nuffield report called 'Neurodiversity in Agriculture'.

Arable Farmer: An English way of saying crop farmer. For me it means we grow anything that can be fed through a combine harvester.

Ha: Abbreviation of Hectare, the standard measure of area used in the UK. One hectare is equivalent to two and a half Twickenham rugby pitches.

Food Insecure: Defined as the condition of not having access to sufficient food, or food of an adequate quality, to meet one's basic needs. Translation into plain English: going hungry.

CSC: Nuffield Contemporary Scholars Conference, the starting point for all new Nuffield Scholars.

30 by 30: Singapore's ambitious food security plan and mission to grow 30% of their food locally by 2030.

Market Gardening: A market garden is a small farm which grows and sells vegetables, salad or fruit directly to the public and restaurants. Allotments would be similar thinking, although produce grown on those are predominantly for personal consumption.

Foodie: Kind of like an influencer, but with knowledge and taste.

Standardised Product: A product that is consistently manufactured and delivered with little to no variation, regardless of where it's sold.

Hagberg Falling Number (HFN): A test used to assess the activity of the enzyme alpha-amylase, in wheat. A higher HFN value suggests lower alpha-amylase activity, which is desirable for bread making as it helps maintain dough structure.

Heritage Variety: AKA heirloom variety. This is an older plant variety that was grown before widespread commercial agriculture and is not typically



commercially produced or sold. They are generally more expensive to produce and are beloved by those looking for an alternative to the standard varieties.

Companion Cropping: This is growing two or more crops together in the same area; with the aim of benefiting the main crop. This can include crops that provide various advantages, such as attracting beneficial insects and improving soil health. In the case of 1-Arden, this was a second crop that can also be harvested, as well as providing visual interest to visitors.

Cappuccino vs Latte: A cappuccino is three equal amounts of espresso, steamed milk and foamed milk. It should be in three distinct layers and only drunk at breakfast. It is OK to dip your breakfast cornetto into your cappuccino. A latte is one part espresso and two parts steamed milk, which are mixed together before serving. Also, a morning drink (before 11am), but no dipping!

Americano vs Long Black: An americano is made by adding hot water to an espresso. A long black is made by pouring an espresso into hot water. They result in different flavour profiles, but if you want to look like you know what you are doing, order the latter.

Tea: Dried leaves of the tea plant steeped in boiling water, with milk added to taste. “It’s just better than coffee” - Sophie Aplin. If you want to try the very best tea, speak to Lucy George at Peterson Tea. You can also find more information in her Nuffield report ‘Tea cultivation within agroecology - the development of a high value opportunity for UK farms.’

Entomologist: A scientist who specialises in the study of insects.

Biological Control Methods: A way of controlling pests that uses natural enemies, such as predators, parasites, or pathogens. It is an alternative to using chemical pesticides and is widely considered a more environmentally friendly approach.

Natural Sciences: Subjects including biology, physics, and chemistry in which things that can be seen in nature are studied.

Isabella's Lesson: Most pre-ground coffee has ground up cockroaches in it. Bet you are wishing you stayed in the main body of the report and remained blissfully ignorant now, aren't you?! The FDA's own studies estimate that around 10% of green coffee beans are insect-infected ([ref 11.1](#)). As there is no way to process them out, they simply get roasted and ground with the rest of the coffee beans. Machine harvesting can't select around infested coffee beans, but hand-harvesting can. Also, if you choose to buy whole beans rather than pre-ground then you lower your chances of ingesting cockroaches even more as only “perfect beans” get put into the bags; no one would buy bags of coffee beans if they were full of insect holes.

Flyover: An elevated roadway over another road.



Favela: Most dictionaries will define these as a slum or shantytown located within or on the outskirts of the country's large cities, but that does a disservice to the people who live there. These are areas that have been built out of necessity, often without access to the basics like fresh running water. As the cities grow and expand around them the government often brings the roads and services to them. The Mulheres do GAU showed me that there is more community and pride here than the dictionary definition gives.

The Three Sisters' Growing Method: A traditional technique originating from Indigenous agricultural practices in North America, where corn, beans, and squash are grown together in a symbiotic relationship. The corn provides support for the climbing beans, the beans fix nitrogen in the soil which benefits the corn and squash, and the squash's large leaves create a living mulch, suppressing weeds and retaining moisture

Food desert: An urban area where it is difficult to buy affordable or good-quality fresh food. The fact that the term exists at all should make us, as a food-producing industry, sit up and take notice. It is more depressing to point out that it is not limited to places far away from home, with more than one area of the UK qualifying for that title. If you want to do something about it but don't know where to start, talking to City Harvest in London would be a very good first step.

www.cityharvest.org.uk

Aquaponics: A system of aquaculture in which the waste produced by farming fish provides the nutrients for plants grown hydroponically, which in turn purify the water for the fish.

Hydroponics: The process of growing plants in liquid without soil.

Green Roof: AKA a living roof, is a roof covered with vegetation. This can be for insulation purposes, but more relevant to my study tour have been buildings with growing space on the roof for vegetables. The most complete version of this was Yaoyoich Hokan in Kyoto, Japan, which has a full field on its roof growing vegetables for the supermarket and restaurant in the same building.



CHAPTER 12: REFERENCES

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CHAPTER 13: FIGURES

1: The Author with his Caterham 7 that he built with his father to race, rather unsuccessfully, in the 2014 Caterham Academy Race Series. He named his car Artemis after the Greek goddess of the hunt. Source: Author's own

2: A New Holland CR9.90 driven by the author cutting Siskin winter wheat on his family farm in 2019. Picture taken by a drone piloted by Harry Butson who was working for the author as a harvest student at the time. Source: Harry Butson

3: The interior of the only surviving Dymaxion House designed by R. Buckminster Fuller to address several perceived shortcomings with existing home building techniques. Picture taken by the author in 2024 during a visit to the Henry Ford Museum in Detroit. Source: Author's own

4: A butterfly sweet pea syrup cocktail made with Chalong Bay Rum. Photograph taken at the distillery in Phuket in 2024. One of many consumed during that visit. Source: Author's own

5: The Author and the owner of Tullamore Lavender Farm, Stephanie Craig. The picture was taken in 2024 by Lauren Benoit, a 2024 Canadian Nuffield scholar who arranged this visit. Source: Lauren Benoit

6: Randy Hamilton's corn seed. Picture taken on Randy's farm, Hamilton Organic Farm in 2024. Source: Author's own

7: The Urban Food Forest farm on top of the 1-Arden Skyscraper in Singapore in 2024. Picture taken from the 1-Arden Bar to highlight the relationship between the restaurants and where they get their flavours from. Source: Author's own

8: The milk from breakfast at Hotel Wasabi in Honbetsu, Hokkaido, Japan. Picture taken in 2025. Source: Author's own

The full translation is:

“Asunaro Asunaro Pasture-Raw Milk This is non-homogenized milk pasteurized at low temperature from cows raised on pasture at Murakami Farm. The milk from healthy cows that eat high-quality grass is sweet and has a clean aftertaste. Please enjoy the taste of the milk, which changes with the seasons of summer green grass and winter hay”

9: The spinach course at We are the Farm Akasaka, photographed in March 2025. If you want people to truly taste your spinach, just serve them spinach cooked and seasoned perfectly. I also enjoyed kale, artichoke, sweet potato, aubergine and burdock root in the name of research. And let them put carrot juice in my beer so that I can tell you to try it. Source: Author's own



10: A lamb grazing at The Stone Barn Center for Food and Agriculture in 2024. Whilst this may seem like an unusual choice of photo, the lamb in the picture is part of a project investigating the effect of different grazing options on flavour of the meat of the lamb. The concept is, if the lamb is eating things that taste good to humans, does that make the lamb taste better to humans? When the lamb is served in the restaurant it is served on a bed of what it was grazing on. An interesting concept that was unfortunately beyond the scope of my study to be able to tell you about in any detail, and one of many that are happening at The Stone Barn Center. If you are interested in different ways of thinking about food, then this place should be right at the very top of your list of places to visit. Source: Author's own

11: The Basics from the Detroit Coffee Club menu as used when I met them at Beverland Farms in Detroit, May 2024. Source: Detroit Coffee Club

12: The author and Isabella looking at coffee plants in the grounds of Cafezal Urbano, part of the Biological Institute for the University of São Paulo, Brazil in March 2024. The picture was taken by Julia Christina Campos, who had the arduous task of being my guide and translator whilst I was in São Paulo. I couldn't have got to half the places I wanted to visit without her and I'm incredibly grateful that she managed to tolerate me for as long as she did. Source: Julia Christina Campos

13: One of two three story goat sheds at Hay Dairies Pte Ltd in Singapore, picture taken in October 2024. Whilst it's important to talk about, I have to acknowledge that this is not my area of expertise and pass no judgment on whether this system is good or bad. The fact that it made me ask as many questions has made it one of the most significant visits of my Nuffield journey. For more information on dairy goats I would recommend talking to Rachel Yarrow or reading her Nuffield report 'The dream British Cheese Goat: could a pasture based dairy goat system ever work at scale in the UK?'. Source: Author's own

14: The farm of the Mulheres do GAU in São Miguel Paulista, São Paulo, Brazil taken in March 2024. Whilst I sat here marvelling at what they had achieved, the person in charge of the farm said to me "One day I hope to be able to go to school to learn how to be a farmer". This is the same person who developed companion cropping to the level that she is part of the teaching program at São Paulo University, and whose garden is becoming the predominant area of study on how to improve air quality in Brazilian Cities. She has more right to call herself a farmer than most of the people I know; myself included. If I could distil my Nuffield Scholarship down into a single visit, this would be it. Whilst every Nuffield journey is different, I would say that this visit should be mandatory, I think we could all learn so much from them. Source: Author's own

15: Oko Farms aquaponics farm on the banks of the river Hudson in New York City, photographed in April 2024. The farm has now closed due to the lease on the



land coming to an end and a higher paying tenant taking over the site. Source: Author's own

16: One of the Victorian glass-houses at West Dean Gardens near Chichester. Photographed in July 2024. Originally installed to provide food for the manor house, the kitchen garden is now providing food for the college cafeteria and visitors' restaurant. This glasshouse is using modern biological control principles including distributing and providing habitats for predatory insects. Source: Author's own

17: A large cappuccino from Turret Coffee in Tokyo, Japan, as discussed in Chapter 4.4. Drunk purely for research purposes! Source: Author's own



CHAPTER 14: APPENDIX – ALL THE VISITS

I have documented my visits as I have travelled on various social media platforms and through a variety of content. This appendix is a chronological list of my visits with any appropriate social media posts attached.

Lamma 2024, Birmingham, UK

UpPlant, West Yorkshire, UK

Fyto Ltd, Newcastle, UK

I had a fascinating chat with Fyto Ltd who have gone from growing edible flowers in their vertical farm, to using their modular systems to do research with Newcastle University.

I think I left with more questions than answers for my Nuffield Scholarship. But that's to be expected from my very first visit, I'm excited to continue on the journey.

City Harvest, London, UK

Earlier this week I visited City Harvest, London as part of my Nuffield.

It's the kind of visit that takes time to digest, especially if you are lucky enough that where your next meal is coming from is not a concern.

City Harvest was founded on the environmental principle that Food Waste = CO₂ and doing something about it will be good for the planet as well as the people directly benefiting from the charity's work. This is not something I considered but currently food waste is responsible for 1/3 of Greenhouse Gas production.

The charity can take in food from anywhere in the country and gets it out to people who need it so long as it has a minimum of 48 hrs shelf life.

The logistics of that alone could keep you up at night, and should make you think about things as you are looking at the use by dates on products in the supermarkets.

The facts on the last picture highlight the scale of everything going through this one charity.

This place deserves more information than I can put in one insta post. If you have questions, have a look at their website. If you are a producer with excess food they would love to hear from you.

I left with a complicated set of emotions. I was amazed by what I learnt but I'm not sure how the desperate need for this food marries up to the government directive to take land out of production. I'm not sure if the UK's food purchasing



habits can be adjusted to make less waste in the supply chain, and if it is what happens to the people currently relying on what City Harvest do?

Kew Gardens, London, UK

My travels have also taken me to Kew Gardens. I went because I needed to clear my head and process everything I had learnt from the visit before. It's a beautiful place, even on a cold winters day.

But I stumbled across a couple of things really interesting to my Nuffield. The first is a false banana, the staple food in some of the most densely populated areas of Africa. Just 15 plants can feed a family of 5 for a year.

The second is the student plots, where they are tasked with growing the most productive allotment around several fixed species. I will be going back to talk to some current and past students later this year (not that they know it yet).

Meanwood Valley Urban Farm, Leeds, UK

Last week I visited Meanwood Valley Farm as the next step on my travels.

Meanwood Valley Urban Farm is a 28 acre farm inside the city of Leeds. It's a little patch of green at the end of a housing estate. Set up primarily for social care, they have around 30 adults with learning disabilities visiting every week.

I had the pleasure of meeting Harry, who was very proud to tell me that he was a farmer, that he really enjoys the activities of feeding the animals and that as far as he was concerned this was where he wanted to be.

The site also has a market garden growing over 40 different crops sold on site through a collect your own veg box. Something of a change in production methods from what I do, there they use human power not brake horsepower. But it's a production system that yields much more per ha per year than I do. Definitely food for thought.

Hopefully the team from Meanwood Valley will be able to find the time for a return visit and I will be able to get their viewpoint on my methods.

Duck Island Cottage Garden, St James Park, London, UK

10 Downing Street, London, UK

Sidropolpas Coopfab, Bonito, Brazil

Recanto Ecológico Rio da Prata, Bonito, Brazil

CEAGSP Market, São Paulo, Brazil

Shopping Eldorado, São Paulo, Brazil

Uma Doce Revolução, São Paulo, Brazil



Fazenda Cubo, São Paulo, Brazil

Cidades Sem Fome, São Paulo, Brazil

Mulheres do GAU, São Paulo, Brazil

On Friday I was very privileged to be welcomed into the Mulheres do GAU gardens to learn about what they do.

A community organisation of Women who have moved to Sao Paulo in search of a better life. The garden started on waste land that an agronomist said would never be able to grow food. Now a thriving hub growing fruit, vegetable and medicinal plants that helps to support the people around them.

It's a place where an Instagram post could never do it justice, with produce grown to support the project and any excess going to other community kitchens at less than market rate.

They also have a kitchen run by more local women, who cook good food using the gardens produce and serve lunch to the people of Sao Paulo.

It really was an honour to spend an hour amongst such powerful people.

A passing thought that has stuck with me. My host told me that she hoped to go to school to gain some qualifications on farming. But her garden was so fertile and productive that Sao Paulo university was sending students to her to learn about how to companion crop and farm like her.

She doesn't need to go to school, she needs to write the textbook!

Cafezal Urbano - Biological Institute - University of Sao Paulo

Whilst I was in Sao Paulo I was able to visit a coffee plantation that's in the middle of the city at Cafezal Urbano, Biological Institute of the University of Sao Paulo.

Here I learnt about biological controls of the major pests of Coffee production in Brazil. Parasitic wasps to control beetles, fungi to control nematodes and plant breeding to control moths.

But as interesting as the place was, my guide really was the highlight. Isabella had moved to Sao Paulo from Panama to learn biology because natural sciences are not considered important in her home country.

Of all the people that I met on my travels she was the most excited to tell me about her passion, entomology. She showed fire ants nests, moth larvae, stink bugs and bees all with a bounce and a smile that only comes when you are truly where you are meant to be.

I think if we could all find out how to be happy like Isabella has then the world would be a much better place.



Just don't ask about cheap coffee and cockroaches ok?!

Humberto Rios Labrada

Professor Dame Mary Beard, The Sir Robert Rede's Lecture, Cambridge University, UK

The Honey House and Astor Apiaries, New York, USA

Yesterday, fresh off the plane from the UK I wandered into the lovely Honey House NYC as it happened to be just round the corner from where I am staying.

Having spent weeks emailing people about urban farming and not getting very far, the team from Astor Apiaries could not have been more welcoming and keen to tell me about beekeeping in New York city.

I learnt about the issues of high demand and low volume and how that relates to a retail setting, as well as how the biggest pollen source in the city is the littleleaf linden tree.

Okofarms, New York, USA

Okofarms is an aquaponics farm in Brooklyn, New York.

Aquaponics is a farming system cultivating Fish and Plants in a mutually beneficial way. The process begins by feeding the fish, whose waste is converted by beneficial bacteria into nitrates, food for the plants. These plants, in turn, help filter the water for the fish, creating a sustainable and symbiotic environment. This closed-loop system results in efficient use of resources and minimal waste production.

In this case the fish are mirror carp, catfish, goldfish, koi, bluegill, crawfish and freshwater prawns which are fed a diet including watercress and other leafy greens grown on the farm as well as black soldier fly larvae.

The plants that are grown in this system include cabbage, onions, leeks, carrots, sweet potatoes, lemongrass, cilantro and many many more.

All this from an ecological farming method that mitigates the impact of climate change and increases food security for urban residents.

It was a really impressive set up. Very different to any of the other Urban Farms I have visited so far. It's definitely got me asking myself questions about what role aquaponics has in UK food production.

Herbianna, New York, USA

Central Park, New York, USA

I had a couple of spare hours in New York so I went to visit Central Park.



The Bethesda Fountain was built in 1873 to commemorate the opening of the Croton Aqueduct, which supplied New York City with fresh water. A Roman style aqueduct... Well I guess that's the American answer to that immortal question of what did the Romans ever do for us?

What's more interesting from a Nuffield Scholarship point of view is the Old Dairy. I wandered over here thinking that they might have actually milked cows in Central Park, but no. The answer is actually even more relevant to today. The Dairy was a place where children of the city could come to get milk, which wasn't readily available within the city. As I've travelled around talking to urban farmers I've kept hearing the phrase "food desert". Areas where fresh food is not easily available or affordable. It's a thought that as a middle class Englishman I've never even considered existed in the developed world. But the Dairy is proof it's been a problem in cities for a long time.

Whilst we are talking about Central Park, can we talk about why Cleopatra's Needle is held up by crabs?

Eastern Market, Detroit, USA

First thing I did in Detroit was visit Eastern Market. This is a huge farmers market in Detroit that happens every Saturday.

I went in the hope of finding some local producers who would be willing to talk to me. And I was surprisingly successful.

First up I met one of the three brothers who run Northern Growin' LLC. A completely "No Spray" farm about 3 hours north of Detroit. Only 8 acres but the dictionary definition of diversified production with everything from micro greens to pork.

Then I spoke to Burdas Berries about asparagus production, because that's what's in season here right now, and his fascinating take on berry production in the north of the USA. Let's just say he could teach many of the commercial scale growers a thing or two.

Mrs Pruitt's Cha Cha were next up. Not a farmer but this stuff didn't just smell great, look great and taste great. IT WAS GREAT. I wish I could have bought some home with me.

I didn't get any pictures of New Suns but I am so grateful for his time and his instructions of where to go next. Hopefully I'll tell you more about Robbie Moore as soon as I have been invited to see his farm (and yes this is the 2nd Robbie Moore that I have met on my Nuffield travels...)

I also had a great conversation with another farmer who was so excited to talk about farming with me. I'm surprised he didn't pack up his stall right there and



then drive me straight to his farm. I'm heading out there tomorrow, so watch this space

Beaverland Farm, Detroit, USA

The next stop on my travels was Beaverland Farms. I knew nothing about this place 30 mins before I walked through the gate, but I couldn't have found a better place to stumble into on my first day in Detroit.

I was kindly shown around by Shelby who is in charge of the flowers at Beaverland. 5 years ago she left her corporate job and followed her passion into farming. People choosing to come into the industry still baffles me, but hearing Shelby talk about Beaverland was amazing. She definitely has more right to the Farmer job title than I do.

Beaverland has just opened its own on-site store, stepping away from the farmers markets that have been the traditional outlet for small scale farms. They also have a weekly veg box scheme in conjunction with 2 other urban farms supplying local seasonal veg, and the option to pay more to get access to the early and late season veg grown in polytunnels. Shelby also runs a flower subscription service, similar in principle to the veg box but definitely the first of its kind that I have come across.

The diversity of what was grown here is amazing. From the 18 different types of tomatoes to local medicinal plants. Somehow they were even managing to convince people to buy stinging nettles to plant in their garden... As a Brit that crazy talk, but it happens! They are also cleverly rotating laying chickens around to weed and fertilize the veg and flower beds.

There is so much more I could write about Oprah's involvement and the community involvement but there isn't enough space on Instagram to do it justice. I guess you will just have to wait for the full Nuffield Farming report 😊

Detroit Coffee Club, Detroit, USA

On the course of my travels in Detroit I met Detroit Coffee Club who were serving fantastic coffee at the Beaverland Farms open day.

Whilst not directly relevant to my Nuffield studies a couple of things that came up in conversation, whilst the best cup of coffee I have had in Detroit was being made, that have really stuck with me.

The first was the simplified menu. In his own words "coffee names don't make much sense and most people don't actually know what they want to order, so I've simplified it"

Espresso, espresso with 'this much' milk, espresso with all the milk. And then a choice of hot or cold and cow or oat.



Maybe the agriculture industry could learn from this thinking and make understanding what we do easier? I've already stopped using the word arable as I try to explain what I do.

The second was something that I have come across before in this process. And that was when Detroit Coffee Club moved back to Detroit, he couldn't find the good coffee that he had become accustomed to in Boston. So rather than put up with bad coffee, he bought the kit to make it himself. The business was never planned, but his friends tried his coffee at home and said "this is good, you should bring your kit and serve coffee at my event".

If you can't find it, and you're enthusiastic enough to do it well, anything is possible.

Sanctuary Farms, Detroit, USA

Next on my tour of Detroit was a visit to Sanctuary Farms to join in on a soil event organised by Keep Growing Detroit

Sanctuary farms are an urban farm inside Detroit, that on top of growing crops like root vegetables, corn, and squash, has a substantial composting operation.

Their compost is made at the farm using locally sourced food waste and a blend of organic materials such as leaves and wood chips. We had an interesting chat about what comes in and the issues with biodegradable bags and their effect on microbiology. The people on the soil course had much greater trust in getting the compost from Sanctuary rather than any of the big stores.

Trust and understanding is something that came up a lot in this meeting. GMOs, Big Ag and pesticides all came up. Something that needs its own space to explain.

The soil lesson was hosted by Parker, one of the founders of Sanctuary. He taught the basics of structure, right up through to microbiology and soil health. The people who were attending all had plots of their own (or were just starting one) and wanted to understand how to make their plants healthier and their growing more successful.

It's really encouraging to see people taking their own veg growing so seriously, and engaging beyond planting seeds.

Coriander Kitchen and Farm, Detroit, USA

Coriander Kitchen and Farm is the only restaurant in Detroit that has its own farm within the city. Growing things that are served in the restaurant as well as being involved in the veg box scheme with Beaverland Farms.



The sandwich was SOOOO good! The micro greens came straight from the farm. Their famous farm based menu item is the Farm Marg that has herbs from the farm in it. I wish I could have tried that but I was driving... Next time.

Belle Isle Oudolf Garden, Detroit, USA

Hampshire Organic Farms, Michigan, USA

Next up my trip took me to upstate Michigan "into the thumb" to visit Randy Hamilton and his family on Hamiltons Organic Farm.

I had met Randy two days before at Eastern Market, where he has a stall, and he kindly invited me to visit and see how they farm.

Before I got there, I mentioned to a couple of other Detroit residents that I was heading up here and they all responded with the same thing "Oh my god his corn meal is amazing. Like the most flavour you can find"

His corn variety is what we would call a heritage variety. Not a high yielding conventional variety, but one that has naturally pollinated with the best corn kept for seed for generation after generation. He then feeds it with his own custom blend of molasses and other organic feeds to create a product Detroit backers are going crazy for.

He's also milking 30 Jersey cows, 3 at a time in the parlour pictured, selling the milk direct to customers and turning the excess into their own butter, cream and ice cream. The castrated bulls are also harnessed up in his grandfather's yolk and being slowly taught how to pull the plough.

Family is a big thing in Randy's life. He talked with great pride about how his grandfather came here, built the barn by hand and how he hopes to keep building his business so that he has something to hand down to the next generation. More than anything that was the driver for everything Randy does.

His grain and flour business is going from strength to strength. Moving from the mill pictured to a new custom facility at Eastern Market in partnership with the not for profit organisers of the market.

Henry Ford Museum, Detroit, USA

Meanwhile back in Detroit I visited the Henry Ford Museum and Greenfield Village.

This turned out to be more related to my Nuffield than I was expecting, because beyond one of the largest collections of vintage farm machinery there is actually a fully working farm within the museum.



Still farmed in the same way as when Henry Ford was young, with horses and a traditional rotation, it's used to educate people about where their food came from and how much work growing food used to be.

There are also several small vegetable plots around the village, each in keeping with the building and time period that they are next to.

As well as that, there is Henry Ford's soya laboratory. I wasn't aware that he was directly involved in making it one of the world's biggest crops. But he saw potential in it before the rest using it in his paints as well as promoting its nutritional value.

Stand 44 by Chef Dave McGregor, Detroit, USA

The latest restaurant at Greenfield Village is Stand 44. I was lucky enough to get a lot of behind the scenes information about this place from head chef Dave McGregor, not that he was fully aware who he was talking to. The concept behind this restaurant is to be fully recyclable and compostable, with the latter happening on site and then used in the Village. Eventually they plan to start to use the food grown on the farm in the restaurant, but currently it's using local Michigan produce.

Keep Growin' Detroit, Detroit, USA

My final stop in Detroit was to visit the Keep Growin' Detroit "Hot Crop Distribution Day" at their farm by Eastern Market.

This was one of three times of the year when members of the Keep Growin' Detroit Garden Resource Program can come and pick up seeds and transplants for them to grow in their own gardens. Along with information on how to plant them and look after them.

Each year hundreds of thousands of vegetable and herb transplants and 7,000 heads of Motown Music seed garlic are grown and distributed at the KGD Farm to over 2,000 Detroit based gardeners and farmers.

The Garden Resource Scheme is only \$15/ year and also gives people access to guides, soil testing (very important in Detroit), technical and planning support, as well as the opportunity to sell their produce under the Grown in Detroit label.

This was a project that kinda blew my mind a little bit. Firstly by how much was available for such little money, but mostly by the engagement they were getting from the community. Standing at one of the tables (chillies as it required no technical knowledge of growing veg in a city) as hundreds of people came through picking up what they wanted to plant was breathtaking. A lot of the projects I have visited have been one person's passion project, but here it was the community's desire that pushed things along.



KGDs mission to cultivate a food sovereign city where the majority of fruits and vegetables consumed by Detroiters are grown by residents of the city seems well on its way to becoming a success.

DEKLAB, Ontario, Canada

I crossed the border into Canada and into an EVEN BIGGER pickup truck. Visiting the amazing person Lauren Dalyce who managed to fit a last minute poorly organised visit from me into her busiest time of year.

At least I managed to make myself useful and help with a DEKALB corn hybrid variety trial planted near Burgessville, Ontario. With local farmer Calvin Veld doing the planting. Looking at current commercial products as well as a few experimental hybrids that could be commercialised this autumn.

From a Nuffield point of view it gave me a reminder of the level of detail that's possible when you scale everything down. I think detail gets lost when you are trying for a homogenous approach to cereal farming at my scale.

Tullamore Lavender Company, Ontario, Canada

I can't profess to know much about lavender. But the infectious enthusiasm of Stephanie meant I didn't want to leave. Taking lavender away from the slightly old person vibes and into the modern world, Stephanie's mind has conjured a business that reflects her personality as much as the Lavender she is growing.

I'm slightly upset that I turned up before the Lavender craft beer was ready. But I guess that means I have to go back.

What did I learn from the visit Nuffield wise? Stephanie is another in a growing line of people who have left a "good" job to come back to agriculture. Something I still can't quite understand but these are the people who have the enthusiasm that our industry is lacking.

The other bit that keeps rattling around my mind is the "Terroir of Lavender". We are so used to hearing that related to wine, why can't it be used to elevate other crops?

Goodlot Farstead Brewing, Ontario, Canada

At the absolute instance of Tullamore Lavender Company I headed off to visit Goodlot for dinner and beer

The food was great. The beer was great. The chickens were great. It's even better in that it actually relates straight back into my Nuffield. Goodlot is showing up the big brewers by doing something different.

By growing their own hops and using "hyper local" produce they are creating beer with a unique flavour. A beer that can only taste like this because it is made



here. Twice in 24 hours the word terroir was being used to describe things that I hadn't associated it with before.

Have big food producers made us forget how interesting new flavours can be?

New York Botanical Gardens, New York, USA

Back on US soil, after some issues at immigration, my first stop was New York Botanical Gardens.

Mostly I chose to come here because after a few days racking up the miles I needed somewhere I could sit in the sunshine and have a slow day to collect my thoughts. But as seems to be the case with my Nuffield, I walked into another place growing food on a small scale.

Within the Botanic Gardens is the Ruth Rea Howell Vegetable Garden and Edible Academy. Here they are teaching children how to plant, look after and harvest veg plots and then linking it back into culinary skills.

Whilst I was there they were planting carrots and then having a demonstration on cooking some of the produce grown in the garden.

It was also used as a demonstration plot, showing edible species from different countries and cultures, organic farming principles, composting and companion cropping for beneficial insects.

The Battery Urban Farm, New York, USA

With the Manhattan skyline in the background and right on the banks of the New York Harbour, the Battery Urban Farm couldn't be more urban.

Originally set up following a request from 8 local students, the farm now engages over 5000 students from 100 New York Schools as well the general public.

Produce from the farm is either used in the educational programs or donated to organisations in New York dedicated to hunger relief.

This is definitely a case of a project growing from humble beginnings to doing an awful lot of good for New York.

Pennings Farm, Upstate New York, USA

I spent a day touring around the farm shops and cider producers of New York State.

First stop was Pennings Farm Cidery, where I learnt some lessons on branding! Repurposing old shirts with new style that fits with their vibe. Alongside their own produce (the apple cider doughnuts were amazing) I also found some single farm origin milk which was a concept I found very interesting.

Warwick Valley Winery, Upstate New York, USA



Bellvale Farms Creamery, Upstate New York, USA

Jones Farms, Upstate New York, USA

Finally I visited The Shops At Jones Farm. With a polytunnel and veg plots for food production going into the cafe and farm shop it fully ticked my Nuffield brief. I wasn't expecting to find a glass fronted bee hive INSIDE the shop but that was a great surprise. Another place that makes me realise that the Americans do branding so much better than we do here in the UK.

Stone Barn Centre, Upstate New York, USA

I'm not going to lie, this one was a big deal for me. Having nothing more than a phone conversation with them arranged before I got on a flight I was so excited to be able to visit the Stone Barns Centre for Food and Agriculture.

I was shown around by Andrew, who sits between the non-profit farm and the restaurant team, and to be honest you could write an entire Nuffield paper on just what was going on here.

The interesting dynamic between the kitchen and the farm really highlighted how big the disconnect between food and farming has become in normal life.

Andrew told me about how a few years ago their kale was full of shot holes from flea beetles, but Chef Dan wanted to use it because it shows part of the story of food production. The next year when there was no damage, Chef was actually disappointed. Could you imagine this happening in any other place? We struggle to find a market for carrots that aren't perfectly straight.

There are also several interesting projects going on related to how farming affects the taste of food. From chefs selecting green bean varieties by taste year on year to multiplying up to looking at cattle breeding to create better tasting dairy cows meaning they have more value at the end of their milking lives. That's before you even get to the biodynamic pastures flavouring the lambs pictured.

And yes I ate the food. OMG it was good!

Back in the real world the farm also supports projects in the Bronx, getting fresh veg into places that can't get it or afford it. The term "Food Desert" is really getting to me now. I have heard it a lot on my Nuffield travels. I hadn't realised that our food system was so broken.

American Food Shops

As I deep dive into food production around the world I've been paying closer attention to what's available in the supermarkets, and America provided so much for me to think about.



Firstly it is true, everything's bigger in America. Finding a UK size packet of anything was a challenge. Kendra Hall explained "Everything is big because we have the storage for it. And everyone feels like they get a better deal by buying bulk. Also Americans are much more likely to have big gatherings than in the UK so the stuff gets used up".

I haven't found the figures on food waste yet, but it feels like it's got to be higher than the cultures where we just buy the amount we need.

The big wake up call came from my friend Alan Bradley, I had a car so I was driving out to the big Walmart to do my shopping. But for many Americans this is a luxury that they don't have. The local inner city stores and remote rural stores are quite often limited to "Dollar Stores" which is basically a Pound Shop, but much grimmer. Imagine removing all of the fresh produce from a convenience store, replacing it with alcohol and then placing the only member of staff behind bullet proof glass and you are probably halfway there.

It's no wonder that there are nutritional issues in the USA. It also goes some way to explain why food deserts exist and why people are looking more and more to grow their own food.

Newhalls National Trust for Scotland, Edinburgh, Scotland

And into country number 5 for my Nuffield Travels.

A quick trip over the border into Scotland for a wedding meant an opportunity to see something slightly different.

This is the Walled Garden of Newhailes on the outskirts of Edinburgh. Owned and run by the National Trust for Scotland.

You haven't got to go too far back in time to reach a point where most people with space were growing their own food out of necessity. And whilst most veg patches have been lost to history, large homes and estates had walled off areas for food production that survive. The walls were built to keep out unwanted pests and protect the crops from thieves, whilst also creating a space where the lord and lady would want to visit.

In many places these walled gardens have been replanted with ornamentals, but here it has been turned into a market garden, providing a very similar service to what it was intended for originally.

It's great to see places like this showing food production to families within its historical context. Maybe seeing this and the educational visits that they run will inspire some more small scale food production in the future.

Groundswell, UK



Aponic International

I am very lucky to have travelled around the world and seen many different vertical farm layouts, but in my opinion none have captured the global food production issues quite like the Aponic International team.

Aponics have an aeroponics system that costs around 1/6th of a traditional vertical farm set up, and can run completely off grid using only a 12v car battery. It doesn't take too much thinking to name places in the world where this type of food production could be game changing.

Their aim is to enable anyone to become a food producer without the huge capital outlay required.

Their system also has dramatic implications to conventional agriculture. They have a set up in the UK currently growing commercial seed potatoes in a disease free environment.

Goodwood Festival of Speed, Chichester, UK

In my continuing journey of finding stuff related to my Nuffield Farming Scholarship where I least expect it, here is what I found at Goodwood FOS!

This is Earth Rover a self guided high intensity light weeder. Using AI and cameras it's able to learn the difference between crop and weeds and zap the weeds with a short light pulse. No pesticides needed.

Another example of the small companies looking to change the way we think about food production in this country.

Oving Cow Shed, Oving, UK

This is the Oving Cow Shed, a coffee and fresh milk vending machine outside the village hall in Oving (Chichester).

The milk comes from one family owned organic dairy farm, enabling them to add value to their milk by selling direct to customers without the running costs associated with a traditional coffee shop.

They also have a vending machine, selling cakes made by the family as well as other local produce including honey and cheese.

In a village with no shops, this has been very welcome by the community.

Caffeine and Machine, Bedford, UK

Come with an open mind, or don't come at all.

West Dean Gardens, West Dean, UK



I visited West Dean Gardens on a family picnic and once again stumbled unwittingly into another Nuffield Farming visit.

The gardens were originally built in the 1600s alongside a manor house. Substantially rebuilt in the Victorian era and then regenerated again in the 1990s the walled garden is still producing food, although now it is used for the College cafeteria and visitor restaurant rather than just one family home.

I also came across an example of biological control methods. They are using small pieces of cork matting in the glass house fruit trees as launch pads to help distribute predatory insects to control pest species.

Nostell National Trust, UK

Another day another historic property whose garden is still producing food.

This time it is Nostell near Wakefield. The manor house was at its peak in the 1800s, but its kitchen garden is still growing food for use in the cafe and to sell to local producers like Snugburys who use the apples in their apple and cinnamon ice cream.

The garden is still using techniques that we think of as modern, inter-cropping late flowering pollinators amongst the cabbage as an example. Along with a large banana plant, that must have been a real talking point back in the day.

The garden was also growing plants for medicinal purposes back in the 1700s. Though not all of the ideas they had have stood the test of time. Any volunteers with a cold willing to try leaving a raw onion in brown sugar overnight and then drinking the resulting liquid in the morning?

Verde Flower Co, UK

A couple of weeks ago I visited Verde Flower Co up in Gateshead.

A visit that was as much about Roisin as it was about the urban growing of flowers for weddings.

Her plot growing pesticide free flowers right by the River Tyne, almost in the centre of Newcastle, has multiple functions.

They go into her wedding flowers, although she currently doesn't grow enough to use just her own flowers.

They provide a site and content for her many social media outlets, TickToc has proved to be a major source of business for her flowers.

Finally they provide a mental health space for herself and the general public. Could there be anything nicer than receiving a message from a randomer telling you how much your flowers have improved their day? Certainly doesn't happen with a field of wheat.



I don't think there is enough space to list EVERYTHING Roisin does, but it's safe to say she is a very impressive person. It's clear to see why she got her Nuffield Scholarship in 2023.

Funan Urban Farm by Edible Garden City, Singapore

After less than 12 hours in Singapore I walked into my first Farm of this trip.

Funan Urban Farm by Edible Garden City is built on top of Funan Shopping Centre. What is fairly remarkable is that it was planned to be here from the outset of construction of the building. There has been a lot said of the forward thinking urban planning and architecture of Singapore, and once you get over its breathtaking beauty, the amount of greenery is unbelievable.

This place is designed as an educational showcase of indoor and soil-based farming, as well as vertical growing and aquaculture. When I visited it was full of locals enjoying the green space.

There is also a strong community element to the farm, with it hosting many educational workshops teaching techniques so that they can grow food themselves.

The Green Collective, Singapore

Having a vertical growing unit in the doorway to your shop is one way to grab my attention, and the perfect way to highlight how little space is required to start growing food.

This is The Green Collective store in Funan Shopping Mall. They are Singapore's only collective of eco-friendly products, which sounds surprising as someone from the UK, where eco-friendly is almost mainstream.

What really caught my attention in the store is the products made from urban timber by Arthur Zaaro. This is not a part of urban farming that I had considered until now, and if you combine this with the thinking of urban beekeepers like The Honey House the potential productivity of our beloved green spaces is high.

However I will add that local produce is very much an upper middle class thing in Singapore, and the UK also. With prohibitive pricing for the majority.

Citadines Rochor Hotel, Singapore

Hay Dairies, Singapore

My first visit to an intensive urban livestock farm was at Hay Dairies in Singapore. The only goat dairy in Singapore, potentially the only dairy in Singapore though I struggled to confirm that.



800+ milking goats on a site that I estimate to be no bigger than 100m x 100m. And that includes the milking parlour and production facilities. The 365 housing was two 3 storey high goat houses with central slurry drainage.

I should get it out there straight away that I don't think I was quite prepared for what intensive urban livestock farming was going to feel like. My background is in extensive agriculture, and I'm just used to seeing livestock in fields.

Not that the animals were stressed. I've never seen such chilled out goats. And the whole system is antibiotic free, which would indicate the goat management has to be very good, however 3 floors of goats on mesh was a tough thing to contemplate.

But I can't just spend my Nuffield flying around the world visiting play farms of billionaires.

I don't have an opinion currently as to how I think this fits into the future of global food production. But with increasing demands on land and the requirements of an increasingly urban population, maybe I have just visited the dairy farm of the future.

Skyscraper Garden, Singapore

Over the course of my Nuffield, I have encountered people farming in small spaces for a real variety of reasons. This visit was definitely a socioeconomic outlier.

When the private owner of this skyscraper in Singapore designed his building, on the level below his penthouse a section of the building was earmarked for food production. Half exposed to the sun and half shaded by the floor above the farm is a mixture of raised beds, poly tunnels, trellises and trees.

I was privileged to be able to sit and talk to the farmer for an hour discussing not just this site, but also Singaporeans opinion on food production (more on that to follow).

There is no commercial element to this farm. Food is grown as the owner wishes. This includes being fully organic, with no imported manure (because of lasting hormones etc in the available manure). The only form of fertiliser is compost that is made on site. Varieties are also chosen by the owner, e.g. specific passion fruit varieties not available in the rest of Singapore because the normal ones are too sour. And the leafy greens have to be checked for nitrite levels before harvest.

In reality, the difference between this site and the "subsistence" farms I have visited is small, though in character it is probably much more reminiscent of the old walled gardens of England's stately homes in the 1700s.

30 by 30, Singapore



The whole reason I wanted to get out to Singapore was the 30 by 30 project. The government's aim is to produce 30% of the food consumed in Singapore from within Singapore.

As a UK farmer it seemed almost too good to be true. A government actually interested in food production and the funding to achieve it.

As is often the case, it is.

Having time to sit down with a farmer, who had moved into the city because the government had compulsorily purchased her farm, gave a real insight into the reality.

There are requirements to hit government targets for profitability and production (with a ramp up to fully profitable by year 3) with a clause that if you don't hit the target then the government takes the farm back.

There is also not the interest amongst the people. Most Singaporeans do not cook at home, why would you when your culture of many small restaurants (hawker markets) means eating out is cheaper than buying in. And when they do shop, it is done so on price.

My farmer could not say where she could actually go to buy food grown in Singapore. And she knew that Chinese grown produce was cheaper. Why would you try to compete on the massive market when imports are cheaper?

The market for Singapore produce is right at the top of the socioeconomic scale. Which is a similar story that I've found across the world.

Just a small snippet of what I have learnt.

FYI the farmer isn't named for no other reason than I have real trouble remembering names, blame the ADHD for that, and not be photographed due to my social awkwardness.

1-Arden Sky Garden, Singapore

I couldn't look at urban farming in Singapore and not head to the highest urban farm in the world!

Spread over 3 floors starting on the 51st floor of the 1-Arden building, this 10,000 sq ft and 280 metres high Food Forest houses over 150 varieties of herbs, plants, fruits and vegetables.

Working together with the Culinary Teams at the 1-Arden restaurants, the Head Farmer has an experience that showcases a "sustainable lifestyle" whilst producing food to be used in the restaurants.



I arrived at sunset, and it was hard to concentrate on the farm with the sun putting on a hell of a show over Singapore. But there is no denying the wonder of farming in that space.

Obviously after all that work, I needed to taste the produce. 34 floors below where it was grown (still 17 floors up) I got the chance at Sol and Luna.

Sol and Luna, Singapore

Baan Rai Me Rack Organic Farm, Phuket, Thailand

Change of country, change of scenery.

Bordering the Khao Phra Thaeo national park in Phuket, Thailand, is Baan Rai Me Rak Organic Farmstay. Where Ju and his wife grow many different types of leafy greens, bananas, passion fruit veg, including the best frilly beans, and raising chickens for eggs.

The produce is used predominantly in the family home and in breakfast/ dinner for the guests in the 4 lodges they have on the farm.

Very little is sold in the local area. As Ju said, why would people buy from you when everyone around here grows their own. One of the types of bananas grown here is in high demand in the city of Phuket, and when they are ready he sells them online and delivers them himself.

The farm is organic, and encounters the same problems that we do in the UK. Pest pressure, which increases when either side of Baan Rai Me Rak are conventional farms who spray their produce pushing the pests Jus' way.

Duckweed is used as fertilizer and chicken feed. Due to the favourable conditions the duckweed can replenish itself every 4 days.

One thing that is probably disheartening to know as a farmer, is that as far as Ju is concerned it's tourists first - farm second.

Phuket Elephant Sanctuary, Phuket, Thailand

Green Land, Phuket, Thailand

Down in the south of Phuket, agriculture has pretty much disappeared. Tourism is where the money is, and unfortunately drug tourism has become a thing in Phuket, with cannabis retailers on every single street.

Why I'm telling you is because as a mark of differentiation some places are growing their own in the shop in hydroponic setups. Possibly to prove its provenance, possibly just to get the tourists through the door.



Unfortunately I don't have too many details (or any pictures), this is not my world and my smiling face asking too many questions didn't go down very well. I decided to leave before the initial friendly reception turned further.

Aquaponics, Phuket, Thailand

Koh Panyi, Phuket, Thailand

Chalong Bay, Phuket, Thailand

The last Nuffield visit of Thailand was to the only distillery on Phuket.

Whilst this may seem as a thinly veiled excuse to drink all the Rum and claim it as work, this is the one of the best examples of what my Nuffield topic encompasses.

The starting point of most supermarket Rums is molasses, a by-product of the sugar industry. Sugar in Thailand means sugar cane, of which there are over 200 varieties grown across Thailand. The 'father' of Chalong Bay decided that if he was worried about how his rum was going to taste, he should worry about how the sugar cane juice tasted and found very quickly that the taste changes so much by area, variety and production methods. 2 years of research later he settled on a couple of varieties grown exclusively by small organic Thai farmers, with no burning for land clearance and hand harvesting techniques.

The 'no burning' rule is important. He found that you could taste the burn in the sugar cane juice years after the burning was done. Not a level of detail available to the bigger producers where volume is king.

This is processed into the rum, by 7 employees in total. The maximum allowed by the Thai small business rules.

Another step that needs highlighting is the new reusable packaging for restaurants and bars. 5 litre containers that are returned, cleaned and refilled reducing waste across the island.

I wish I had more space to eulogise about this place. And how farms could learn from this mindset.

Hubers Butchery, Singapore

After landing back in Singapore I headed off to Hubers Butchery.

I had read online that they had made a raised garden using old decking boards to grow herbs to use in their restaurant. Turns out that would be the least interesting thing I would see there.

Having seen the planters I thought I would wander up into their shop. Past the counters of meat, with big screens telling you about the farms and farmers who had raised the animals (Australia mostly, but many other countries including Poland and France. Quality is king here).



I found in the fresh food section food for sale that was actually grown in Singapore. The only place on my travels that I managed to do this. Farmd are a vertical farming company, who didn't want to engage with me, so I won't talk much about them. What I will say is I don't earn enough to be able to afford what they were growing. Singapore is expensive, but this was ££££s. You had to really really want Singapore grown produce.

In the freezer section I found quite possibly the most mind blowing product of all my travels. LAB GROWN CHICKEN for sale to the public. I had known it was possible in theory, but I hadn't realised it was commercially available now. I would love to tell you more about it, but I couldn't afford to buy any and the staff didn't know any more than what was on the flyer. But still 🤖.

This place is proof once again that the most interesting places aren't always where you expect.

Open Farm Community, Singapore

My last visit in Singapore was to Open Farm Community. An urban farm in the heart of the city with a rather good restaurant sat in the middle of it.

The farm feeds produce into the restaurant, but the founder, Cynthia Chua, has always had the vision that the farm should bring to life the potential impact of urban farming in Singapore. To help strengthen the population's understanding and respect for food and its origins.

The farm provides a space where families can come together and explore food together through tours of the vegetable and fruit orchards, talks and gardening workshops.

And obviously by eating in the restaurant which I duly did and it was amazing (cocktails from the farm a highlight) - a Nuffield farming scholarship is hard and someone has to do it.

A world renowned chef showing off local produce doesn't seem that unusual in the UK. But it was a lot of hard work to find in Singapore where the public has little interest in home produced food.

It was possibly the best way to end touring a country that has such a complicated relationship with national produce.

Croptec Show, Birmingham, UK

Tokyo Terra Farm, Tokyo, Japan

Yesterday I had the pleasure of visiting Tokyo Terra Farm hosted by Kubota San.



By the side of the railway an hour and a half outside of central Tokyo, Tokyo Terra Farm is one man's vision of the future of Japanese agriculture.

25 years ago Kubota was a salaryman, but came to the conclusion that pesticides on food were harming his and his family's health. As organic agricultural produce was not available in the shops (it's still uncommon now) the only way he was going to be able to provide pesticide free food for his family was to grow it himself.

Being unable to buy land himself he rented a plot of about 2ha and started what he calls "a 25 year experiment" into organic agriculture, growing many leafy veg, leaks, onions and broccoli as well as raising chickens that produce a higher level of brain helping proteins in their eggs.

Beyond production for himself, he also offers a pick your own service for families out of Tokyo, space for local care home residents to reconnect with nature and a place for students to come and learn hands-on agriculture.

The day before I arrived he had a group of local university students cultivate his field with shovels! If anyone knows of any students wanting to do that in the UK let me know!

Despite not having a common word between us, I feel a connection to Kubota San. The want to grow better food for yourself and your community is a universal language.

Ninja School, Tokyo, Japan

Hama Rikyu Gardens, Tokyo, Japan

Only a farmer can stumble into a field of OSR in central Tokyo and be genuinely excited.

This was in Hama Rikyu gardens just south of the Imperial Palace. In an area dedicated to wildflowers. The plot was full of birds making the most of flowers.

It shows that there are always sides to crops that we don't consider as farmers. I would never have considered OSR a wildflower whilst I was growing it. But I think the UK countryside is a poorer place now that it has been lost in most farmers rotations.

Turret Coffee, Tokyo, Japan

I was starting to think that I wasn't going to find the food culture that reveres its ingredients in Tokyo. It all seemed to be fast and convenient rather than "how can this be better"

That was until I got pointed in the direction of Kiyoshi Kawasaki, owner of Turret Coffee. Located behind a Starbucks in Ginza, Kiyoshi San has been working away



for over ten years to perfect his coffee. Specialising in espresso and latte, he is choosing his coffee beans so that they work perfectly with his chosen milk, and pairing it with the best local sweet treats (from a Michelin starred neighbour on some occasions).

There is probably more care and attention in one cup here than in the entire coffee chain he's located by.

Dedication to getting it right has led to the recognition it deserves, with Turret Coffee getting into the Michelin guide. The first Japanese coffee shop to be recognised in this way.

We are The Farm, Tokyo, Japan

Farm to table.

A concept that I have been looking for around the world because it very often leads to the best farms in the area. Didn't think I would find it in Tokyo, no where was shouting about "local produce" until I found these guys.

We Are The Farm has 4 restaurants across Tokyo, using a fixed course menu to highlight the seasonal vegetables grown on their farm. We enjoyed seven different individual vegetables shown to their full potential by excellent chefs.

From the kale harvested that morning, through artichoke, sweet potato, taro , aubergine, spinach and a very special burdock root eaten by samurai before battle!

Even the drinks showcased farm produce, with farm grown rocket seasoning the Gin and Carrot mixed with the beer.

I have never been anywhere that makes their own production the star of the show as much as this place. It definitely made the Wagyu Beef play 2nd fiddle.

Tokyo, Japan

13 million residents, 36 million people as a "work day population"

Yet also nearly 8,000 ha of cultivated agricultural land.

The whole starting point for my Nuffield Japan trip was to try and understand how that works. And to begin with, in the centre of Tokyo I couldn't find it. There wasn't any green space apart from the parks and I couldn't find the rooftop or vertical farms like in Singapore. No one was talking about provenance. Food was fast and cheap.

Then I got the train into the suburbs and suddenly it all made sense. Farms were everywhere. Any land that we would use for garden space in the west, was cultivated and growing produce.



Farm land is even part of the planning process, I visited a building site where it was marked out amongst the houses and industrial units.

The reason I couldn't find these farmers on my internet searches was because the average age of a farmer in Japan is 80! And when you consider the average wage is less than a 1/3 of a starting salary for a "normal" job you can see why the young people aren't interested.

Tea Plantation, Saitama, Japan

Up in the hills of Saitama prefecture I visited a green tea farm.

I've been relying on Google translate a lot on this trip, but this time it completely failed me. Not a common word available and no way to ask the complicated questions that normally come with a Nuffield visit, I don't have the answers I was planning to find.

How does a traditional (small, I think) tea plantation fit into the Japanese tea market?

Is big business pushing for homogeneity or is small individual tastes and flavours a thing in this market?

What type of tea are they growing?

But I had a very nice couple of hours being shown around and saw young tea plants and some at harvest size.

What we did manage to figure out was that the fans in the field are for frost protection. Gonna need a lot of them to cover my fields.

Garden Farms, Fuji, Japan

The same as the outskirts of Tokyo, any small area of land is taken up by farming rather than ornamental gardens.

This is old school subsistence farming, with the excess occasionally sold at local markets. The only place I can find any similarities is in the war time Dig for Victory campaign.

7 Cedars, Fuji, Japan

I also stopped in at a vineyard (who wouldn't) called 7 Cedars, named after the trees at a local shrine. Not the first time I've stood looking at grapes in the shadow of a volcano. Volcanic soil obviously gives good terroir.

Obanzai, Kyoto, Japan

On my Nuffield travels I have obsessed about provenance. Being proud of where your food comes from and telling that story to your customers has been the key to success for many small farms.



I never expected it from a whole city though. Kyoto has a type of cuisine called Obanzai. Obanzai is a cuisine of simply prepared fish and vegetables, but what makes it special is to be called Obanzai, at least 60% of the ingredients have to be grown or produced within Kyoto AND be in season!

Could you imagine having an identity as strong as that in the UK? And what would that do to the appreciation of food and food production in the UK?

I feel like someone could do a whole Nuffield Scholarship on Obanzai alone.

Yaoyoich Honkan, Kyoto, Japan

I have been to many rooftop farms now, but this is the very first time I have seen a rooftop field!

On the 3rd floor of Yaoyoich Honkan in Kyoto, overlooked by its restaurant is a 0.2 acre plot with a soil depth of approx 50cm. Growing Kyoto vegetables, herbs, cherry tomatoes and Strawberries, surrounded by large fruit trees and Sakura (obviously).

There was so much to admire, from the technical challenge of that much weight on the roof, the rainfall harvesting which included a suikinkutsu, the drainage of the field, the aesthetics of the farm and the trees for the restaurant... It very much feels like the end game for urban agriculture.

The original idea of the farm was to teach the staff about how the food sold in the supermarket below is grown. So that they can in turn better inform the customers. There is even a classroom on the floor below sharing space with the cut flowers and sake. Now the company has 5 farms across Japan and runs education classes for everyone including school children alongside producing high quality produce for the store.

Outside the classroom were information boards on each of the farms, and each one contained a big display of the soil from that farm and an explanation of what can be grown on each farm. As a massive soil nerd I could not have been more excited to see this. Engaging the public with growing food is hard, engaging them on soil is an impossible goal, or so I thought.

The store itself also made a big thing of seasonal local vegetables, putting them pride of place in the store with big signage. I've also included a picture of the tomatoes, that I have not edited in any way. The colours were stunning in person.

They also make beer from strawberries on one of their farms, using strawberries that aren't good enough for sale. You'll be pleased to hear I tested the beer for you, and it was GOOD. Don't say I don't work hard on your behalf.

Tomatoes, Osaka, Japan



Perfectionism. I'd read an awful lot about it, but like everything on this trip, I struggled to find it. I had started to think it was a western over exaggeration of Japanese obsession.

Then I found these boxes of 35 perfect cherry tomatoes. On a stall in a fish market in Osaka.

To put the price into context, in the poshest supermarkets, tomatoes were ¥300. These were 6x more expensive. Pretty much the same price as a main meal in a good restaurant. So we ignore the exchange rate and use context, that works out at around £20. And these are probably at the bottom end of the market for this kind of product.

Once again the language barrier defeated me. The vendor assumed that I was only interested in purchasing rather than information around growing them and basically just repeated the price at me.

Objects like this are not traditionally bought for the purchaser, but are gifts. In Japan a gift should be both beautiful and tasty. And these definitely fit that bill.

More questions than answers again. But lingering thoughts of how you get UK buyers to idolise food like this. We don't think twice about 2 bottles of whiskey having a 6x price difference, so why should food grown with such care and attention not be able to go down the same route.

Sky Farm, Osaka, Japan

When you get an invitation that says "our farm is on the 14th floor of a train station and has a tea plantation, fruit trees, a vineyard and a rice paddy", it's not something you can ignore.

Osaka Station north tower hides the Sky Farm on its roof, a certified "urban oasis" surrounded by offices and shopping centres.

Obviously I travelled to Japan at the wrong time of year so very little was growing, but this garden really grows a bit of everything. Opened in 2011 and run for primarily public benefit, they aim to show where food comes from, with a specialism in traditional Naniwa vegetables. These are vegetables that have been cultivated in Osaka Prefecture for about 100 years or whose seedlings and seeds have a clear provenance and are unique to Osaka.

This is Japanese traditional culture doing what it does best and revering and protecting its past.

Some plots in the farm are given over to local offices and schools to grow vegetables (or wine!) for themselves.

I wish I had timed it right to see the rice paddy field in its glory. But I had to make do with cherry blossoms.



I wonder why these types of public good projects aren't that common in the UK. But maybe we just don't have the right culture to appreciate it? Or maybe the countryside is just too easily accessible for most of the population.

Shigeo Maeda, Hokkaido, Japan

Next on my journey across Japan I jumped on a plane and flew north. A long way north. The island of Hokkaido is closer to Russia than Tokyo and the temperature went from +15 when I got on the plane to -8 when I got off it. Let's just say I didn't pack for this.

Shigeo is the head of Nuffield Japan, and a fascinating person to spend time with. His approach to problem solving was inspiring and the background information on Japanese agriculture he was able to provide was fascinating.

Faced with the problem of how to keep hold of his staff during the winter period when the soil freezes down to 30cm, he wanted to create a solution that provided jobs and was still profitable.

The leap from that to Japan's first microwave popcorn business is mind-blowing. Added value product was how Shigeo referred to it, but the purpose built manufacturing, storage and distribution facility say otherwise.

Innovation was all over the place, from having to store a year and a half of grain to be able to guarantee supply, to using grain that doesn't meet spec for his flour business to dry the maize. I can safely say I've seen nothing like it around the world.

And to top it all off, the Popcorn was really really good!

Hotel Wasabi, Hokkaido, Japan

Finding inspiration in a glass of milk

I'm very lucky in my Nuffield that I kept my topic wide, meaning that when I stumbled across interesting things in unusual places I could tell you about it.

At breakfast in a small hotel in Honbetsu called Hotel Wasab and it is non-homogenized milk from a single local dairy. The sign tells customers about the dairy and the cows. But the line that got me interested is:

"Enjoy the taste of milk that changes with the seasons, from summer green grass to winter hay"

Why do we not accept that the flavour of milk should change as the seasons roll round?

Who decided what all milk should taste like?



Would having single origin milk in hotels and restaurants in the UK encourage the public to think about food differently and maybe engage with production rather than retail?

More questions with no answers. What I can tell you was the hotel was lovely. Breakfast was great (if a little confusing to English taste buds) and the sushi was amazing. Made all the better by the people I was privileged to spend the evening with.

Kotani Agri, Hokkaido, Japan

This was my visit to Kotani Agri in Hokkaido Sarabetsu. Where two generations run the farm with the most machinery I have ever seen. Japan doesn't have the most developed agricultural machinery manufacturers, so almost all of this kit is imported from Europe. But that means if something goes wrong getting parts can be a 3 week wait!

How do you set up an arable farm where you know one breakdown could see you miss an entire harvest season? You have multiple machines obviously. There are 3 combines on this farm and 6 specialist headers all for 45ha. To add some UK perspective I have 1 combine on 1000ha.

It's a solution I wouldn't have thought of, but there is no denying it works!

Other highlights of this visit include a soil improvement product made out of the waste material from rape seed oil production, and a repurposed cement mixer for creating custom fertiliser mixes on farm, tailored to exactly what each field and crop needs.

I don't think my hosts quite understood my excitement at seeing a knight sprayer and a set of Cousins rolls though. I travel 1000s of miles from Cambridgeshire to find machines made on my doorstep!

Bito Laboratory, Hokkaido, Japan

Next stop in Hokkaido was to Bito Laboratory, where Mr Bito has taken the adding value to potatoes to a whole new level.

We tend to assume that the flavour profile of a potato is at its best on day one, but Mr Bitos grandmother kept saying that the last potatoes out of storage tasted better. Working with the best chefs across Japan and using his innovative (but also incredibly traditional) method of snow storage, he now supplies year old Potatoes to many high end restaurants.

If I told you that the increase in profit margin was 500%+ over selling the potatoes fresh, would you wonder why we aren't all doing it? I know chefs think differently to the rest of us, but they know what tastes good and are willing to pay for it so maybe there is something in it.



I also got to try a new product that they are working on. Cooking potatoes by a dehydration method to create a premium snack. I can say I've never had anything like it before, but would have happily eaten the whole bag. And that was before any flavours had been added.

Finally I got to see why they needed a cultivator that works a meter into the soil. Tarro, A true Japanese delicacy of a potato. My hosts kept referring to them as "sashimi potatoes" in that they were so tasty that you just sliced them thinly and ate them raw... I don't know how much truth there is to that. But considering I only cultivate 5cm of my soil, they must be worth the effort to work the other 95cm

Wimpole Estate, Cambridge, UK

The more I travel around looking at small scale farming, the more I think that maybe civilization peaked around the time of the walled garden.

This one is at Wimpole Estate, owned and operated by the national trust. Using traditional techniques and thoughts to keep the garden producing over 200 kg of fruit and veg a week, going into the on site restaurant and shop.

Organic farming, homemade compost, farm to plate, soil health, human health, food miles... Nearly everything I've thought about as I've travelled the world is on display on my doorstep.

Maybe it's just another case of history repeating

Amsterdam, Netherlands

Tulip Farm, Netherlands

Apple Vending Machine, Netherlands

Broederenklooster, Netherlands

De Groote Wei, Netherlands



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