

LAND OF OUR FUTURE



Six Agroecological farm case studies highlighting good practice and recommendations for Welsh Government





CONTENTS

1.	Executive Summary	
2.	Introduction	6
3.	Summary of findings	Ç
4.	Policy and training recommendations	20
5.	Conclusion	27
6.	Case studies	28
	Rest Farm	29
	Nantclyd Farm	45
	Glancynin Farm	57
	Slade Farm	69
	Wild Shepherd	77
	Tyddyn Teg	81

A report commissioned by WWF Cymru, written by Dr Amber Wheeler from the Landworkers' Alliance and co-ordinated by Food Sense Wales.

Thank you to all the farmers who took part and for sharing your inspirational stories with us.

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1. EXECUTIVE SUMMARY

Agroecological farming in its many forms offers a fantastic opportunity to secure high-quality food production in the heart of our communities. It can work with nature, rather than against it, to restore biodiversity and help tackle climate change, to ensure a healthy food and farming system for generations to come.

This report looks at six diverse agroecological farming case studies, a regenerative beef farm in Carmarthenshire; an Organic and Pasture for Life certified dairy farm in Carmarthenshire; an agroecological vegetable producing co-operative in Gwynedd; a Biodynamic certified poultry and egg mixed farm in coastal Ceredigion; an Organic certified mixed coastal farm near Bridgend and a sustainable shepherd partnership in the uplands of Powys. Half of the farms are owned, two are tenanted and one is run co-operatively and they range in size between 30 and 800 acres.

Although diverse, all six case study farms are unified in their mission to leave a positive legacy for future generations and to farm in a way that:

- · Encourages future farmers and provides a good lifestyle
- Works without many chemical fertilisers or pesticides
- · Recycles plant and animal waste and builds soil health
- Works with nature; stocks the right breeds in the right amounts
- Doesn't depend on externally produced feed
- · Increases biodiversity
- Mitigates climate change
- Provides quality, minimally processed nutritious food into the heart of communities and supports low-income communities
- Provides educational opportunities and jobs.

More and more farmers are seeing the benefits of agroecological approaches. But it is very difficult to make a living from producing high quality food for local markets at the same time as enhancing the environment. If the Welsh Government wants healthy and nutritious food that enhances the environment at the heart of communities across Wales, it is important that farmers are supported to do this. This support should:

- Financially reward environmental practices and results sooner rather than later
- 2. Support farm to fork supply chains
- 3. Heal the disconnect: financially reward farmers for connecting with schools and low-income families
- 4. Continue to develop horticultural support and continue agroecological farming advice
- 5. Create a new sustainable farming and horticulture apprenticeship scheme.



2. INTRODUCTION

BACKGROUND

The environmental impact of human activity on both nature and climate now threatens the survival of all life on our planet. Since 1970, we have seen a calamitous decline in global wildlife population sizes of, on average, 68%. Over the next decade, we face a triple challenge; to meet the food needs of a growing human population against a backdrop of a dramatically changing climate and a biodiversity crisis across land and sea.

Underpinned by science, WWF Cymru's strategic vision is that by 2030 nature's vital signs are improving – we will have halted the loss of nature. We are working to avoid the sixth mass extinction of life on our planet. If we are to 'bend the curve' on nature loss, we need to inspire everyone to tackle the greatest threats to nature and the future of our planet. In this fight for our world, one of WWF Cymru's key areas of focus is to accelerate the transition to a sustainable and just global food and agriculture system.

Farming is at the heart of how we use land in Wales - almost 90% is farmland. So supporting farmers to adopt climate and nature friendly farming practices is crucial to changing our future. With Wales now outside the European Union (EU), the Welsh Government is in charge of shaping farming policy and land use across the country. WWF Cymru sees this as a great opportunity to make sure future farming and food production in Wales is 'sustainable' – meaning fit for the future, good for people, nature and the planet, as well as for Welsh farmers.

To respond to the urgent climate and nature emergencies, we need a strong and ambitious new Agriculture Act for Wales; one that supports farmers and other land managers while crucially protecting the land and its biodiversity. That's how we will secure high-quality food production and thriving wildlife for generations to come.

The term agroecology usefully embraces a host of sustainable farming methods that value nature and biodiversity, animal welfare and people, and are aimed at supplying food into local communities. Organic, Biodynamic, Regenerative and permaculture farming methods could all be grouped under the term agroecology.

AGROECOLOGY - A SCIENCE, A PRACTICE AND A **MOVEMENT WHICH IMPROVES FOOD & FARMING** SYSTEMS, SUPPORTS REGENERATIVE FARMING, & PUTS PEOPLE (FARMERS, FOOD PRODUCERS, CITIZENS) AT THE HEART OF SOLUTIONS.

BENEFITS OF AGROECOLOGY BUDDION AMAETHECOLEG





Agroecology is a science, a practice & a movement which improves food & farming systems, supports regenerative farming, & puts people - farmers, food producers, citizens - at the heart of solutions.

Mae agroecoleg yn wyddoniaeth yn ddull o amaethu ac yn fudiad sy' n gwella systemau bwyd a ffermio sy'n cefnogi ffermio adfywiol ac sy n rhoi pobl. sef ffermwyr. cynhyrchwyr bwyd a dinasyddion wrth galon atebion.





















Farming and environmental protection are not opposing forces but are mutually dependent. Farming relies on nature, but nature often needs the care of farmers. As part of our work in supporting the development of the new Agriculture Act for Wales and the related Sustainable Farming Scheme, WWF Cymru has commissioned this case studies report, which focuses on regenerative farming and agroecology, and the benefits they bring.

Imagine a Land of Our Future where we restore nature, tackle climate change and secure healthy, sustainable food for future generations. For this to happen, we need a new system of agricultural payments which have agroecology at its heart; improving food and farming systems, supporting regenerative farming, and putting people – farmers, food producers and citizens – at the centre of solutions.

There is huge potential for the expansion of agroecological farming methods. Here we present that potential in the form of six diverse case studies from across the farming landscape. This is followed by a set of policy recommendations for Welsh Government.



WALES: A DIVERSITY OF FARMS

Six case study farms were chosen to represent the diversity of agroecological farms and farmers in Wales: Rest Farm – a Regenerative certified beef farm near Whitland, Carmarthenshire; Glancynin – an Organic and Pasture for Life certified dairy farm near St Clears, Carmarthenshire; Tyddyn Teg – an agroecological vegetable producing co-operative near Caernarfon, Gwynedd; Nantclyd – a Biodynamic certified poultry and egg mixed farm in coastal Ceredigion; Slade Farm – an Organic certified mixed coastal farm near Bridgend and The Wild Shepherd – a sustainable shepherd partnership in the uplands of Powys. Half of the farms are owned, two are tenanted and one is run co-operatively and they range in size between 30 and 800 acres.

The case studies show that, across the breadth of Wales and a range of farming types, agroecology is attracting future farmers and consistently delivering on increasing biodiversity, mitigating climate change, building stronger communities and delivering nutritious, sustainable food to the heart of communities. The case studies can be found in this report from page 29 onwards.

3. SUMMARY OF CASE STUDY FINDINGS

Across a range of farms and farming types, these case studies show the benefits of agroecological farming:

ENCOURAGES FUTURE FARMERS

All these farms are run by families or by partnerships of people working together, brother-brother, mother-son, mother-daughter, husband-wife and a co-operative. All of the farms show that a new generation are being attracted into agriculture by a sustainable way of farming: two brothers coming back from jobs away to work on a regenerative beef farm, a son coming back to work in a biodynamic poultry business, a daughter coming back from college to work as a sustainable shepherd and 11 new entrant co-op members working together to grow agroecological veg. Even the older couple had a young worker on the organic dairy farm who had been attracted by the way of farming. Agroecological farming is helping to bring in a new generation of farmers into an ageing sector.



WORKS WITHOUT MANY CHEMICAL FERTILISERS OR PESTICIDES

Most of our farmers don't use any chemical fertilisers or pesticides and so are resilient in the face of shortages and volatile increases in price. For vegetable growers this involves using compost, manure from livestock and green manures. For livestock farmers this involves allowing grasses to diversify and establish deeper roots in order to be able to draw up more nutrients already present in the soil. It also sometimes involves adding other grassland species such as nitrogen-fixing clovers, letting the cattle spread fertility naturally and topping with composted manure. The change isn't always easy at first, with yields being lower but, especially with grasslands, in many of these case studies yields went up with time, particularly if livestock are moved around regularly. And despite lower yields initially, in many of these case studies that did not translate to profit margins going down, as many of the farms found that they made significant financial savings by not needing to spend as much money on fertilisers and feed. The benefits of not being dependent on these off-farm inputs enable them to keep farming, whilst decreasing their dependence on often volatile global market prices, meaning more stability for their businesses. They are however, still in general, very dependent on diesel to power machinery and the cost of this has increased massively.





RECYCLES PLANT AND ANIMAL WASTE AND BUILDS SOIL HEALTH

The dairy, vegetable and poultry farms are all engaged in producing large amounts of compost from farmyard manure, woodchip from hedges, weeds and other plants. These composting systems ensure that nutrients produced on farm are not lost but are recycled and used in another area of the farm to grow food. This decreases waste and increases efficiency. These types of systems that have nutrient neutrality and focus on circular principles also offer greater stability for the farm and if applied correctly, can decrease harmful leaching of nitrogen and phosphorus into rivers. The addition of this organic matter improves soil structure, water retention and soil drainage and increases the diversity of beneficial microorganisms and other living organisms in the soil, improving overall plant health.





WORKS WITH NATURE

Most of the farms use practices that work in harmony with natural systems and in so doing are beneficial for farm, animals and wildlife alike. Cattle are moved around so that they can graze different pastures every day, they can also graze on hedgerows that have been allowed to grow tall and diversify, providing them with the opportunity to self-medicate and seek shelter from rain or sun at their leisure.

This reduces stress and provides opportunities for dung beetles and other insects to benefit from the habitat created by cow pats. Chickens in the poultry farm are also moved around in mobile chicken houses so they can eat fresh grass, which is an important part of their diet alongside grain. Sheep on the mountain are hefted, meaning that rather than being enclosed in fields, they form a natural association through the generations with an area of the hill and learn the beneficial plants in the landscape and where good grazing can be found at different times of year. The vegetable growers also use natural systems like cover cropping, under sowing, minimum tillage and maintaining natural habitats nearby which enables them to produce vegetables whilst not impacting negatively on nature.





'FIFTY HENS PER ACRE
IN A MOBILE SHED IS
THE IDEAL STOCKING
DENSITY TO PREVENT
CAUSING A BUILD-UP OF
NITROGEN POLLUTION IN
THE SURROUNDING AREA.'

NANTCLYD FARM

STOCKS THE RIGHT BREEDS IN THE RIGHT AMOUNTS

The livestock breeds that have been selected by these farmers are not ones which maximise productivity, but rather are ones that do well in the landscape in which they are farmed. The sheep on the upland farm are native breeds, used to surviving on the mountain. The dairy cattle are a breed from Germany that also suits the conditions of west Wales. In Rest Farm's case, the beef cattle come from calves from the dairy industry and the poultry at Nantclyd are dual purpose birds, bred for both meat and egg laying. Animal numbers are also kept at the optimal stocking density to be able to be fed from land on the farm, without having to buy in more feed. This reduces the degradation of natural habitats in and around the farms, reducing nitrogen and phosphorus pollution in local river systems and also reduces Wales' farming impact abroad, where much feed is grown in areas at risk of deforestation.

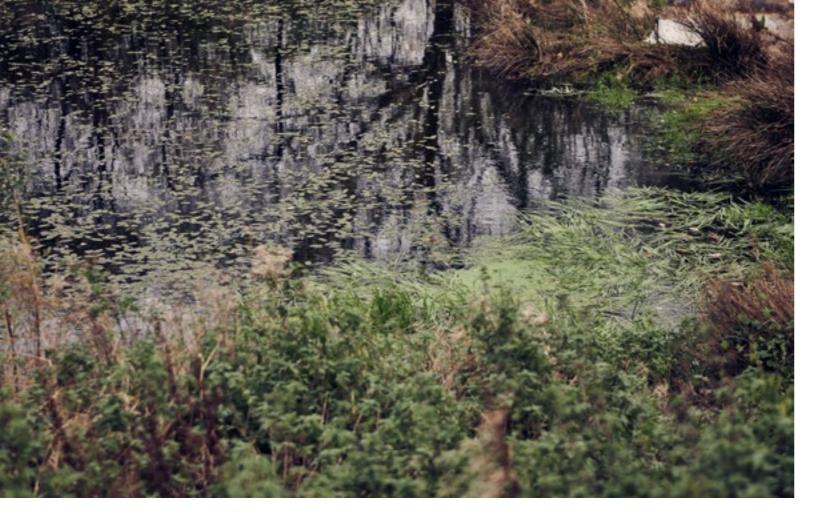
By being careful about breed and density of stock, the farmers are ensuring the welfare of animals at the same time as looking after the environment, now and into the future.

LOW DEPENDENCE ON EXTERNALLY PRODUCED FEED

All of the livestock and poultry on these farms are being fed primarily either by grass, or preserved grass (hay, silage, haylage) or grain and legumes, grown on the farms. These farmers are not dependent on external suppliers for feed and not subject to the volatility in prices from global shocks, such as the war in Ukraine and climate change induced crop shortages. This makes them more resilient to international shocks in the future. It also means that they are not importing feed from areas in the world where its production is causing destruction of natural habitats and displacement of indigenous people, such as with some soya feeds.







INCREASES BIODIVERSITY

All the farms in these case studies reported creating and leaving habitats for nature and show higher levels of biodiversity as a result; from an increased diversity of soil microbes and fungal networks to herb-rich grasses, meadows, flourishing hedgerows, trees, areas for wildlife such as scrub and bogs and ponds. Farming habits such as sowing spring oats so that there are over winter stubbles to feed the birds, also help. These measures provide food and shelter for wildlife and increased numbers of a multitude of species including skylarks, linnets, golden plover, curlew, yellowhammers, peregrine falcons, owls, frogs and toads, voles, shrews, heathers, meadow flowers, bog cotton, mosses, and much more. Many have Sites of Special Scientific Interest (SSSIs) on their farms, which they manage with care for future generations.





MITIGATES CLIMATE CHANGE

Deeper roots of grasses enable faster and greater water retention and drought resistance. This means that during long periods without rain the pastures of the livestock farmers in general were able to continue to grow well. During the drought of 2022 Glancynin Farm was not really affected and managed to cut and store a good amount of grass in the form of silage. However climate change has meant that Tyddyn Teg, a vegetable farm at the edge of Eryri (Snowdonia) National Park has still been affected by long periods without rain, although they are not in a drought prone area. Through the help of a Welsh Government horticulture grant, they have invested in a better irrigation system, so they are better able to cope with long periods without rainfall.

All of the farms show that they are sequestering carbon on their farms by planting trees and allowing hedgerows and grasses to continue to grow, composting and adding organic matter back onto and into the soil. Leaving hedges to grow for longer encourages a huge diversity of trees and plants which provides food and shelter for wildlife as well as cattle.

The peatlands that are being managed by the Wild Shepherd are particular examples of how farmers can farm and provide habitat that holds in carbon for long periods of time.

PROVIDES QUALITY, MINIMALLY PROCESSED NUTRITIOUS FOOD INTO THE HEART OF COMMUNITIES

The meat, dairy, fruit, vegetables, grain and eggs being produced by these farmers are of the highest quality and have been minimally processed, providing nutritious wholefoods. All but the cooperative vegetable farm (which only sells locally in north Wales) produce agroecological food that is sold across the UK. Beef goes to London and into the supermarket supply chain across the UK, lamb is delivered UK wide as are cheese, and grain in the form of oats and wheat. But all of these farms are making an effort to develop local sales of their food and connect to their communities, whether it be providing a much-needed farm shop where no local shop exists anymore, or providing pick up points on farm, having a presence at farmers markets or local deliveries of fresh produce, meat and eggs. Some are trialling old forms of Welsh wheat that are being milled and sold to make local bread. By doing this they are building links and supporting their local communities and helping to reconnect people to farming and the origin of good food.

SUPPORTS LOW-INCOME COMMUNITIES AND PROVIDES EDUCATIONAL OPPORTUNITIES

Slade Farm is also supporting low-income communities by offering free vegetable bags, paid for by other members who donate money to the cause, that are distributed through a local charity in Bridgend. The charity then helps to teach people how to cook the vegetables. Slade Farm and Tyddyn Teg host numerous school visits every year. Slade Farm has also set up a boot and waterproofs room and local primary school children from Barry come and visit up to six times a year in order to understand farming through the seasons. Tyddyn Teg host regular volunteering days, open days and events such as community dinners, and their farm welcomes anyone who is interested to pop in and learn more about vegetable growing. Community focused enterprises like this demonstrate the social aspects of an agroecological approach and how they can help to heal the disconnect between people and where their food comes from.



WE HAVE A STORY TO TELL

- THAT WE CAN PRODUCE
HIGH QUALITY, NUTRITIOUS
FOOD BENEFICIAL TO THE
ENVIRONMENT OF WALES AND
CONNECT PEOPLE TO WHERE
THEIR FOOD HAS COME FROM.

SLADE FARM



A GOOD LIFESTYLE WITH POSITIVE BENEFITS FOR MENTAL HEALTH

Many of the case study farmers talk about the positive mental health effects of farming agroecologically – improving wellbeing and enhancing lifestyle. Not only is this good for farmers but it is good for people they employ and many people working on the farms talked about the benefits of agroecological farming to their mental health. This helps to attract and retain new entrants.





PROVIDES JOBS AND SENSE OF PRIDE BUT SELLING LOCALLY ISN'T ENOUGH

These six farms provide employment for around 30 people including the farmers themselves. Although farming agroecologically has its benefits in terms of resilience to the increasing costs of inputs, it is still hard to earn a living from selling agroecological food. In order to be able to make a living from selling food, whilst looking after the environment, it has to be sold at a premium and the local market in Wales can only support this to a certain extent at the moment. Rest Farm who sell their meat to an ethical butcher and to Honest Burgers in London do so because they can't get the prices they need to cover their costs through selling locally only. Glancynin can't make enough of a living selling dairy products locally but by selling milk to Cenarth Cheese to be made into artisan cheese they are able to make a living.

11 vegetable producers, along with several trainees at Tyddyn Teg, are employed from the sales of agroecologically grown vegetables. This is a great achievement, but at the moment they can only afford to pay themselves £8 an hour and most of the workers manage to cope with this because they live on site and have low overheads.

Providing so many public goods at one time comes at a cost to the farmer in terms of earning a good living. Most of these farmers, like most others, are not able to pay themselves anywhere near the minimum wage and are earning well below this. They are faced with financial hardship and uncertainty, not because they are not running their businesses well, but because they do so much for so little.



'WE COULDN'T MAKE A
PROFIT SELLING OUR MILK
AND DAIRY PRODUCTS
LOCALLY BUT BECAUSE
OUR ORGANIC MILK GOES
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CHEESE IT IS POSSIBLE
FOR US TO MAKE A LIVING'

GLANCYNIN FARM



COMMITTED, ENTERPRISING, INDEPENDENT AND INSPIRING

These farmers show great tenacity and commitment to the cause and have got on with agroecological farming approaches because they believe it is the best thing to do. This 'taking control' gives them an enormous sense of pride and they express gratitude for being able to do what they do. But farming in this way isn't easy and has to be inspired, not forced.

'YOU HAVE TO BE THE CHANGE.' WILD SHEPHERD

In conclusion, more and more farmers are seeing the benefits of agroecological approaches. Embedding these principles across the food system, from farm to fork, is good for nature and for climate, whilst at the same time producing fresh, healthy, local food. But it is very difficult to make a living from producing high quality food for local markets at the same time as enhancing the environment. If the Welsh Government wants healthy and nutritious food that enhances the environment at the heart of communities across Wales, it is important that farmers are supported to do this. Here are some recommendations of how it could be done.

4. FIVE POLICY RECOMMENDATIONS:

1. Financially reward agroecological practices and results sooner rather than later

Most of the agroecological farmers from these case studies do not rely on subsidies for their income and do not want to, but rather are trying to run profitable businesses. However, it is tough to do this whilst selling into local markets and some are considering how much longer they can carry on. Some have accessed grants for environmental and habitat projects in the past but there is a need for more support. Most agree that being rewarded for environmental services would strongly help.



'IF WE CAN'T SUSTAIN A LIVING
THEN OUR EXCITEMENT DWINDLES.
FARMING IS A PRIVILEGE. WE LIVE
IN A BEAUTIFUL PLACE, WE ARE
OUR OWN BOSSES. WE CAN BE
INNOVATIVE AND TRY THINGS OUT
WITH LOCAL COMMUNITIES AND
SCHOOLS. BUT OUR COMMUNITIES
NEED TO SURVIVE AND HAVE ASSETS
AND UNLESS THEY HAVE WELLFUNCTIONING FARMS AND FACILITIES
IT DEGRADES THOSE COMMUNITIES.
WE WANT TO THRIVE AND BY DOING
SO THE COMMUNITY WILL THRIVE.'

SLADE FARM

The case studies highlighted a number of examples of key environmental services that farmers should be rewarded for in the Sustainable Farming Scheme. A non-exhaustive list of these environmental services includes the following:

A Biodiversity, nature and climate enhancing practices

This could involve being financially rewarded for allowing grasses to mature and become herb rich, composting and adding organic matter back onto and into the soil, increasing diversity of soil microbes and fungal networks, establishing meadows, allowing hedgerows to flourish, planting trees and providing areas for wildlife such as scrub, bogs and ponds, sowing spring oats so that there are over winter stubbles to feed the birds, cover cropping, under sowing and minimum/no tillage.

B Farming in a way that does not rely on the use of artificial fertilisers and efficiently manages nutrients to support a farmer's bottom line and protect the environment

Farmers should be rewarded for measures that efficiently manage nutrient use and ensure that nitrogen and phosphorus are not negatively impacting air and water quality. Effective reduction measures need to focus on, for example, livestock diets, health and breeding; livestock waste management; nutrient management plans and reducing nitrogen and phosphorus losses from land. On farm measures to reduce nitrogen emissions include, for example, using legumes for nitrogen fixation, moving cattle to minimise overgrazing and maximise grass growth, optimally stocking and establishing more permanent non-crop vegetation in the landscape to supplement livestock diets and provide habitat. In this way farmers can be helped to move away from dependence on fertilisers and become more resilient.

C Farming in a way that does not rely on imported livestock feed linked to habitat destruction

Instead of being reliant on imported feed such as soy, which may be linked to habitat destruction overseas, farmers should be rewarded for producing their own feed such as preserved grass (hay, silage, haylage) or grain and legumes grown on farm, as long as that feed has positive impacts for climate and nature. Farmers should prioritise animal feed sources not destined for direct human consumption such as grass, food waste, and food industry or agricultural by-products instead of cereals or soy. This will help to increase resilience to external shocks and mitigate volatility caused by inflation of costs outside the control of the farm. This will help to increase resilience to external shocks and mitigate volatility caused by inflation of costs outside the control of the farm.

However, it is critical that processes for payment for environmental services are fair and easy to use and that there is flexibility. Many times in the past, forms and processes have been so complicated that they have put people off. These need to be simplified and streamlined if they are to be taken up.

Most of these farmers didn't have a problem with a stipulation of 10% tree cover as a requirement of the universal part of a Sustainable Farming Scheme, as most have that amount or more of tree cover on their farms at present. What they did find problematic was an inflexible approach that didn't take into consideration the differences across farms that was too prescriptive.

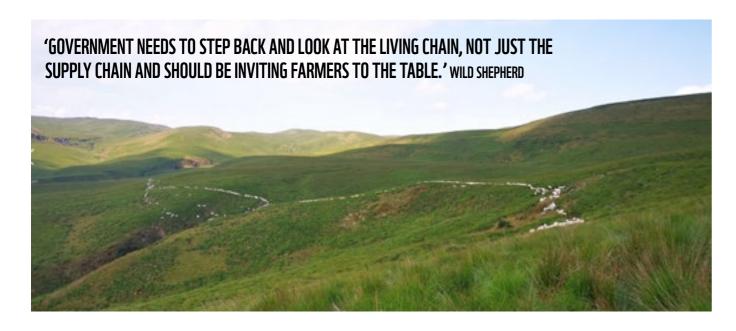


'I DIDN'T CLAIM A SINGLE
FARM PAYMENT AS IT WAS
ADMINISTRATIVELY TOO DIFFICULT
AS WHAT I WAS DOING DIDN'T FIT
INTO THE BOXES.' NANTCLYD FARM

2. Support Farm to Fork supply chains

UK Government trade deals with countries have resulted in foods being sold in the UK at lower prices than UK foods, such as with New Zealand for lamb. This has damaged farmers' confidence that governments are working in the interest of supporting the UK farming system. Welsh Government has the opportunity to send a clear message to farmers that their produce is valued by buying agroecological produce in the public sector; for example, for primary schools.

Even though public sector food sales are a small proportion of overall food sales, they nevertheless represent an opportunity for government money to show solidarity and help farmers by providing them with additional markets and offering them an opportunity to showcase Welsh farming produce. Welsh Government should support the development of mechanisms that enable Welsh farmers to sell their produce into the public sector, like those trialled in Food Sense Wales' Courgette pilot¹, by establishing a Sustainable Supply Chain Investment Scheme (SCIS). This would enable the public sector to source foods from agroecological producers by paying for the price difference between the cheapest food that can be bought and agroecologically produced food from local Welsh farmers.



3. Heal the disconnect: financially reward farmers for connecting with schools and low-income families

Two out of six of the case study farms hosted regular farm visits from school children and these showed multiple benefits in terms of creating an understanding from an early age of food production and the impact it has on the environment. However, hosting these agroecological farm visits takes time and resources, which these farms do not really have, and if this sort of practice is to be encouraged going forward, good practice should be shared and visits should be rewarded, for instance by receiving funds from a funding pot allocated for school farm visits.





There is also the opportunity to build on the TGRAINS project² and Slade farm's work in linking low income families with agroecological and community supported agriculture schemes. This could be done by offering small grants to farmers or charity partners, of up to £5000, that could be accessed quickly to help them establish social innovation that supports food insecure households to access agroecological produce.

4. Continue to develop Horticultural support

Fruit and vegetable production is unique to other forms of farming, in that it usually occurs on small land areas. This means that it doesn't benefit from subsidies that are allocated on the basis of land area.

Agroecological fruit and vegetable farms offer huge crop diversity and provide muchneeded healthy vegetables to surrounding communities. And yet it is still very difficult to make this pay and businesses thrive. That is why the Welsh Government should continue to have special horticulture schemes that reward agroecological farming practices.



'WHILST A FARM SUCH AS OURS PRODUCES £80,000 WORTH OF **FOOD (SPECIFICALLY VEGETABLES,** WHICH MOST PEOPLE AGREE WE NEED TO EAT MORE OF), ANY **SUBSIDY PAYMENT WE COULD CLAIM WOULD BE TRIVIAL BECAUSE** WE DO THIS ON ABOUT 2.5 HECTARES OF CULTIVATED LAND.

TYDDYN TEG

Horticultural support could be broken into the following six areas:

1. Horticulture Development Scheme Development

TYDDYN TEG

The Welsh Government Horticulture Development Scheme for grants for infrastructure is very welcome but needs improvement if it is to be of more use to producers who have very little spare capital. There are three main things that should be improved:

- 1. Reduce the overly onerous and complicated application process
- 2. Increase the percentage of the cost that will be covered for the grant. At the moment this is only 40% and veg producers do not generally have the capital to pay for 60% of the cost of a major piece of infrastructure
- 3. Remove the requirement for upfront infrastructure payment. This could all be done by either improving the current application system or employing a third party to manage the process as suggested by Food Sense Wales in the original Horticulture Small Grants Pilot³.

2. Sustainable Supply Chain Investment Scheme (SCIS) roll out

Food Sense Wales' Courgette Pilot showed that there is an easy mechanism that can enable agroecological veg producers to supply into schools in Wales via wholesalers and that this provides steady markets for the businesses. This mechanism requires an investment in the extra it takes for the schools to purchase agroecological vegetables to be covered by a Sustainable Supply Chain Investment Scheme (SCIS). Phase two of the pilot is currently underway and Welsh Government should look to the results in consideration of a future roll out.

25 LAND OF OUR FUTURE AGROECOLOGICAL FARMING: CREATING A FUTURE WHERE PEOPLE AND NATURE THRIVE

3. Housing and permitted development for horticultural enterprises

Agricultural holdings over five hectares are allowed to put up some farm buildings for the purposes of farming (they have permitted development rights), whilst those under this size have none. Young, new entrants to the horticulture sector are likely to be on less land than this, so will face uncertainty as to whether they will be allowed to build the infrastructure that is essential for a viable small farm. These entrants are also unlikely to be able to afford to buy or even rent a house in a rural area with the income they are realistically likely to receive from a fledgling vegetable business. This is partly addressed by the One Planet Development (OPD) policy in Wales, but the large initial and ongoing administrative burden of an OPD planning application undoubtedly puts off people who might otherwise start good farm businesses. This is why it is really important, if horticultural businesses are to be encouraged, that the housing and permitted development situation is addressed. Horticultural enterprises, on establishment, should have permitted development for polytunnels, a packing shed and a temporary consent for a caravan/wooden cabin or similar.

4. Continue to develop horticultural support and agroecological farming advice

Tyfu Cymru has offered excellent training support for the commercial horticulture sector in Wales and its work should be continued through Farming Connect in order for the sector to continue to be supported and grow.

5. Create a new sustainable farming and horticulture apprenticeship scheme

Building on the findings of Wales Future Farmer Training Programme⁴ delivered by Lantra and the Landworkers' Alliance, develop a two year apprenticeship scheme for agroecological horticulture and farming. This would ensure new entrants are encouraged and helped into agroecological farming with sufficient training and ready to run their own enterprises or be employed as skilled workers. The benefits of combining horticulture and sustainable farming is that the apprenticeship would have year-round training opportunities rather than seasonal, mainly during the summer and autumn months, for horticulture alone.

6. A dedicated horticulture public goods scheme

Include a horticulture public goods scheme within the Sustainable Farming Scheme. This should include payments for environmental and social benefits that are achieved by using specific growing methods and business models. These benefits would align with those that the Welsh Government is seeking to achieve through the Sustainable Farming Scheme, but crucially the unit basis for payment would account for the higher cost and income per hectare of horticulture, and vary depending on what determines the cost of delivery and level of benefit. For example, practices such as mulching for weed control, retaining organic matter and avoiding pesticides, would be paid on an area basis, participation in certification schemes would be rewarded with a payment for administration based on estimated additional work hours needed and CSAs, which bring social benefits, would be rewarded on a per member basis. Growing the Goods⁵ is an example of a similar proposal being trialled in England for DEFRA's Test & Trials.

³ https://www.foodsensewales.org.uk/app/uploads/2022/03/FSW-Business-Support-Grants-Pilot-21-Final.pdf

⁴ https://landworkersalliance.org.uk/traineeship/

⁵ https://hollyfphelps.wixsite.com/growingthegoods/copy-of-wm3



5. Continue Agroecological Farming Advice and create a Sustainable Farming and Horticulture Apprenticeship scheme

There is much information out there for farmers on agroecological farming methods and many opportunities for them to learn online and from videos. Farming Connect Horticulture (formerly Tyfu Cymru) offer great opportunities for learning and should continue to be funded in order to provide ongoing advice and support to farmers to help them transition to agroecological practices. More can be done however with teaching sustainable farming practices in agricultural colleges and more funding could be made available for peer-to-peer support rather than consultancy led support. Given the scale of the climate and nature crises that we face, we need many farmers to be supported to transition to agroecological farming methods as quickly as possible, and the level of support provided should reflect this urgency.

In the first few years of transitioning to an agroecological system, yields are potentially lower, and there are costs associated with the transition (such as the costs of training, infrastructure, new breeds). When the farm system is adapting to a new way of farming, that gap needs to be filled with financial support, so farmers feel comfortable taking the risk.

A two year funded sustainable farming and horticulture apprenticeship scheme would be a great facilitator to help new entrants into farming and horticulture sectors (see horticulture support box).

5. CONCLUSION

Agroecological farming in its many forms offers a fantastic opportunity to secure highquality food production in the heart of our communities. It can work with nature, rather than against it, to restore biodiversity and help tackle climate change, to ensure a healthy food and farming system for generations to come.

Although diverse, all six case study farms are unified in their mission to leave a positive legacy for future generations and to farm in a way that:

- Encourages future farmers and provides a good lifestyle
- Works without many chemical fertilisers or pesticides
- · Recycles plant and animal waste and builds soil health
- Works with nature; stocks the right breeds in the right amounts
- Doesn't depend on externally produced feed
- Increases biodiversity
- Mitigates climate change
- Provides quality, minimally processed nutritious food into the heart of communities and supports low-income communities
- Provides educational opportunities and jobs.

Like other farmers, agroecological farmers take pride in what they do, but many are not able to earn anywhere near a minimum wage. They are faced with financial hardship because the current system does not work to incentivise the right farming practices.

If the Welsh Government wants healthy and nutritious food that enhances the environment at the heart of communities across Wales it is integral that farmers are supported to do this. This support should do five things: financially reward environmental practices and results sooner rather than later, heal the disconnect: financially reward farmers for connecting with schools and low-income families, support farm to fork supply chains, continue to develop horticultural support and continue agroecological farming advice as well as creating a new sustainable farming and horticulture apprenticeship scheme.

6. CASE STUDIES

- 1 REST FARM
- 2 NANTCLYD FARM
- 3 GLANCYNIN FARM
- 4 SLADE FARM
- 5 WILD SHEPHERD
- 6 TYDDYN TEG



SUMMARY

Aled farms in partnership with his brother Iwan in South West Wales. They are pioneering grassland managers who farm regeneratively on 500 acres producing quality beef from calves from the dairy industry. The meat is supplied direct into HONEST burgers and two ethical butchers in London and into the local community via a meat box scheme (along with lamb which goes into the conventional supply chain).

Aled and Iwan won beef farmer of the year in the Farmers Weekly awards in 2021 for their pioneering, profitable, with nature, beef farming. Aled lives and works on the farm with his wife and young family and Iwan lives in Cardiff and works in London.

THE THREE KEY CENTRAL PILLARS OF THEIR FARMING APPROACH ARE LEGACY, LIFESTYLE AND PROFIT.





Before they took it over, Rest farm had been run as a fairly conventional dairy farm. From the beginning the brothers wanted to manage it in such a way as to mitigate the notorious volatility of farming. They wanted to cut down on inputs, optimise stocking rates, rather than maximise. They wanted to develop a stable farming system that could be replicated year on year rather than moving from boom to bust. They decided to base their farming on three pillars:

LEGACY LOOKING AFTER THE ENVIRONMENT AND THE COMMUNITY

LIFESTYLE NOT WORKING MORE THAN A 50 HOUR WEEK ON AVERAGE, HAVING EVERY OTHER WEEKEND OFF AND HOLIDAYS

PROFIT MAKING A GOOD LIVING GROWING **QUALITY FOOD**

Their farming practices have significantly enhanced grass growth, soil health, drought resistance, biodiversity on the farm and reduced the carbon footprint.





CLIMATE

The drought of 2018 made them think more carefully about grassland management and root systems and soil. They realised that some of their grasses had very shallow roots and that this was not good for drought resistance, so they worked on their grassland management.

Early on they did a masterclass course in precision grazing and then invested quite heavily in infrastructure. They GPS mapped the whole farm and used it to plan out grazing management with small cells of 0.5 hectares, with semi-permanent electric fences and also roadways.

Grazing is now planned out a month in advance which means that anyone can move the cattle and fences according to the plan, greatly removing stress. Cattle get moved daily and grass is given a long resting period 30-100 days recovery.

'IT MIMICS MORE NATURAL GRAZING SYSTEMS, LIKE BISON IN THE WILD, WHERE THE CATTLE MOVE ON WHEN THEY HAVE FINISHED GRAZING AN AREA.'







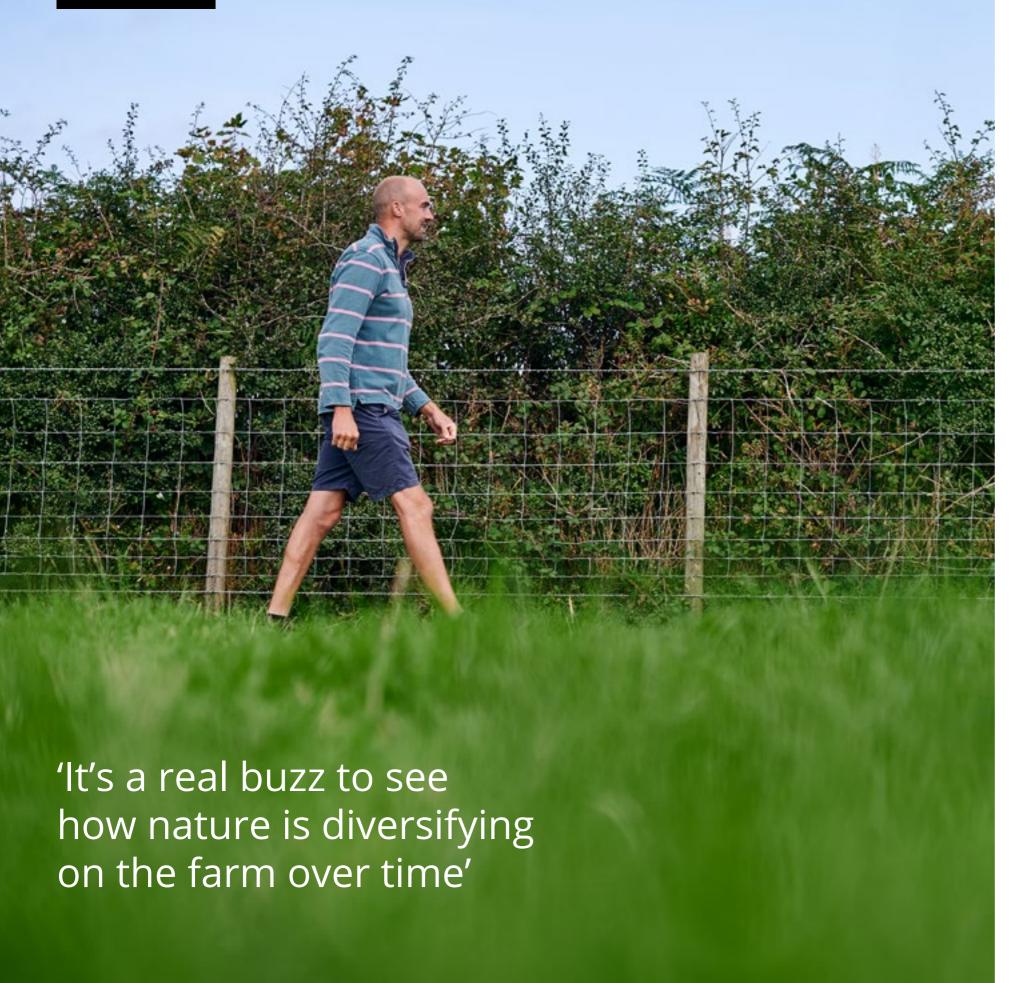
'We have 50 conversations a day about grass... we are obsessed'

Every Monday they measure the grass length and dry matter, and plan accordingly. 'This means we can have an extended grazing season with cattle housed for a minimal time of 90-100 days making the most of the grass grown on site.' In 2019 they had 15 tonnes of dry matter grass and utilised about 70%. By 2021, due to improved management, utilisation had increased to over 85%. The aim is to get cattle using as much of the grass in the spring and summer as possible and to cut down on concentrates (containing feed grains like maize, soybeans, oats and barley).

Roots across the farm are now much deeper, pulling in more nutrients. They have trialled direct planting and have fields with a variety of plants, chicory, plantain, timothy, red and white clover and some birdsfoot trefoil. They now use no nitrogen fertilizers on grazing ground at all.

Diversity in the grassland, as well as deeper roots, allows much faster water infiltration (some fields have infiltration rates of around 10 seconds compared to up to 45 minutes for less regeneratively farmed fields) and retention of water. During the drought of 2022 their grass production was not really affected.





CERTIFICATION

'The terms regenerative or agroecological get thrown around but often without the evidence to back them up.'

Aled and Iwan were keen to evidence what they do and so when an opportunity came up to be involved in an international pilot on certification with 'A Greener World (AGW)' they took it. They are now 'Certified Regenerative by AGW' and have been through a thorough holistic certification process that looks beyond soil carbon to healthier food, biodiverse systems, clean air and water, good working conditions and animal welfare. Critically the certification involves an ongoing plan and annual auditing. It gives them and their suppliers the confidence that they are doing the right thing.

BIODIVERSITY

'As part of the biodiversity auditing we were visited by an ecologist who was so excited to see skylarks and linnets.'

Aled felt quite embarrassed that he didn't know more about the birds on the farm but pleased by what the ecologist found as part of the auditing process. 'The ecologist put the increased birdlife down to high levels of invertebrate life and berries in the hedges which are cut infrequently.' The hedges have increased levels of biodiversity and not negatively affected productivity and have acted as shelter for the cattle during hot periods.



FOOD

Through grassland work they got to know the HONEST burger company, based in London, who were looking to invest in developing a more sustainable beef supply chain. They started with a small-scale trial and having successfully developed the relationship now supply weekly. Chefs from HONEST burgers have been down to the farm to see where the meat comes from.

The Regenerative label gives the beef a premium. They would love to sell to local butchers but at the moment they can't get the premium they need to do this. All the lamb goes through conventional supply chains.

Five months ago, they started selling their beef direct into their community via a new meat box scheme which is going well with around 30 customers a week and bi-monthly deliveries. They are working with local chefs, through Cywain to develop four different recipes that will go into the meat boxes periodically, adding to the variety.

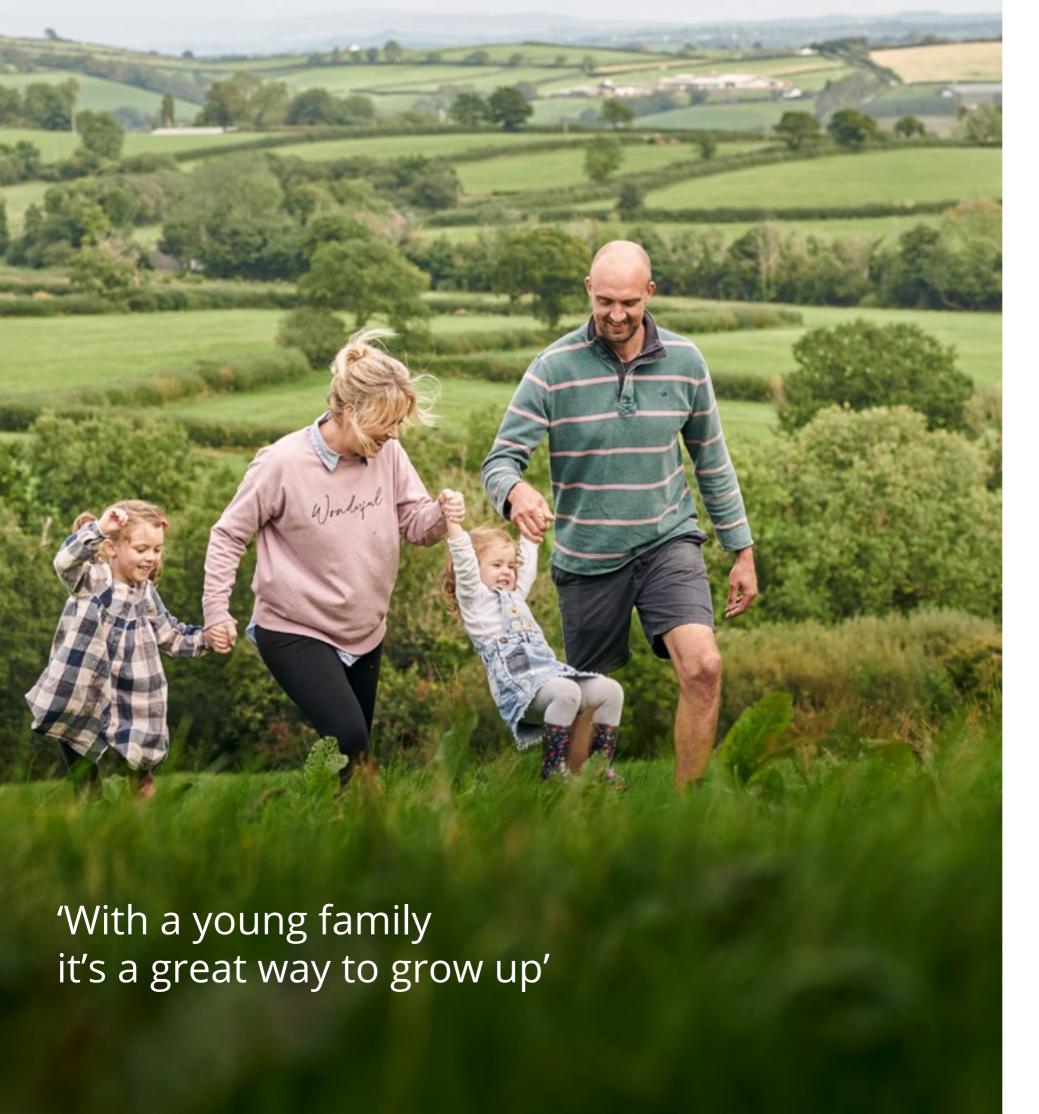


COMMUNITY

The farm is increasing accessibility of regeneratively farmed meat in their local area and the doorstep selling is going well. Delivery involves a whole family outing with the children coming along too so it's very rewarding. 'The people's engagement is very interesting'. They have come to realise that uncertainty about cooking is a barrier to people buying their meat and so '.. are starting to think about videos on how to prepare certain cuts of meat like brisket as people don't always know how to cook it.'

They receive many farm visits from farming groups and students wanting to learn about regenerative agriculture but so far haven't hosted events open to the community, though they are keen. In the future they hope to do school visits and possibly link with the school curriculum.





LIFESTYLE

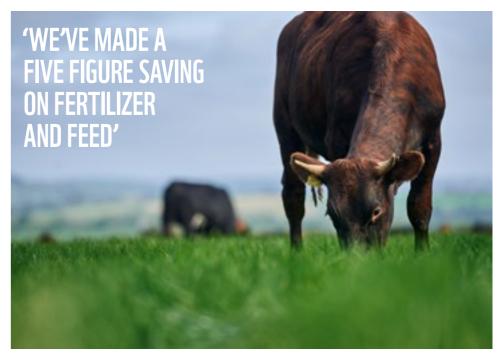
Aled really loves what he does and says, 'Lets put it this way, Monday mornings don't feel like Monday mornings anymore.' 'Mae gen i falchder'.

They work around a 50 hour week and Aled does manage to have every other weekend off and holidays. Llifon, who works on the farm, was able to take a holiday to Canada recently showing that they are achieving their lifestyle ambition.

'Getting the lifestyle right is really important to get people into the sector'. They see this as a key contributor to a successful business and attracting and keeping people.

PROFIT

Financially they are a profitable beef unit that offers quality employment and keeps a family going.



The increasing cost of fertilizers and other inputs due to the pandemic and the war in Ukraine has not really affected the business. Three years ago the farm used around 50kg/Ha of nitrogen and a small amount of purchased feed but now, because of grazing management, they use no fertilizer at all and very little feed which has made a huge saving on the farm. 'Calves are fed until they are 120kg and then they go into entirely grass. It's a massive saving on feed.' They found it hard to buy red clover seed this year as more farmers, incentivised by the increased cost of fertilizer, started to introduce these nitrogen fixing plants.

INSPIRING OTHERS

'I TALK TO A LOT OF FARMERS AND I SAY IT IS ALL ABOUT THE MINDSET. THE BIGGEST BLOCKER IS ME.'



'IT'S A QUICK JOURNEY IF YOU WANT TO DO IT BUT YOU CAN'T JUST GO COLD TURKEY AND EXPECT TO GET GOOD RESULTS. IT TAKES CAREFUL THOUGHT AND PLANNING BUT ONCE YOU HAVE DONE THAT A LOT OF THE STRESS IS TAKEN OUT'



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SUMMARY

Liz farms in partnership with her son Oliver at Nantclyd farm in Ceredigion. She is a first-generation farmer and self-starter who, over 30 years, has developed a highly successful and sustainable mixed farm business supplying eggs, poultry, fruit and veg, grain, lamb and beef. They sell eggs locally and nationally, meat and veg boxes from the farmgate, attend farmers' markets and supply local shops along the Ceredigion coast road and in so doing, provide employment for three people.

Their farm is certified biodynamic by Demeter assuring that they are striving for health and resilience on their farm, whilst nourishing the soil, protecting the environment, respecting the well-being of their animals and producing nutrient dense and nutritious food. They have two sites, Nantclyd, a wetter site of 30 acres near Aberystwyth where chickens are kept and Ffrwdwenith Isaf, a drier site of 55 acres, near Aberporth where grain and legumes are grown for animal feed, fruit and veg for the local market, and cattle and sheep reared for meat and to add fertility.

They farm holistically, working with nature and aim to be a closed system as much as possible, meaning they minimise the amount of external inputs and produce most of what they need on their farm. They do not import animal feed such as soy, which may be driving deforestation overseas, and instead feed their chickens grain grown on the farm and sheep and cows grass grown in their fields. Compost is produced on farm which is used to grow fruit and vegetables. Biodiversity is actively encouraged as part of their farming system and they proudly won the Joan Loraine Award for Nature Conservation and Organic farming in 2002, which helped them to create a pond for wildlife.





'WE ADOPTED BIODYNAMIC PRACTICES AS A MEANS OF **FARMING HOLISTICALLY - IT WAS** A SYSTEM OF FARMING THAT DID NOT DEPEND ON PURCHASING INPUTS. WE STARTED WITH NOTHING AND WE HAD TO LOOK AFTER THE LAND THE BEST WE COULD AND WE FOUND WE **COULD DO THIS BY FARMING** BIODYNAMICALLY.'

JOURNEY

Liz grew up on the outskirts of Manchester, where a love of horses took her on to local dairy and livestock farms. She went on to study agriculture in Aberystwyth and spent 10 years milking and working on conventional farms in Wales.

'DURING THAT TIME I WITNESSED THE DEGRADING OF LAND AND HEALTH OF ANIMALS AND THE GROWING DEPENDENCE OF FARMERS ON THE LAYER OF AGRI-BUSINESS THAT HAD GROWN OVER THEM. IT FELT TO ME LIKE FARMING WAS MOVING IN THE WRONG DIRECTION.'

Finding the most reasonable parcel of land she and her partner purchased Nantclyd, on the north side of the Ystwyth valley, 400ft above sea level just south of Aberystwyth. The intention was to farm organically but as the years progressed, they found that organic wasn't enough to achieve the aims they had set themselves of farming with nature, and they began to adopt biodynamic methods with their focus on putting the vitality back into the soil and acknowledgement of the interconnectedness of everything.

The first thing they did was to set about planting trees around the perimeter with a Woodland Grant. They also fenced the farm, put in a borehole, made a gateway off the road, and erected a shed and caravan. They began by growing strawberries and selling them both locally and to *Rachel's Organic* dairy, and they have grown strawberries every year since. Nantclyd started to evolve, and they put up a polytunnel to extend the growing season. Now, half an acre of polytunnels are managed as no till, with much inter-cropping and seed growing.







To achieve a regular weekly income for the family, two sheds of laying hens arrived in 1999. They built up the poultry business to a total of 1000 hens, though now they have scaled back to 600, which they believe is the maximum number of chickens that can be kept on their holding without the build-up of excess nitrogen affecting the local area. The chicken manure is composted along with other organic matter.

'WE ADDED THE POULTRY 20 YEARS AGO AS A MEANS OF CONNECTING OUR LIVESTOCK PRACTICES INTO A HOLISTIC SYSTEM.'

When Oliver came back home wanting to farm in 2012, they expanded and bought Ffrwdwenith Isaf with a loan, made possible by the profits from the egg and chicken businesses. This now is the home of a flock of around 20 Dorset breeding ewes and a small herd of Hereford beef cattle, all 100% pasture fed. The sheep help manage the wheat fields and the grazers in general help build fertility. There are also two acres of field with strawberries, potatoes, roots, squash and brassicas as well as arable crops including wheat, peas and naked oats for poultry feed. The farm is largely self-sufficient in poultry feed and they have also grown a small acreage of Hen Gymro, or 'Old Welshman' wheat.



FOOD

The main output of the farm is eggs sold to local shops but eggs are also sold outside of Wales via Organic Farm Foods then Organic Fresh Food Co., Black Mountain Foods and more recently Abel & Cole. They also sell chicken meat. They sell around 200 dozen boxes of eggs a week and 50 cockerels a month for meat. They also sell 100% pasture fed lamb and beef in local meat boxes from their Dorset sheep and Hereford cattle. Boxes are sold from the farmgate along with supplying local shops in Aberystwyth and along the Ceredigion coast road.

'SELLING DIRECTLY AT THE MARKETS PROVIDES AN OPPORTUNITY TO TALK TO PEOPLE ABOUT THE WAY WE FARM. IT'S IMPORTANT PEOPLE UNDERSTAND ABOUT THE FOOD WE GROW.'

Their fruit and veg are sold at the farm gate, through veg boxes and at the weekly St Dogmaels farmers' market. The Hen Gymro or 'Old Welshman' wheat grown this year went to the local flour mills to be made into flour and bread. In order to communicate about the food they produce they write a weekly newsletter for customers as well as talking to people at the local farmers' market.



'EVERYTHING IS CHANGEABLE SO YOU HAVE TO BE FLEXIBLE. IT'S WHY WE HAVE **DIVERSIFIED AND ARE DOING** MORE DIRECT SELLING.





CLIMATE AND NATURE

Part of the Ffrwdwenith Isaf land near Aberporth is falling into the sea so Liz and Oliver are keenly aware of the impacts of climate change. Their main approach to climate change mitigation is to farm holistically and with nature, with as little external inputs as possible. They plant trees and create habitats, reduce dependence on inputs by growing feed on the farm and adopt efficient systems. They also recycle nutrients by composting and supplying food locally.







Since taking on the farm, they have planted over 3000 trees from seeds they have gathered themselves. They believe trees play an important role in building the fungal network in the soil, which helps rebuild fertility, enabling nutritious food to be grown long into the future. Nantclyd now has around 20% woodland cover and is noisy with birdlife. The coastal site of Ffrwdwenith Isaf provides habitat for declining species such as skylarks and important hunting ground for keystone species like peregrine falcons.

The grasses are never grazed too short but are instead paddock grazed for four to five days and then the fields are rested for four to six weeks, depending on time of year. This system allows grass to regrow, locks carbon into the soil and is good for animal health too.

In 2008, Nantclyd began to rear their own replacement hens and they have now built up their own breeding flock. Their hens perform differently to the hybrid commercial hens being slightly slower coming into lay and with smaller sized eggs, that are laid for a longer period. They do not have the peak lay of the commercial hens but instead produce a steady 70 - 80% over the year, depending on the season and weather. This reduces the stress of a high peak egg production at 25 – 40 weeks of the more commonly used commercial breeds. At the end of lay the hen carcass weights are 1.7kg - 2.2kg at 2.5 years of age. They are healthy and well feathered and easy to manage hens, although care needs to be taken to avoid broodiness. The birds are fed from home grown grain and pasture and require less protein in their diets which therefore reduces the requirement for external feed. The hens are housed in 150 moveable hen sheds so that the hens benefit from fresh pasture.

'A CLOSED FARMING SYSTEM **BRINGS RESILIENCE TO THE FARM** AND HELPS US GREATLY.'

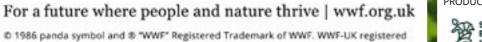
The farm is biodynamically certified and therefore carries out soil sampling regularly. They use a composting machine to make aerobic compost in long rows called 'windrows'. This vastly improves the nutrient cycling on the farm making better use of the poultry manure. They gather together as much diversity of ingredients, all from the farm, and layer them into the row – woodchip, waste, poultry, cattle, horse muck, cut docks, thistles, nettles and grass. The row is mixed and turned when it has heated to 65°C (this kills pathogens and weed seeds) and then turned again five to ten times over the course of its life. They add the biodynamic preparations to the compost rows which are then stacked on to the yard to mature and evolve. Compost analysis has revealed a broad diversity and high population of microbial soil life such as fungi, bacteria, protozoa and nematodes. This compost is then used on the farm to grow produce.



'I AM JUST A CUSTODIAN OF THE LAND. FOR ME IT'S ABOUT LEAVING BEHIND SOMETHING BETTER THAN WE FOUND ...
SOMETHING THAT WILL FEED FUTURE GENERATIONS ...
IT'S ABOUT THE CHILDREN AND THE FUTURE.'

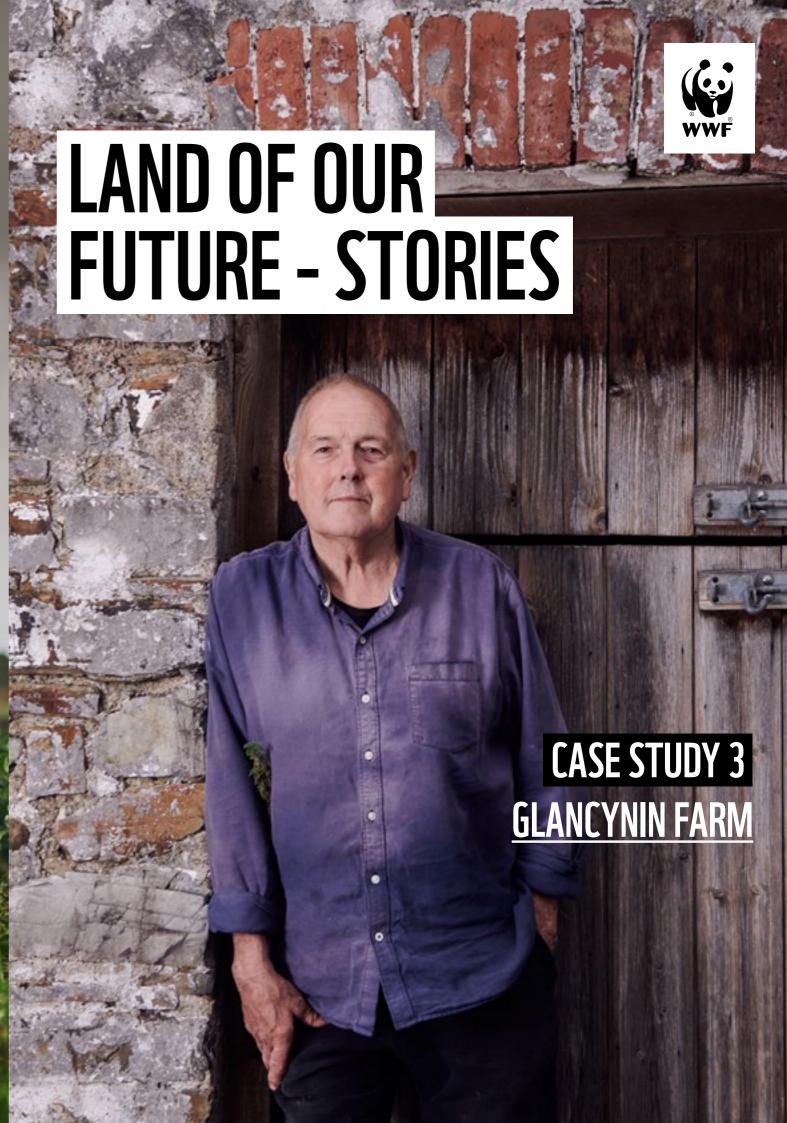


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PHOTOS: © ALED LLYWELYN / WWF CYMRU





JOURNEY

Elfyn came from a farming background but pursued a career in engineering before returning to farming 25 years ago at almost 50 years old. Elfyn and Rhian wanted a lovely place to live in addition to creating a thriving habitat for wildlife.

They began farming by relying on pesticides and synthetic fertiliser that are harmful to nature, but when they realised it wasn't working for them, they moved over to organic methods which work with nature and they haven't looked back.

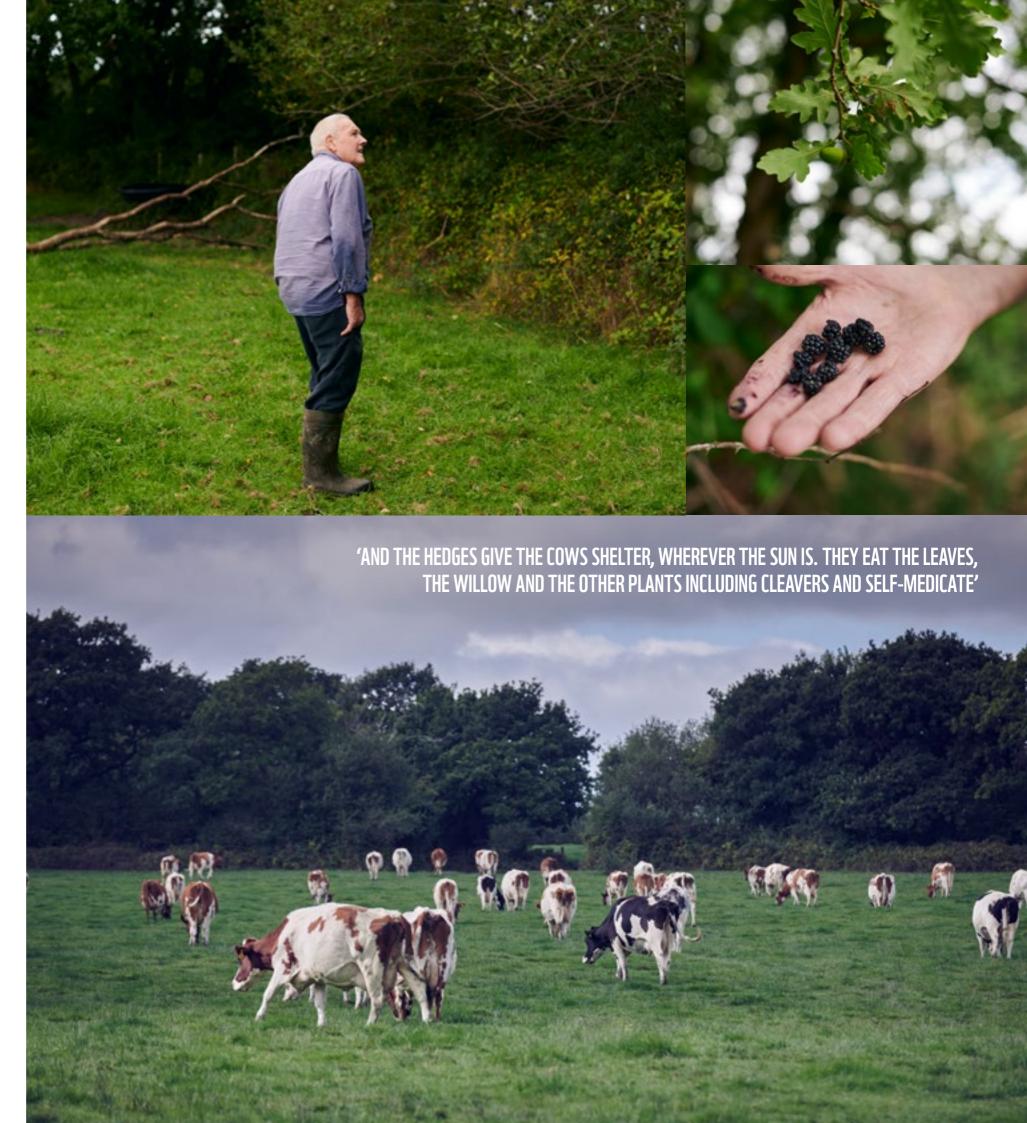
It wasn't easy for them to convert to organic as things didn't grow as quickly to start, but things soon improved as roots got longer and the grass became stronger by pulling more nutrients, such as magnesium, from the soil. With increased quality of grass, and diversity of plants, Elfyn and Rhian saw an increase in biodiversity and an improvement in the health of their cattle.

'IT WAS HARD TO CONVERT, NOTHING GREW FAST. BUT AS THE LAND HAS SETTLED THE GRASS HAS DONE ITS OWN THING. WHEN FARMERS USE ARTIFICIAL FERTILISERS ON GRASS IT DEVELOPS SHORT ROOTS WHICH DON'T SEARCH FOR NUTRIENTS. BUT HERE THE ROOTS GO DOWN DEEP WHERE THEY ACCESS MINERALS AND OTHER ELEMENTS WHICH MAKES THEM STRONGER, AND KEEPS THE CATTLE HEALTHY.'

Glancynin is now a haven for wildlife as well as being a successful working dairy farm which also produces and sells dairy products though partnering with local businesses and the wider community.

In doing this they also created a better environment for their livestock. The cattle are healthy and content with plenty of shelter, herbal rich pastures and hedgerows they can browse according to their dietary needs.





NATURE

The farm is Pasture for Life and Soil Association certified and Elfyn is passionate about the role of nature in farming. Farmyard manure is the only fertiliser used on the soil and cows are grass-fed with no dependence on imported soy feed to supplement their diet. The land has not been ploughed since the 1990s resulting in improved soil health as it retains its natural structure, organic matter, microbes and organisms which help make it fertile.

Undisturbed soil also locks in carbon. By working with nature through using an agroecological approach Elfyn can successfully harness the soil's natural fertility whilst also enhancing biodiversity and tackling climate change.

The hedges are not cut annually, which happens on many farms, so they grow tall capturing carbon. Being left for longer encourages a huge diversity of trees and plants which provides food for wildlife as well as cattle. Tall hedges which are only cut at around 15-18 years old for wood chip and firewood, create shelter for cattle and habitat for wildlife which is abundant. Grazed ancient pastures, hedgerows, along with ponds and waterways and an orchard create habitat for wildlife such as frogs, toads, newts, dragon and damsel flies, grass snakes, foxes, badgers, bats, dung beetles and other insects, owls and buzzards as well as many other birds.



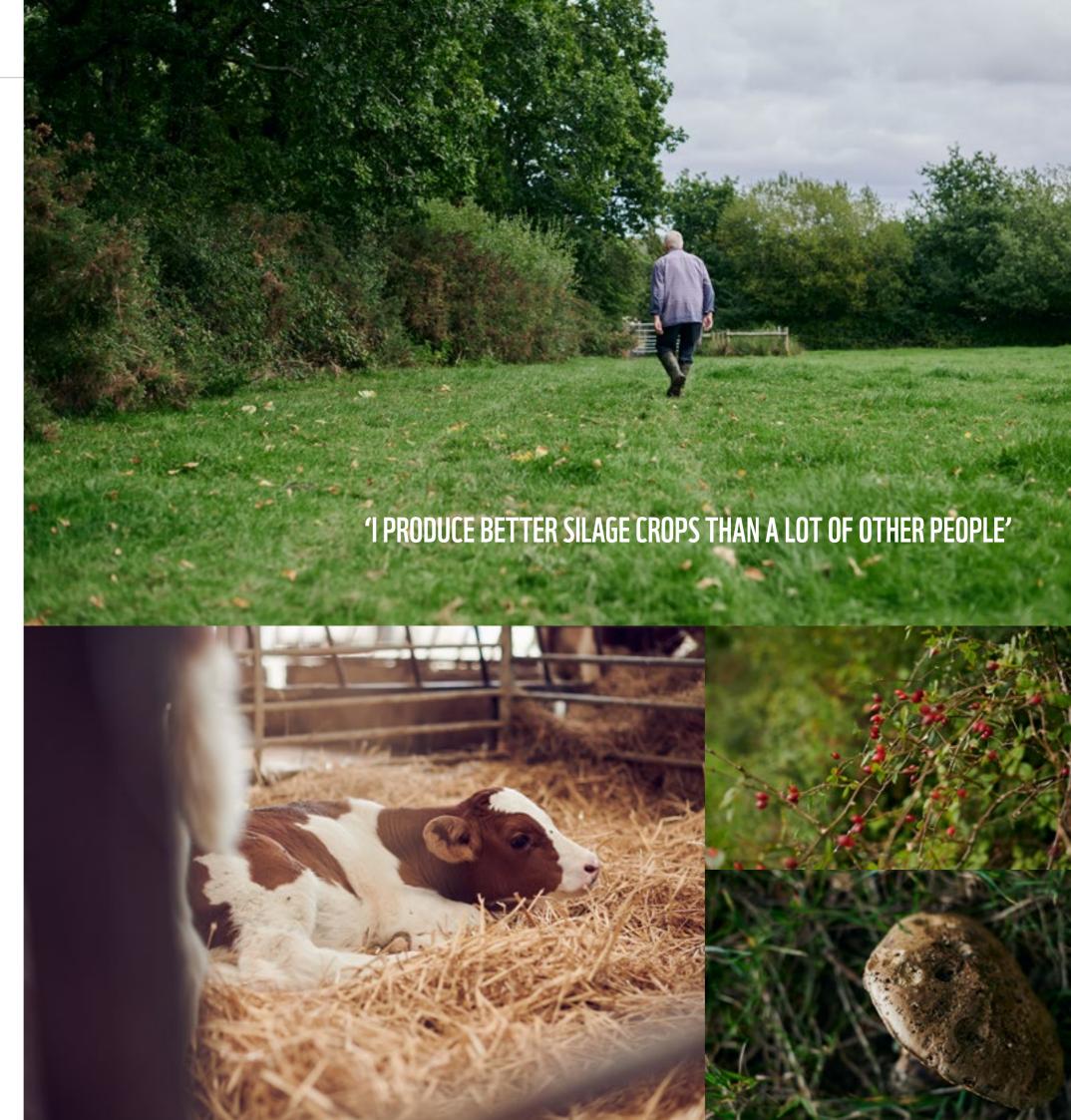


CLIMATE

Cows graze in the fields distributing fertility naturally rather than it having to be spread by the farmer. When the cattle are housed in sheds the manure is composted. Woodchip is mixed with cow manure to create compost which is returned to the land. Not ploughing the land means the stored carbon is kept in the ground and brings with it a diverse mix of deep-rooted plants which continue to access water even during drought conditions. This meant that the recent dry summer of 2022 did not affect silage production or grass cutting for hay bales.

The only external feed that's brought onto the farm is organic lucerne and alfalfa, to encourage the cows in for milking. The rest of the time cows are either grazing in the fields or eating silage.







FOOD, COMMUNITY AND LIFESTYLE

Elfyn believes that it is important that farms are seen as creative centres where food is produced. Glancynin is home to eighty-five Meuse Rhine Issel cows who produce around 1000 litres of milk a day which is made into a range of dairy products on farm, including kefir, soft yoghurt and cheeses. The products are marketed locally under the brand Sanclêr Organic. Milk is also delivered tri-weekly to Caws Cenarth to be made into cheese. Customers report that the milk tastes great and tests show it has high levels of Omega 3 and 6, which are good for heart health.

ELFYN'S CATTLE TEND TO HAVE LONGER LIVES THAN ON THE **AVERAGE DAIRY FARM, HAVING CALVES LATER AND MILKING LESS** INTENSELY FOR A LONGER TIME PERIOD.

As well as supporting their community through providing a local source of dairy products, they provide local employment by welcoming young people from the village to work on the farm. They are currently open to discussing development opportunities by making a few acres of land available to interested people locally to start a small horticulture venture.

Elfyn and Rhian enjoy a peaceful lifestyle at the farm where they have found a balance between earning a living, providing for the community and creating a haven for wildlife and nature.





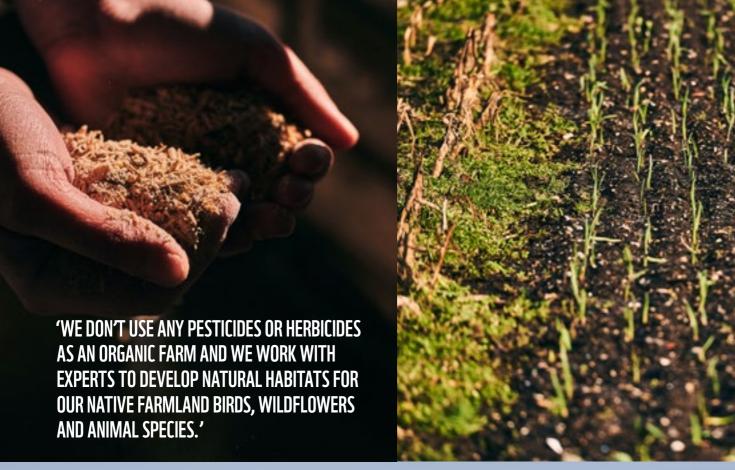
SUMMARY

Polly and Graeme are third generation tenant farmers at Slade Farm near Bridgend in South Wales, where they have been farming organically for over 20 years. They employ two full-time farm labourers, one tractor driver, a part-time secretary/butcher and a full-time vegetable grower from June until December and part-time out of season. They believe very strongly that farms should be at the heart of their communities.

Slade Farm is an 800-acre mixed farm with around 150 cows, 50 pigs, 500 ewes along with 800 lambs, as well as 200 acres of grain and an acre of vegetables. It has been farmed for at least the last 600 years and Polly and Graeme are very conscious that they are temporary custodians of the land and have a responsibility to leave a positive environmental legacy.









NATURE AND CLIMATE

Their farming system is built on sustainability and low inputs. They do not add external inputs such as nitrogen fertilisers and pesticides nor do they feed their livestock imported feed. Instead, they use livestock manure to grow crops and grass which are in turn used to feed livestock. They also grow clover which naturally fixes nitrogen in the soil which is then taken up by subsequent crops.

'WE KNOW THAT OVER THE PAST 70 YEARS FARMING WITH CHEMICALS HAS INCREASED YIELDS ENORMOUSLY, BUT THIS HAS COME AT A COST TO NATURE AND SPECIES NUMBERS HAVE PLUMMETED.'

To encourage birdlife they sow wheat in the spring and harvest it in the autumn. This has resulted in large numbers of bird visitors who are registered on the 'red list' as being in critical decline.

Meadows have been in steep decline across the UK since the 1930s but Graeme and Polly are working to maintain and manage meadows on the farm and have a Site of Special Scientific Interest (SSSI) and other special flower meadows. Over the last 20 years the organic matter of the fields overall has increased by 2% showing that the land on the farm is also sequestering carbon and playing its part in mitigating climate change.



COMMUNITY, FOOD AND LIFESTYLE

Grain grown at Slade Farm feeds livestock and is also sold for human consumption. Hen Gymro (Old Welshman) wheat is grown and goes for milling locally and then on to bakers. Wheat is also sold through Organic Arable and goes into flours like Doves. Slade Farm oats go to Northern Ireland and last year they won 'White's best porridge oats in the UK' award.

Up to 20% of their organic beef, lamb and mutton and 100% of their pork is sold through their on-site farm shop as well as in meat boxes delivered monthly to the local community. The rest of the lamb and beef is supplied to a supermarket.

The vegetables are sold through a Community Supported Agriculture scheme (CSA), which means they work with the community to provide weekly veg bags for the growing season.

Community is very important to Slade Farm and customers who can afford it are encouraged to pay a little extra towards vegetable bags for people on lower incomes. Slade Farm work with a local charity who distributes these vegetable bags whilst supporting young families, showing them how to use the vegetables. Last growing season 10 bags a week were supplied to people who might otherwise face barriers to accessing fresh produce and getting involved.

Polly and Graeme have also adapted one of the sheds on the farm as a boot and waterproofs room for school children and host farm visits from five primary schools in Barry. Multiple classes visit the farm on up to six separate occasions over the year to understand farming through the seasons. Among other things, the children have learnt about manure and the importance of leguminous plants for fixing nitrogen as well as animal husbandry.







SUMMARY

Tanya and Erinna are a mother-daughter shepherd partnership who farm sustainably. They look after up to 2000 native Welsh Mountain heritage sheep on a rented uplands farm in the Cambrian Mountains and Elan Valley. The farm, consisting of a vast upland plateau of moorland and rough grazing, is so high up and remote that they don't have mains electricity.

They shepherd in a way that works in partnership with nature to support the conservation of biodiverse upland hills. The farm is a Site of Special Scientific Interest (SSSI) within the Elenydd designated Special Protection Area/Special Area of Conservation and is recognised as some of the most important hill land for nature conservation in Europe.

Sheep are hefted to the mountain meaning they are naturally managed by relying on the sheep's knowledge of boundaries, optimal grazing and shelter, passed from ewe to lamb over generations. This enables livestock to graze selected areas without fencing. Flocks are accustomed to graze particular areas and develop resistance to certain parasites, mineral deficiencies and plant toxins.

Two years ago, Erinna set up an on-farm butchery and began to sell their sustainably produced meat directly, marketed under their brand, WildShepherd.

JOURNEY

Mother, Tanya, took over the farm tenancy from Erinna's grandparents in 2011. Erinna, after training at Gelli Aur Agricultural College, spent some years contract milking dairy cows at farms across the UK, before returning to the Elan Valley.

Tanya works part-time on the farm and part-time as a lecturer and Erinna, now 25 years old, works full-time on the farm and has developed an on-site butchery and direct sales business for their meat.



'SCIENTIFIC SURVEYS ON THE FARM HAVE RECORDED **HUNDREDS OF SPECIES** OF PLANTS, ALGAE, BIRDS, BRYOPHYTES, INVERTEBRATES, LICHENS, MAMMALS, REPTILES & AMPHIBIANS.'

NATURE AND CLIMATE

The hefted flocks are shepherded and moved in traditional ways on foot, by pony or quad, and with sheepdogs. In winter the ewes and hoggets (up to a year-old lambs) are moved to graze rented downland farms so that the upland habitats are not negatively impacted and their biodiversity is preserved. They then return to the uplands to lamb. After five days the ewes and lambs are let out to roam naturally and pass on the hefted knowledge.

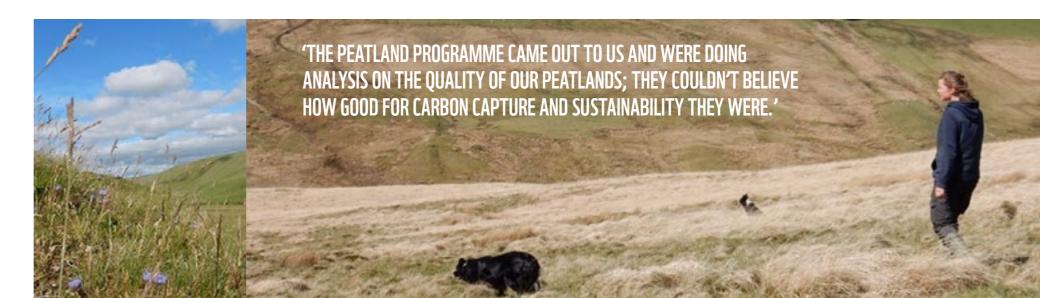
No external imported inputs, such as fertilisers, are added the land. The highest parts of the farm are made up of plateaus with large areas of blanket bog, harbouring specialist acid loving plants such as sphagnum mosses, bog bean and an amazing summer display of bright yellow bog asphodel. These hills are home to a range of rare, upland birds including golden plovers, short eared owls, dunlins and merlins. The clean water of Llyn Cerrigllwyidion Isaf (a lake high on the farm) is home to floating water plantain, which exists in only the best quality waterbodies and is recognised as a species of principal importance in Wales and the UK.

As the bogs and lakes of the high plateaus drain across the farm towards the River Elan, they form a network of streams surrounded by valley sides. These streams are home to dippers and grey wagtails. The surrounding valleys are alive with the song of wheatear, stonechat and whinchat. The stream edges are also home to interesting plants, ivy-leaved bellflower is found on the farm in the wet flushes caused by the natural flow of the streams.

Some of the fields nearer the homestead have been fenced and remain a home to wildlife including nesting curlews, water voles, foxes, and weasels. Within these enclosed fields, Tanya and Erinna have planted hundreds of trees that support a variety of species and provide shelter. As part of The National Peatland Action Programme the area is also being recognised for the carbon capture and biodiversity of its peatlands.



'WE HAVE AMAZING WILDLIFE. IN THE SUMMER THE FARM IS A RAINBOW OF COLOUR FROM THE WILDFLOWERS AND THE **HEATHERS.WE HAVE GOLDEN** PLOVER, CURLEW, AND WHEN THE COTTON GRASS **COMES OUT THE MOUNTAIN** LOOKS BEAUTIFUL.'



COMMUNITY, FOOD AND LIFESTYLE

Not so much 'Field to Fork' but more 'Mountain to Mouth', Erinna is working on making their high-quality grass-fed meat available to the local community and a wider customer base, through online sales. To reduce stress on their livestock and to limit their carbon footprint, they use a local abattoir. They have also developed an on-farm butchery unit, powered by renewable energy.

Erinna, also a qualified and experienced cook, leads the development of a range of meat products. These include special cuts of lamb, hogget and mutton as well as Welsh lamb burgers, kebabs and meatballs. Meat is sent in eco-friendly, biodegradable packaging.

The farm still faces challenges, including how to get their meat from a remote hill farm to customers and they are working on their delivery system. In a cost-of-living crisis, they also face challenges developing their customer base for Welsh lamb, with cheaper lamb from the Southern hemisphere being widely available in shops.

Erinna feels fortunate to be an upland farmer and believes they play a critical role in maintaining the upland habitats for the sheep, wildlife and the community and future generations.



'WE GREATLY VALUE GOOD QUALITY, NUTRITIOUS FOOD AS PART OF A HEALTHY, BALANCED AND AFFORDABLE DIET.'

'PEOPLE WHO HAVE TRIED IT THINK IT'S BEAUTIFUL AND IT'S REALLY SUSTAINABLE.



'IF WE ALL DO OUR BIT FOR SUSTAINABILITY WHERE WE ARE THEN THE WORLD CHANGES FOR THE BETTER.'





JOURNEY

Tyddyn Teg was previously run as Tyddyn Berth for 20 years – a vegetable farm supplying veg boxes. When the owners retired in 2015 the farm was sold to one of the founding members of the Tyddyn Teg cooperative. The sale was an example of a positive succession story with the couple passing on their legacy. The Tyddyn Teg co-operative were lucky to have inherited an organic growing site with polytunnels and a customer list. This provided them with a sure footing that helped their new venture go on to thrive relatively quickly. As time passes, the co-operative plans to pay back the loan from the founding member by selling community shares and attracting ethical investment to make it truly community owned.

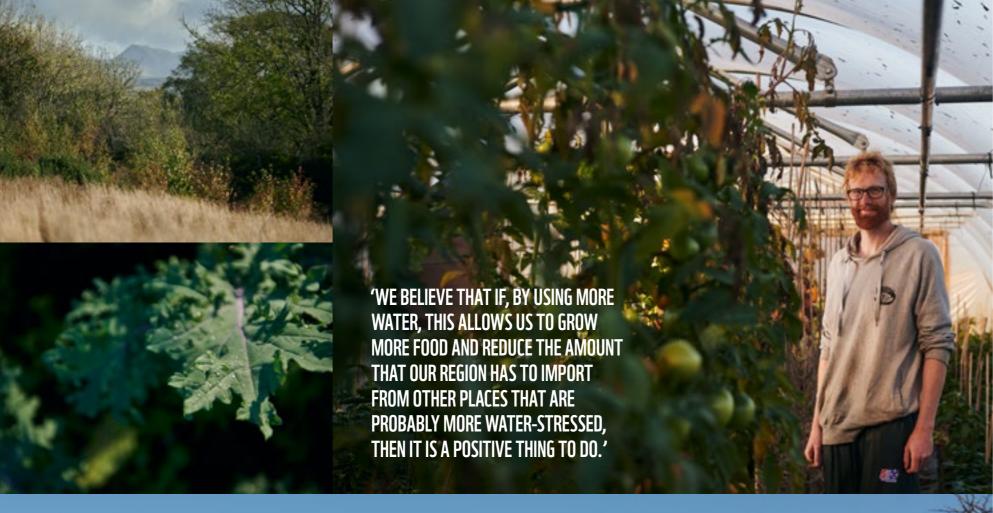


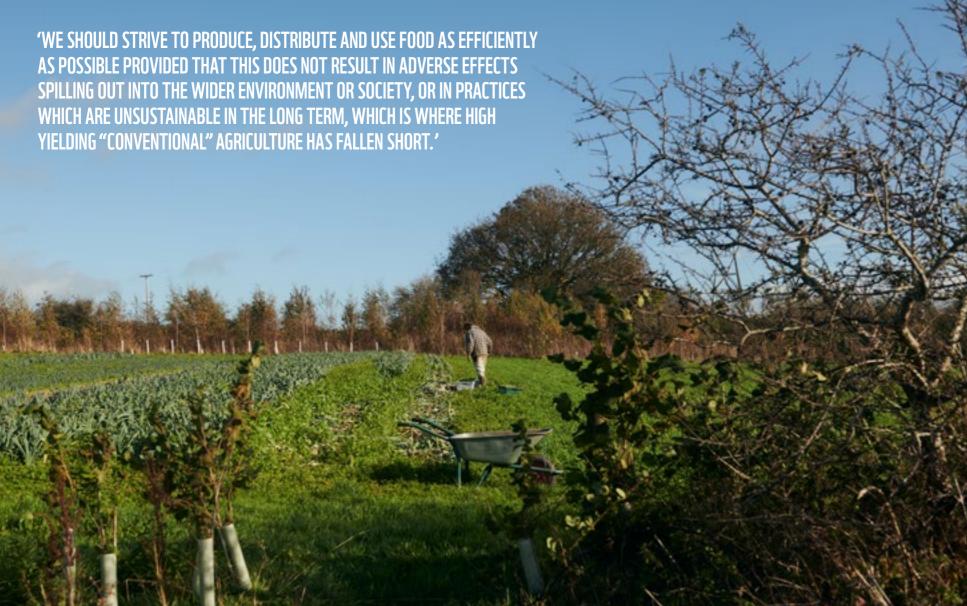
NATURE

Tyddyn Teg grows fresh produce all year around, both in the field and in polytunnels. They do this without the use of agrochemicals and employ farming techniques such as crop rotation, cover cropping, under sowing some crops with clovers, minimum or zero tillage and maintaining habitat for beneficial insects and other animals. Overall, around five acres of land is in vegetable production and the rest is managed for biodiversity.

Biodiversity is encouraged by maintaining habitats such as nettles, scrub and woodland on the farm, and allowing weeds and crop remains (e.g. brassica stumps) to flower where possible. All crop waste on the farm is recycled in some way, either by composting or directly reincorporating into the soil. The agricultural inputs are mostly "waste" products of one type or another - manure, woodchip from tree surgeons, and municipal waste compost.







CLIMATE

Tyddyn Teg sits within one of the highest rainfall areas of the UK and they are not in an inherently water-stressed environment. Despite this, they have noticed the need to irrigate more as long dry periods have become more frequent.

Their existing borehole irrigation system is insufficient and they are in the process of upgrading it with larger pump and storage tank. This was made possible with the help of funding support from the Welsh Government's Horticulture Development Scheme and they believe it will significantly increase yields of some crops as inadequate irrigation capacity is currently a significant bottleneck to their productivity.



The farm uses a renewable electricity supplier and have moved to curing onions and garlic with unheated, forced air, although they are still reliant on diesel-powered machinery. The diesel use in farm machinery and delivery vehicles is less than 1000 litres per year, or six litres per customer, per year for growing and supplying most of their vegetables. Electric farm machinery is beginning to become available but is still currently prohibitively expensive.

As an agroecological farm Tyddyn Teg do not use inputs such as artificial fertilisers and pesticides and are currently trying to improve their use of green manures to decrease reliance on imported cow manure. Zero tillage for garden crops, and minimum tillage for field crops have helped to increase soil carbon. They are establishing undersown clover, better two-year fertility building leys and experimenting with maintaining permanent plant cover on pathways; all of which mean more organic carbon in the ground. Inputs costs, for seeds, fuel, manure, and other farm consumables, are low at around £12,000 per year.

At present yields of most crops at Tyddyn Teg are slightly below benchmarks for organic production, though improvements are being worked on.

COMMUNITY AND FOOD

As well as agroecology being an environmental movement it is also a social movement for greater equality and involves farmers taking control of food systems by producing affordable food for the local community.

Tyddyn Teg's main aim is to keep improving access to fresh vegetables for their local community whilst looking after the environment. They are focussed on producing vegetables for direct sale to local people, as opposed to producing niche or gourmet crops for export or restaurants. They recognise the tension between keeping good food affordable and therefore accessible to everybody, versus providing proper pay and conditions for the people who produce it.

With the village shop now closed, the on-site farm shop at Tyddyn Teg has become an integral part of the community providing a much-needed service to residents in the surrounding area. They support other businesses in the area by retailing their produce in the farm shop, supplying local shops with vegetables to sell, and collaborating with other nearby agroecological farms to share equipment and bulk-purchase supplies. They do this as they wish to see a proliferation of successful small food producers like themselves.

Developing their community space to host events is important to the cooperative, engaging both their members as well as the local community by hosting volunteering days, community dinners, school visits and open days, promoting good food and good vegetables. They recently established a "Community Solidarity Fund", which will use funds raised from events and a forthcoming community share scheme to fund projects and activities that benefit the local and global community. This plan is viable because of the strong links they have with their customer base and local community, and their ability to appeal to ethical investors who care about a "triple bottom line" of profit, people and planet.





EQUALITY

Tyddyn Teg is cooperatively run, as opposed to a traditional family farm with an owner family and possibly additional employees. Although they have only been established since 2015, they believe this model allows their business to survive long-term without the difficulties of inter-generational succession that family farms often face. A core principle of the business is equality (of power and pay) between members, in contrast to a system with owners, managers and employees. This helps to ensure that all members of the co-op take a long-term view and are motivated to act in the interests of the business as a whole.

'EVERY MEMBER HAS CONTROL OF AND RESPONSIBILITY FOR SOME PART OF THE OPERATION, WHICH WE BELIEVE MAKES FOR A MORE SATISFYING EXPERIENCE THAN A SITUATION WHERE WORKERS HAVE LITTLE OR NO INPUT INTO DECISION-MAKING.

SIMILARLY, SIGNIFICANT DECISIONS IMPACTING THE WHOLE **BUSINESS, SUCH AS CHANGES TO OUR POLICIES OR DECISIONS** TO TAKE ON DEBT OR NEW MEMBERS, HAVE TO BE REACHED BY A CONSENSUS OF ALL MEMBERS. THIS PROBABLY MEANS THAT MAKING DECISIONS TAKES LONGER THAN IT OTHERWISE MIGHT, BUT WE NEVERTHELESS FIND IT WORKS AT OUR SCALE.'





