

**RESEARCH
INTO
TRANSPORTING
FOOD
IN
GWYNEDD**

Geraint Hughes
August 2020



Research into transporting food in Gwynedd for 'Arloesi Gwynedd Wledig'

The purpose and background for this study is to support the 'Arloesi Gwynedd Wledig' LAG Group and the staff team so as to identify possible interventions for the challenge of transporting food in Gwynedd. It appears that people are more willing to order local food, and that businesses have started to deliver their produce to customers in the wake of the COVID 19 situation in 2020.

The initial research work has been done by an Arloesi Gwynedd Wledig officer into the present situation of transporting food and it seems that although a few companies are collaborating, they still face obstacles with ordering systems. The collaboration that has taken place has been led by volunteer groups but what about commercial groups?

The intention, following this study, is to develop a means of supporting the present systems.

INTRODUCTION

I was asked, as part of my work, to be ready to express an opinion, and so I decided to present this document in the first person. I feel that this work should, amongst other things, to be a briefing document for LAG members to consider what can be done to help food and drink businesses in Gwynedd to deal with the challenges of transportation.

When I express my opinion, I try to support it with facts or observations. An opinion, of course, reflects a person's experience and background and very briefly over the page, I highlight my background, local and beyond Gwynedd.

The Covid 19 restrictions have been a shock to the food and drink industry in Gwynedd. The sudden-ness and extremes of the steps taken is one of the hardest challenges to face the sector.

Dealing with the changes was a worrying experience for companies in the sector. Through perseverance and creativity, some producers succeeded in transforming their business models overnight, by supplying customers by completely new means.

As part of this brief, I was asked to respond to eight specific questions, namely:

1. An overview of who is transporting food and where to (concentrating on commercial companies)
2. The type of produce that is being transported
3. The collaboration that is taking place between businesses (are companies transporting the produce of more than one company?)
4. Distribution models
5. How has COVID 19 influenced the above?
6. Suggestions or opinion on how all of this can continue past the present period.
7. The challenges companies are facing
8. Opportunities for working together

As part of this work package, I contacted 12 companies to discuss the matters raised in the brief. This enabled me to get a better feeling for the challenges that have faced the food and drink ventures in Gwynedd as they try to transport produce, as well as the changes seen across the chain. 3 – 4 days were reserved for the work from mid-July to the beginning of August.

The 12 companies were chosen to represent the varying nature of the sector in Gwynedd – in terms of size, location, type of produce and what means were used to reach the market. As part of the 12 discussions, 2 national food and drink distributors who serve Gwynedd were contacted in order to get their perspective on transportation.

Geraint Hughes – January 2020

Geraint has 20 years' experience of collaborating with rural businesses, especially agri-food ventures. He is in his element spending time with people to develop and realise ideas and he enjoys attempting to tackle and solve challenges.

His is a qualified facilitator and strongly believes in the principle that his task when working with people is to motivate minds and support individuals / groups to develop solutions for themselves. His business interests in the field of agri-food enables him to realize directly what the market needs are generally and to understand the challenges facing rural businesses.



LinkedIn Profile - <https://www.linkedin.com/in/geraint-hughes-62161220/>

Key competences

1. **Facilitate, co-ordinate and appraise** – Geraint is an experienced facilitator who has supported and collaborated with over 80 agricultural business groups since 2006. He is an experienced leader of teams in order to realise schemes short and long term.
2. **Digital innovation** – Geraint understands the benefits of current digital technology for business use, especially in the field of agri-food and the environment. He is a keen user of digital technology to establish flexible business administration systems and to create targeted cost effective marketing campaigns.
3. **Rural economic development** – speciality and experience of producing local food, developing the supply chain, community support and development, tourism and sustainable development, with the emphasis on facilitating, invigorating and supporting groups.
4. **Development and innovation in Welsh** – Geraint is experienced in incorporating the Welsh language into business and marketing plans for daily communication.
5. **Aspiration for developing the rural economy in Wales** – It is Geraint's passion and commitment to contributing to the development of the rural economy in Gwynedd that drives him on from day to day.

In addition to experiencing successes in realising challenging projects, managing brands and developing food produce, Geraint has also experienced failures which have been just as important in nurturing comprehensive experiences for the real challenges of sustaining and growing ventures in the area.

He is the Managing Director of Bwydydd Madryn Foods Cyf, joint founder of the retail website Blasus.Cymru and a Nuffield scholar which enabled him to study functional food across 5 different countries.

1. An overview of who is transporting food and where to (concentrating on commercial companies)

1.1 The food and drink sector in Gwynedd produces food and drink to a high standard. As a sector, it is fragmented, dispersed, highly variable and, to a considerable extent, unco-ordinated. There are a host of micro businesses, often located in the owner's home, as well as a few large companies that employ a comparatively large number of people such as South Caernarfon Creameries near Pwllheli, Brighter Foods near Tywyn and companies such as Roberts of Port Dinorwic and Ready Foods in Caernarfon.

1.2 The food and drink companies in Gwynedd operate in a wide variety of sectors such as dairy produce, red meat, bakery products, ready meals, chocolate / confectionary, beer, snacks, water, seafood, vegetables and more. As a result, these businesses supply extensive markets, in type and geographically.

1.3 Regularly collected information and statistics about the sector in Gwynedd are scarce, which makes it difficult to monitor and record patterns. There is a strong argument for allocating resources to keep a constant eye on the sector, harvesting indicators and monitoring patterns so as to enable bodies and projects such as AGW to respond appropriately. It would be valuable to attempt to quantify the cost of maintaining a framework to collect and monitor the sector on a county or regional level such as North West Wales.

1.4 The main path to market for the micro food and drink businesses in Gwynedd is direct selling to the customer and working with a small cluster of fairly local shops or restaurants.

1.4.1 In order to reach the customer **directly**, businesses can attend events such as farmers' markets, food festivals and local shows. This method of transporting food to the customer was halted to all purposes in March 2020 by the Covid 19 restrictions. Another method of reaching the customer directly is to offer a delivery service and many examples of this were seen the length and breadth of Gwynedd with food and drink producers responding quickly to the Covid 19 Emergency by launching new delivery services. More often than not, this choice was offered through a website and / or the companies pages on social media.

1.4.2 Often, micro food and drink businesses supply a small number of other commercial customers such as retailers and / or restaurants. They transport their produce themselves or arrange transportation through a delivery company.

1.5 The main path to market for small producers (employing up to 5 people) is **selling to another company in the supply chain**. As these are a slightly larger venture than the micro company, they need to be able to sell larger amounts of produce. Usually, these businesses are dependent on a range of shops and / or

restaurants and also work closely with a selection of distributors who buy large volumes of produce to sell on to shops and / or restaurants.

1.6 The larger food and drink producers in Gwynedd tend to be dependent on **distributors, chains of shops / restaurants and supermarkets** as these are the type of customer that can offer large enough orders to enable the producer to continue on a large scale.

1.9 Food and drink produce from Gwynedd is transported locally within the County to other parts of north Wales, throughout Wales, to every part of Britain and also exported in some rare cases such as the 'Welsh Lady' company in Y Ffor. Food and drink from Gwynedd reaches places that reflects the scattered nature and the variety of the sector.

1.10 All sorts of supply chains for transporting food and drink already exist in Gwynedd, so it can be summed up that food and drink from the County is transported to every corner of Wales and Britain. Historically perhaps, transporting to south Wales was challenging, but now, with the arrival of national delivery and distributing systems such as Castell Howell and Blas ar Fwyd. it is comparatively easy to develop a market in south Wales also.

1.11 Although the County is considered marginal, geographically, in west Wales, it is possible for producers to take advantage of the effective food transport network across Britain as a result of the presence of regional distributors eager to collaborate with producers and also with convenient access along the A55 to substantial populations.

1.12 Harlech Food Services is located in Llanystumdwy and distributes food and drink across north Wales as far as Cheshire and Merseyside. Castell Howell has a sub-warehouse in Blaenau Ffestiniog and they, as a company, distribute across Wales and increasingly to south west England. The food and drink company Blas ar Fwyd distribute actively across Gwynedd as a specialist distributing company, with its headquarters a few miles outside the County in Llanrwst. These are three strong distributing businesses with close contacts with Gwynedd.

1.13 There are other food and drink distributors serving Gwynedd and which collaborate closely with the County's producers by buying and transporting on their behalf. These include the company DJ Fruits of Porthmadog, Taste Merchants of Newtown and R&I Jones of Caernarfon.

1.14 Together, producers in Gwynedd supply a range food and drink to every main supermarket in Britain, including Asda, Sainsbury's, Tesco, Morrisons, Co-op, Lidl, Aldi, Waitrose, Iceland and M&S. These supermarkets operate huge warehouses, each one located outside Wales. There are a number of examples of local producers sending pallets of produce from Gwynedd to Staffordshire where a number of warehouses are situated, only for the produce to be returned to the supermarkets which, perhaps, are only a mile or two away from the production site. Even though

this may seem daft on the surface that is the supermarkets' efficient transportation model.

1.14.1 Managing transport to supermarket warehouses calls for expertise to meet the requirements, which include delivering within specific time slots and administrating the every aspect over the supermarket's unique digital system.

1.16 An important link in the transport chain to many companies are delivery companies. Gwynedd is once again fortunate with this as the delivery company Delsol is sited at Griffiths Crossing between Caernarfon and Bangor. This company can offer very favourable terms for transporting produce within the code post area 'LL' and also across Britain. Its vans reach every part of Gwynedd, with a number of producers saying that they can lift the phone to the company as late as 3 in the afternoon to pick up produce to be sent to any part of Britain the following day. The company also has a good name for its standard of service.

1.15. To sum up, food and drink producers in Gwynedd transport food and drink in a variety of ways and to different places across Wales, Britain, Europe and beyond. It appears that the most of the produce is transported and eaten / drunk within Wales, and that the second biggest market following this is in England.

2. The type of produce being transported.

2.1 As previously noted, data on the food and drink sector's activity in Gwynedd is scarce.

2.2 The types of produce being transported include ambient produce and chilled produce. Generally, the "shelf life" of ambient produce tends to be much longer than chilled produce. I am not aware of any producer who freezes produce on a scale to sell on and perhaps this is surprising, as there are specialist distributors in the County who could deal with frozen produce. It is possible that the cost of equipment to freeze food on scale and very quickly, and of the specialist store required, is too much of an obstacle for the area's producing businesses to consider.

2.3 Meat, dairy, bakery, snacks, in glass, alcohol, sea food, soft drinks and confectionary produce are all transported by Gwynedd producers.

2.4 In order to facilitate transportation, most producers sell many units of produce within a box. Often, ambient produce is sold in boxes of 6 or 12 units. These number are convenient for the retailers to handle as it is usually possible to empty a whole box of 6 units straight onto the shelf and avoid storing part full boxes in the back of the shop.

2.5 Units for the service market are sold in different formats to the retail market. For example, the 'Welsh Lady' company near Y Ffôr is famous for jams, sauces and chutneys. Jams are sold in half pound glass jars for retailers and in 3Kg plastic tubs for the service market such as cafes and restaurants.

2.6 Medium and large sized producers in Gwynedd are old hands at selling by the pallet. Pallets are usually described by producers in terms of how many layers they have and how many boxes there are on each layer.

3. The collaboration between businesses (do companies transport produce for more than one company?)

3.1 Considerable emphasis was placed on trying to research this question further by contacting and discussing with businesses. Examples of collaboration between commercial food and drink producers in Gwynedd are rare, and certainly in transporting. I feel there is a golden opportunity here to encourage and facilitate much more collaboration which would be to everyone's advantage.

3.2 Here are some examples of collaboration with transportation in Gwynedd:

a) Experience and contacts in the transportation field are shared when producers meet each other at fairs and events.

b) Collaboration within business relationships such as local distributors acquiring from producers on commercial terms and then selling and distributing the product.

c) Local specialist delivery companies, such as Delsol, are paid to transport produce on behalf of the producer.

3.3 When the 10 producers were asked whether they collaborated with other businesses for transportation, all answered "no". The majority noted that they would be willing to considering the possibility, so this is an important matter for AGW to consider.

3.4 Various reasons were offered for the absence of collaboration in transporting produce. The reasons varied from the fact that producers' needs were too varied for sharing, to a lack of other producers with similar needs in the same village or area to make collaboration a practical option for transporting.

3.5 To a large degree, the task of distributors within the supply chain is to consolidate the transportation of food and drink. I believe that food producers tend to collaborate with distributors rather than to other producers for transportation. The businesses operating in distribution have already been noted in part 1. As well as transporting, the delivery company Delsol also offer a temporary, ambient food pallet storing service, which can be a useful part of managing food and drink movements.

3.6 For transporting pallets, producers contract businesses such as Delsol to transport on their behalf, or, a few larger companies such as South Caernarfon Creameries, use their own lorries to deliver. An artic lorry can usually transport up to 26 pallets, varying from 1m to 1.5m high.

3.6 Support has been provided in Gwynedd over the years to facilitate collaboration amongst producers such as establishing new farmers markets and sales trials through vending machines. An effort was made to facilitate transporting food and drink to other parts of north Wales by funding a van on behalf of a group of producers. The result of this intervention was that producers were ready to use it

whilst the work of co-ordinating and driving the van was supported, but once the support ended, the producers could not continue to finance the model nor allocate time and energy to organize it.

4. Distribution models

4.1 Food and drink distribution models are mainly described in terms of the supply chain. If it is accepted that the first link in the food and drink chain is the producer, then many different models of distribution can be followed as noted below.

4.2 The exact model chosen by producers depends on many considerations, including the ability and willingness of the company to provide credit, the amount of produce for sale, how seasonal the business is, the storage requirements of the produce, shelf life, type of packaging (e.g. glass, plastic, metal...) intensity of competition, the choice of distributors available and the location of the market to be supplied.

4.3 Generally, the type of transportation path producers adopt can be described in the following categories:

i) **Direct selling** – selling to the person who is eating / drinking the produce directly, either at events, over the phone or on line. This type is often referred to as the 'short chain', as there is just one step to selling. The only shorter model is the self-sufficient farmers and growers who produce and eat their own food.

ii) **Retail / Restaurant / Cafe** - selling to another business who then sells the food / drink on to the customer to eat / drink. This chain consists of two step selling and 3 partners. It is an example of a 'business to business' chain for the producer. It requires the producer to sell at least per box and / or set a minimum order in order for the chain to work.

iii) **Through Distributors** – selling to a business that specialises in consolidating a range of produce to sell on by the box to other businesses. Usually, distributors buy by the pallet and as a result producers can provide a discount on the unit price because of the bigger quantity. Selling through distributors can be an effective method, and is also considered to be a model with less credit risks. Although distributors are an important link in transporting and distributing food and drink, producers should try to avoid over dependence on one or two only, and should accept that it is not the distributor's work to market produce. Food and drink producers must continue to market constantly even when they are supplying distributors. This model is comparatively long and includes three steps and at least 4 partners.

iv) **Through a processor** – selling to a business who buys produce in order to process it into a different form or as an ingredient to produce another type of food / drink.

4.4. In order to match the requirements of this brief, I have not considered agricultural businesses. I understand that the emphasis for this work is to try and

facilitate AGW's task of identifying what intervention could be constructively offered to a food producing business, excluding agriculture.

4.5 Despite this, when possible, agriculture should be included as part of the development work for the food and drink sector in Gwynedd. Some of the economic challenges of the agricultural sector spring from the fact that it is often treated as being outside of the food and drink industry. For example, Welsh support is provided to the agricultural sector through the 'Farming Connect' service and support for the food and drink sector through the 'Cywain' programmes or food clusters – there is very little cross pollinating activity and experience between the programmes, though in my opinion they all are part of the food and drink sector. Had agriculture been included in this brief on transporting food, then the contents of the report would be quite different. There are many basic challenges for transporting raw produce from Gwynedd farms. One of the main weaknesses at present is the lack of provision locally for slaughtering animals, despite the success of farmers in the area in producing red meat to a high standard. Apart from one small scale slaughter house in Trawsfynydd, there is not another slaughter house in Gwynedd, which is a very substantial obstacle for any farmer who wants to add value or to process his own meat.

4.6 In addition to the distribution models listed above, producers do have a choice of how to deliver their produce to the next stop in the chain. Briefly, producers can transport themselves or pay a delivery company to do so. The other possible choice would be to collaborate and share transportation resources with other producers. From conversations in producing this brief, it was noted that the majority of producers are willing to consider opportunities for closer collaboration, although no specific suggestion was mentioned as to how. It appears therefore that there is interest and a demand for encouraging more networking amongst Gwynedd producers. Perhaps the focus should be on specific fields or geographical areas or, now that video-communication is being accepted as a conventional method of holding meetings, producers from a wide area could come to together virtually, from Abergwyngregyn whisky to Aberdyfi sea food.

4.7 It should be remembered that national projects, such as Cywain, offer specialist support for food producers to develop brands and to launch new produce. Also, Food Cluster and Good Drink support, funded by the Welsh Government, is an opportunity to meet with Producers across North Wales.

5. How has COVID 19 influenced the above?

5.1 The food and drink market was transformed virtually overnight following the Covid 19 restrictions. With strict steps to restrict peoples' movements, patterns of buying food and drink changed in a very short of time. Dealing with this change was a huge challenge for food and drink businesses in Gwynedd.

5.2 Here are the most obvious challenges at the beginning of lockdown from the middle of March to the end of May.

i) The restrictions were introduced within a fortnight of the start of the Easter Holidays when many producers had been building up their stock to prepare for one of the busiest periods of the year. For some companies, the timing of the restrictions was the 'perfect storm', their markets dwindled overnight just when they had a substantial amount of stock ready to sell. Businesses had to take urgent steps to ensure their food and drink didn't go to waste and some were very kind and used the opportunity to support charities and local food banks.

ii) It became clear from the start that a basic difference was developing between the retail market and the service market. With cafes, pubs and restaurants closed, the eating out food market practically disappeared. Those producers who depended on this type of business had to take very difficult decisions early on in this period. The choice for many was to furlough their staff as soon as possible and ensure that they took advantage of all the support that was available. Some succeeded in adapting their choice of produce to satisfy markets that were totally new to them, by supplying retailers and developing direct paths to private customers. The company 'Daffodil Foods' from Y Ffôr for example, developed their very successful 'Tê Pnawn' packs, which were on sale all over Britain and included their special clotted cream and cakes from another producer from Gwynedd, 'Becws Popty', Llanllechid. In other cases, businesses only readjusted their packs and it proved fairly easy to get some sales as retailers were very busy and there was demand for more produce than usual.

~~iii) This period saw an increase in innovation, especially in transporting food. Many producers, as well as retailers, established a home delivery service. To correspond with this, a number of producers strengthened their on line presence in order to promote their produce. 'DJ Fruits' developed a special app for residents to be able to buy food and drink to be delivered to their homes. And producers such as 'Tatws Bryn' in Bethesda, butchers 'Wavells' of Llanrug and 'TJ Roberts' of Bala and 'Becws Islyn' in Aberdaron were seen to adapt and expand their delivery service to satisfy domestic needs.~~

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v) This period highlighted the area's dependence on supermarkets for its food supplies. There are very few independent retail businesses left in Gwynedd, especially in the Dyffryn Ogwen / Bangor / Caernarfon areas. In this area, the food

and drink retail landscape has totally disintegrated over the last 30 years, with Tesco, Asda and Morrisons swallowing tens of independent shops. This is a field that needs urgent attention and is, perhaps, beyond the terms of reference of AGW. Similarly, politicians will have to try and solve food poverty, which became apparent during this period, despite the area being full of farms producing more meat and milk than the local population need themselves.

vi) During the period from the end of March to the beginning of April, Menter Môn engaged widely with the area's food and drink businesses, being ready to intervene if necessary. The opinion at the time was that producers and retailers were responding to the challenges especially well themselves, though maybe there was quite a lot of duplication in the delivery models. When producers were asked to identify opportunities for collaboration, the conversation often turned to the unique nature of each business and the challenge of collaborating with other businesses when everyone is so different.

vii) Many producers noted that they had received many new customers during the period as they developed new methods of transporting and with the increasing emphasis on eating local food. There was a feeling that people should try and make a special effort to support local producers during this challenging period.

viii) Two producers noted that preparation work for Brexit had contributed to their ability to respond suddenly and similar points were seen to be being discussed on the food and drink media. When considering the future, the food and drink sector will have to prepare for more events that could disrupt businesses substantially, including further steps in the Brexit process, climate change, unexpected geo-political matters, economic shock and the continuous risk of other diseases that could affect people or crops / livestock on farms. Robustness as a concept and as a measurement of business viability to withstand unexpected events is likely to be more important in future.

5.3 Later on in the lockdown period, during May and June, the element of panic buying disappeared and new patterns became established. Sales on line continued to be extremely strong and by then it was clear which companies had had to take extreme steps to defend their businesses by furloughing their staff.

5.4 As the restrictions were relaxed, especially permission for cafes and restaurants to reopen, orders started to flow again in late July for the companies forced to close temporarily, or those that had reduced their activities at the beginning of the period. With Gwynedd being such a popular destination for tourists, the change once again was extremely sudden as the local population swelled and the demand for food and drink increased almost overnight. The next step of the Covid 19 period, as the holiday season quiets, will be another challenge for local food and drink producers and it could be that the period from October 2020 to March 2021 will be as challenging as anything already experienced, but this time with less support packages available for businesses from the Government.

6. Suggestions or opinion on how this can continue past the present period.

6.1 There is a strong opinion amongst producers that the buying patterns of most people have, by now, returned to what they were before lockdown. The majority noted that many of the new customers they had gained during the period were no longer buying from them and they would most likely stop the delivery arrangements they had developed in response to the Covid 19 challenges. I noticed that many of the producers were extremely disappointed that this had happened so soon after the restrictions had relaxed. Many mentioned to me that they would be able to run a successful business without having to rely on tourism had the local buying pattern seen during the height of lockdown continued. One producer noted that had just 20% of the new customers continued to support the retail element of his business, the business would be sustainable throughout the year without having to rely on tourism.

6.2 I feel that people, apart for a minority, will, on the whole, continue to return to former patterns. My optimism that the lockdown period would lead to a small revolution in buying and supporting local food and drink is fast fading, based on what I see and hear. Perhaps a proportion will continue with some elements, but this, I think, will only be a small minority.

6.3 Lockdown has highlighted the ability of the sector to innovate and change when there is a real need. It has also highlighted how vulnerable the food system is locally and how fickle the market is for local producers.

6.4 On the whole, food and drink producers in the area responded and adapted independently. I feel that this highlighted that the network between producers is not so strong. Good work has been done in the past to promote networking between producers on the ground.

6.5 More positively, this period has shown and proved to producers that opportunities exist on line and also how important it is to consider alternative methods of transporting food and drink. I feel there is a readiness and strong desire amongst the food and drink community in the wake of Covid 19 to invest more time and money in innovative digital solutions.

6.6 It seems that there will be more and more emphasis on tackling the big challenges for the industry which have been highlighted during the Covid 19 period. The list below shows some of these challenges:

i) At present, there is a movement to promote more production and buying of local / Welsh / British food so as to try to reduce dependence on imports. 53% of British food and drink is, at present, produced within the combined country. Nearer to

home, the Welsh Government seems to be taking small steps to try to vary and diversify the food and drink sector in Wales. The best example of this is their aspiration to see more pork produced in Wales (we are 5% self-sufficient at the moment) and also a lot more vegetables and fruit. Steps taken to realise these objectives at present, are scarce, and it must be asked whether or not the Government is serious.

ii) The industry continues to try and get to grips with the pressing challenge of reducing food waste along the supply chain and the pressures to find solutions are likely to increase.

iii) Some sub sectors in the industry foresee pressing staffing problems in the future as the flow of labour from other parts of Europe is restricted. In response to this challenge, the industry, especially processing companies and intensive crop growing farmers, are searching for automated solutions and where possible, for ways of making the work seem more attractive to people.

iv) The pendulum is beginning to swing more towards encouraging people to eat seasonally as a way to respond to the environmental and climate change challenge. This makes a lot of sense, as eating seasonally makes it easier to eat local food, which in its turn gives the local economy a boost. There is some evidence to show that our bodies cope better with a seasonal diet, which suggests some sort of evolution where the body adapts to a diet which goes naturally with what is available within an area.

6.7 Although all the above matters have the potential to disturb food and drink businesses in Gwynedd, the fact that the sector in the County is full of one-person small ventures, and then a collection of micro / small businesses, offers strength. As it is possible for these ventures to adapt much more quickly and more nimbly than larger companies, especially if the business has good internet connection and an owner who embraces digital technology, it is possible for Gwynedd businesses to adapt quicker. The food and drink sector in Gwynedd should be looked upon as an opportunity to add value to the economy and to keep a larger portion of the pound to circulate locally. There is much more need to raise standards and to increase pay than to create more work in the County according to various statistics available and from listening to the opinion of beneficiaries within the sector and specialist on the

economy. Apart from the tourism sector, which is lambasted from many directions at present for causing problems in the area, the agricultural sector is the other industry which forms the basis of Gwynedd's economy. Maybe it will be possible to reframe our thoughts to consider the agricultural sector and the food and drink as one, and to consider the opportunities there are to add value. That would present an opportunity to strengthen the County's economy by creating produce of value which is more likely to be under the management of people who live in Gwynedd.

7. Transportation challenges faced by companies

Costs – Transportation costs can add an extra 10 – 20% to the price of products.

Damage in transport – Especially when using delivery companies and especially products sold in glass.

Developing on line platforms – A huge increase was seen in buying on line at the beginning of lockdown, which has sparked increasing interest in this method of selling. Producers acknowledge that they should learn more about the opportunities that exist and that they need help to take advantage of that.

Lack of networking opportunities – with events and food and drink fairs postponed, there are few opportunities at present for networking and sharing ideas and information amongst fellow producers.

Finding sustainable packaging material for a reasonable price to transport produce.

8. Opportunities to collaborate

8.1 In this section, I am highlighting different models of collaborating as well as highlighting possible opportunities to innovate with techniques / systems for transporting food and drink. Finally, I have tried to highlight opportunities that exist for AGW to pilot, learn and share in the field of transporting food and drink.

8.2 I feel that the models noted below and over the next pages are opportunities for possible collaboration between food and drink producers in Gwynedd.

i) **INFORMAL, SIMPLE, COLLABORATION AND SHARING** – This model is based on producers discussing and understanding each other's business and being able to realise what resources they can share, without any formal agreement or structure.

The following are fields where business can collaborate completely informally.

Sharing information, such as packing and transporting costs and possibly sharing producers' contact details....

Sharing customers' details – this opportunity was highlighted during Covid 19. With the increase in on line sales, many producers now have lists of customers interested in local food and drink and who are comfortable buying over a website. Maybe there is an opportunity to cross market produce that don't compete directly with each other? Perhaps this principle could be expanded beyond food and drink as other companies from Gwynedd have valuable lists of customers, such as companies that sell produce to the home.

Sharing Transport – This is an old idea which has never really taken off in Gwynedd. There may be an opportunity to try and map producer transport arrangements and provision in Gwynedd to identify potential opportunities and to encourage discussion and sharing information with producers.

It could be argued that this model should be the first step in promoting local collaboration – if this doesn't work, then the likelihood of being able to promote further integration is small.

Many small scale producers tend to work independently without considering the advantages of working with others. Sometimes it can be against human nature in business to work closely with fellow producers, and sometimes small businesses can be so busy in their day to day matters that they don't consider the value of working with other producers.

ii) **FORMAL INTEGRATION WITH THE SUPPLY CHAIN** – This model is different to the first as it offers a more formal relationship between producers and considers how other partners along the supply chain can work closer with producers such as specialist delivery companies.

Horizontal or vertical integration can offer efficiency benefits and develop new opportunities for businesses.

An example of this is producers coming together to buy / hire a transport vehicle, with ownership shared according to the structure that has been created. Rather than sharing, as in the previous model, this model suggests that new steps are taken together and includes relationships that are more formal and possibly shared ownership.

iii) **CO-OPERATIVE COMPANY** – A co-operative company is a business which belongs to and is run by a group of individuals for the benefit of all. In this case, the model would include a group of producers working under a co-operative structure to co-ordinate orders and supplies.

Although the principle of establishing a co-operative company can be attractive, it can be very difficult to make it work successfully in practice. However, one of the most successful examples of a co-operative food company is in Gwynedd, South Caernarfon Creameries.

Because individual producers are likely to be few and small, it is highly unlikely that a co-operative company would employ any staff to begin with. Rather, the company would be responsible for running the site for its members to store goods and to put orders together, before arranging transport to customers. The sales could come through the co-operative company or otherwise it could take a percentage of the sales from its members. As with the local creamery, a critical number of producers is needed to make it work and they must commit to it totally. It could operate like a micro 'Amazon' site, enabling small producers to take the leap from a home business to a larger one.

Any money left over at the end of each period or year is either invested in developing the company or shared between the members as agreed. Similarly, the members would bear the responsibility to shoulder any deficits.

In addition to providing logistic services, a co-operative company could help producers to add value and sales and possibly facilitate training for their members. Co-operative companies also tend to have a strong sense of ethical responsibility beyond making a profit and that could sit easily with local sustainable production advantages in Gwynedd.

Compared to other European countries such as France and Germany, this type of model has not been so prominent nor successful in Wales, possibly because of the differences in culture and disposition. It would be crucial, in my opinion, that producers should lead any attempt to develop this type of model, and perhaps the onlstep AGW should consider would be working to try and understand how such a concept would work and how much sales and produce would be required for it to operate sustainably.

iv) **JOINT CONSOLIDATION** - The models considered so far are based on producers coming together to work more closely in one way or another.

When considering new models in other parts of the world, there are examples where one individual or business has seen an opportunity to add value to the supply chain by working more closely with a group of producers to provide a service.

But, really, what the majority of food and drink producers enjoy most of all is producing – they are passionate about their produce by instinct. Many food and drink producers have told me that marketing and chasing customers doesn't appeal to them, although they admit that it is a very important aspect of a viable retail business.

The idea behind this model is that one producer, or even a person / company that doesn't produce food and drink but possesses the relevant skills, can market food and drink and co-ordinate transport on behalf of the producers in exchange for an agreed commission. This can be considered a means of outsourcing the task of managing the food chain beyond the processing site, without losing ownership over the company or brand.

Similarly, a person / company could operate as a joint consolidator by offering warehouse space and an order processing service. This type of structure can occur organically if an existing producer gradually becomes a focus for other producers because he or she has shown the ability and aspiration to accomplish the task and / or has the necessary facilities to do so efficiently and well.

So the consolidation model includes an individual or business which shares the same aspiration and values as the producers and goes on to offer service as part of the supply chain on commercial terms.

v) **JOINT VENTURES** – This model is based on working more closely with selected other partners along the supply chain.

Joint ventures can work well if all the parties gain. Instead of investing scarce time and money in establishing a new transporting structure or service, present opportunities could be considered for joint ventures in Gwynedd.

The most obvious place to start would be to consider other companies in the county that have the necessary facilities and the appropriate resources at present to store produce, prepare orders and deliver to different outlets.

A joint venture can be as formal or informal as the contributing partners want it to be. Producers could come together to discuss and agree the joint venture with a wholesale company that already runs vehicles in Gwynedd daily.

Working closely with a partner along the supply chain can encourage more innovation which appears rather lacking at present.

vi) LOCAL FOOD AND DRINK EXCHANGE - This innovative model offers a means of bringing together the large number of small producers in Gwynedd in an organised way. Despite that, it requires a high level of intervention, and should only be considered if there is a demand for, and interest in it, from the producers.

Creating a local food exchange means that one individual or institution would have to take the lead and co-ordinate the provision by local producers so that produce supplied corresponds with customers' different requirements, such as restaurants and shops. Basically, that individual would be undertaking a role similar to an agent or broker, and working closely with both the producers and customers.

By channelling large number of producers through one forum, it would be possible to serve and satisfy a large number of customers. Perhaps one cake producer would be unable to supply one large hotel in Llandudno on its own, for example, but by supplying through the Exchange, it could work in partnership with another baker and ensure that the hotel receives a continuous supply of produce throughout the season.

There are very few examples of this in Wales, and it could be argued to a degree that the role described here is that of a wholesaler. However, in this case, the difference is that the Exchange would be working closely with local producers in order to supply a completely unique produce that isn't available anywhere else. It is not cost effective for the majority of wholesalers to offer this type of service, so there is a possible gap in the market, provided there is an adequate number of committed producers available.

It could also be possible for the exchange to consider operating in a flexible way by taking advantage of suppliers' present resources. For example, perhaps one producer has a van and might be willing to take responsibility for deliveries. An exchange's main goal would be to co-ordinate and deliver supplies, but it could also consider providing other services for producers, such as preparing monthly **paperwork and packaging**.

8. Other opportunities for collaboration

The list below highlights other opportunities that have emerged during the completion of this brief work:

i) Assessing the use of transport vehicles – There appears to be varying opinions on the opportunities that exist for using lorries to back haul. As Gwynedd is a marginal area, it would be useful to try and establish whether there is a trend in the way lorries tend to travel empty. Do they arrive empty in Gwynedd to pick up produce or do they travel empty from Gwynedd after delivering? It should be possible to make a similar comparison with delivery vehicles generally. Usually, transport companies offer very good prices if it means that an empty lorry is travelling with a load.

ii) Vending machines and honesty shelves – even though this may not be specifically a matter of transport, the opportunity still exists for building on the pilot work done with a vending machine with AGW's support in 2019 at the Nant-y-Bîg camp site at Trwyn Cilan near Abersoch. The conclusion was that it is possible for the combination of a vending machine and honesty shelves, with the correct infrastructure such as a CCTV system, to work commercially. With discussion on vending technology continuing in the food and drink sector, there is room to learn from the first pilot and to pilot further development of this concept under different circumstances.

It was noted, as part of the pilot appraisal, that there is an opportunity to try and marry 'Network of Things' technology with this model of selling to facilitate the work of managing and co-ordinating such a site. By using sensors, it would be possible to keep a record of the honesty fridge temperatures for example, and also of the site's pattern of use, such as how often the entrance door is opened and closed each day.

The pilot highlighted that the food and drink retail sector offers opportunities that the supermarkets are perhaps not flexible enough to make use of. It looks likely that there is an opportunity to develop innovative retail models to provide better services in the countryside and to create commercial opportunities for retailers and producers.

A copy of the report made on the Nant-y-Bîg pilot is available through AGW.

iii) Honesty box - an interesting example of how to reach customers is the app 'My Honesty Box' from New Zealand. The app "My Honesty Box" was set up to enable customers to buy items with their mobile phones. This meant that producers could sell boxes of their produce in any location, which then opens new challenges with transport and reaching the customer.

The app provides a QR code to be printed on each box and the seller leaves the boxes for sale in unusual places such as a stand on the side of the road, camp sites, near walk / bike paths. The customer registers with the Company, then scans the QR code before paying with a credit card.

This is an interesting platform that can offer a new selling model for small, rural businesses in Gwynedd. An app like this is a good method for making honesty boxes accessible to customers at a time when cash is being used less and less in society. Here is the link with more details.

<https://www.myhonestybox.co.nz/ui/home/index>

iv) "what3words" innovative mapping system- the company behind what3words has developed a simple system to identify any location on the planet measuring 3 meters by 3 meters by using the three word reference. The system tries to rectify the lack of precision in existing addressing system. We are all familiar with the common problem of finding a rural location using only, for example, a post code.

There seems to be a momentum behind the company, with businesses such as "The AA" beginning to use it as a means of finding the exact location of broken down cars. It saves time in searching and is also a much better and safer service.

There is an opportunity here to be at the forefront in adopting and using the transformative opportunity such a system offers, especially in a rural area and also an area which welcomes so many tourists.

By using a "what3words" reference, the exact location of a tent or caravan on a holiday site can be found to offer a delivery service. Similarly, locations on the Coastal Path and beaches can be defined. When events can be held once again, a person or a group of people will be able to use the "what3words" system to show exactly where they are in the event, so opening the door to being able to offer a delivery service.

Simply, "what3words" presents an opportunity to redefine transportation rules, an opportunity to give an advantage that Gwynedd producers should grasp. And, of course, there is much talk that "what3words" or a similar system will open the door to drone deliveries in future.

This link contains further information:

<https://what3words.com/business/logistics/>

v) Mobile payments – The choice of payment methods is expanding. There is a connection between attempting to develop new systems of transporting food and drink with mobile payments. It can open the door to different models, such as the old fashion concept of a 'mobile shop' which seems

to have caught on again in parts of Britain. The technology is also key to a sales model through a vending machine or honesty shop.

The five prominent providers in this field at present are Apple Pay, Google Pay, PayPal, Venmo and Samsung Pay.

The simplicity and speed of the paying process with this technology of has led to more and more customers using it. It is also becoming increasingly important for business selling on line to be able to offer this sort of choice.

vi) Avoid transporting completely – One possible response to the food and drink transportation problem is to try and completely remove the need to transport.

People are increasingly interested in growing their own food. Not everyone has a garden and the period when crops can be grown in the open air is limited. Despite this, Menter Môn has already implemented a project trialling and promoting vertical farming. The team leading the project have already identified an opportunity to try and develop innovative growing systems for domestic situations. LEADER is at present funding two people from Gwynedd to trial building such systems under the banner “TechTyfu Challenge”. Is there an opportunity to support this work further as an opportunity for the agri-food sector in the area?

With sales of coffee making machines and ice cream making machines increasing, there may be an opportunity to abolish the need for transport by enabling people to produce and process food themselves. Similarly, the growing technology could be offered to restaurants and cafes in the area.

vii) 'Distributed Ledger Technology' – Agriculture, as part of the world wide food supply chain, depends a lot on recording and tracking.

Ledgers were used (in books originally) throughout history as a data bank for the chain, recording every aspect of business transaction, especially finance.

The evolution from this system is classified ledgers, where such records can be shared across many institutions. These are electronic ledgers, where the information is encrypted by electronic safety protocols such as 'keys' and 'signatures' which control what any person who has access to the shared ledger can do with it.

The system takes advantage of 'block chain' technology, which shares transactions in 'blocks' protected with a cryptographic signature. The key advantage this technology has over all other transactions, is that the ledger is created and that every transaction is added automatically to the ledger once it is completed.

Then the ledger can be distributed in blocks which means that no other entity can interfere with the process nor ever access all the pieces of the ledger that would be required to change it, ensuring the validity of transactions far beyond any other existing system.

An example of this technology at work that is relevant to the supply chain in Gwynedd is the red meat block chain model offered for farming beef in Australia. Classified ledger technology can be applied to almost all transactions in the food supply chain, improving safety, traceability and trust.

It is a technology that could transform the transporting process and it is a field that is attracting a great deal of interest at present. IBM has recently launched a 'block chain' solution especially for food producers under the title "IBM Food Trust". It is possible to consider the technology as a way of adding value for the Customer and a means of tracking the transporting process.

I can see a situation arising, especially in the red meat sector which has suffered many blows and scandals recently, such as the 'horse meat' and 'false farms', where the 'block chain' system would offer a guarantee of transparency of sources and provide validity for the buyer and the customer who will be eating the meat. If meat producers from Gwynedd offered a supply of red meat supported by the 'block chain' system, I can see commercial buyers knocking on their doors wanting to be part of it.

viii) Delivery Drones – this is an idea that has captured the imagination of many food businesses for transforming the method of transporting food, although we are many years away from seeing it operating commercially.

I mention this here because the situation in Gwynedd is slightly different to other areas of Wales and Britain. The County has a good network of people who are interested in and who make a living from drones and AGW is already active in the field with the 'Drone Academy' and, also, the resources and air space at Llanbedr near Harlech is a testing ground second to none for pioneering drones.

At present, it is international companies with deep pockets that trial drones for transporting food. According to Amazon and Uber, the potential for cost savings and improved convenience is huge. In America, the cost of sending a pack of food is about \$6 to \$8 on average, taking into account preparing the order and paying for delivery. With drones, companies like these believe the cost of delivery could be reduced to less than \$1.

Practically, a drone can deliver anything within reason. It is present legislation and flying rules that are limiting this. Also, systems haven't yet been developed to enable this to be a realistic possibility. One development that could help is the "what3words" system of mapping the world as mentioned earlier.

Flirtey is one company that is already offering a delivery service in New Zealand and America, and has received the relevant permissions to do so. At present, deliveries must stay within the field of vision of the drone driver.

Other companies to keep an eye on are FlyTrex and Alphabet, who owns Google.

Attempts are under way at present to develop air traffic control systems for drones, which would provide the structure for their development. In the meantime, one concern that has been expressed is the effect of drone traffic on birds. With conservation so important in Gwynedd, with regards skills provision, is there is a 'niche' opportunity here for the area to lead the work of assessing the effect, if any, on wild birds?

For food transportation, would it be possible to give food producers' profile a boost by trialling short deliveries in the area around Llanbedr? Or perhaps offering a special picnic experience in a rural area, served by a drone sandwiches, cakes and drinks?

CONCLUSION

The situation created by Covid 19 is a golden opportunity to experiment with big ideas. Test, fail, succeed, learn, change. What Works (or doesn't) and why. What can we learn from this to re-design food systems? Experimenting our way into the future can and should be the way forward.

Covid 19 has disrupted food systems everywhere. But it is also an unprecedented opportunity for experimenting, a space in time when direct need has sparked responses never seen before, a base to redesign food systems for the better and a wide readiness by all partners in the chain to re-assess.

Alongside these changes, the agri-food world is going through a revolution at present – familiar agricultural practices are nearing a threshold moment, a new wave of technology waiting to revolutionize, similar to the mechanization revolution in the last century.

Labelled agriculture 4.0, the new revolution will continue the trend for less and less human handling, more information technology developing and spreading into the running and management of farm businesses and a more connected food supply chain than ever before.

AGW has already developed close contacts with Coleg Glynllifon in response to these changes and, of course, this should be continued, and possibly strengthened with further aspects of the food and drink chain. Work at Glynllifon could fit in well with the plans to build a Rural Economy Hub there in the future under the North Wales Growth Plan.

After spending some time considering food and drink transportation in Gwynedd, nothing brought up by local producers seems to need immediate attention. Producers seem to have shown amazing resourcefulness, speed and resilience in responding to the challenges. Perhaps as a population in a marginal area, and the fact that a large proportion of the businesses are micro / small, we should not be surprised at the ability of indigenous businesses to adapt quickly.

Even so, it appears that producers agree that transport is an expensive burden to bear, but this does not seem to be a challenge exclusive to Gwynedd. It is a challenge for every food and drink producer.

It also appears that producers are willing and open to discuss, network and collaborate on new ideas. Perhaps one impact of the Covid 19 period is that it has encouraged more to think of new ideas and highlighted that more collaboration is required.

We saw this willingness with the Nant-y-Big Vending Machine project – and although encouraging networking and convening producer meetings was not a

specific goal, this happened naturally with a cluster of producers being very willing to frequent hygiene training as part of the preparation work. After the training, an extended informal discussion ensued, with everyone sharing ideas and various experiences. There are dynamic food and drink businesses in Gwynedd with a pioneering spirit ready to cut a new furrow.

Considering that 'transportation' is the subject discussed here, and that the emphasis in AGW's work is to pilot, teach and share innovation for the good of Gwynedd's economy, then I would suggest the 3 following ideas / fields as most suitable to be considered as possible pilot projects in future.

- Pilot 'What 3 Words - use the innovative mapping system 'what3words' to pilot new opportunities in Gwynedd.
- Pilot 'Honesty Shop' over Christmas – build on the vending pilot at Nant-y-Bîg by evolving the model to create Honesty Shop for a month on the High Street in Gwynedd. The concept could include a mixture of honesty fridges and honesty shelves, avoiding the cost of a vending machine. With the Covid 19 restrictions and the nervousness of most people to go out to shop, this model could be even more suitable as it would be possible to control entry to the shop on the basis of 'one out, one in' and run a system allowing in only one customer or customers from the same home / bubble. The pilot could contribute to the challenge of reviving High Streets that have suffered badly from Covid 19 and could offer new ways to producers of selling and transporting food and drink products. Highlighting a new model for retailing could offer possible opportunities for rural villages who have seen all their shops close over the years.
- Pilot 'Picnic with a Drone' – another opportunity to build on former AGW work in the field of drones, and this time boosting attempts to think innovatively about methods of delivery and to put Gwynedd at the front of the battle to use drones. The budding idea is to hold a picnic in an attractive open spot such as the lawn of Penrhyn Castle or by Llyn Tegid, and provide an unique eating experience which also lessens the risks of Covid 19. By choosing a spot beforehand (it would include a 'gazebo' in case of rain) customers could arrive and walk to their personal spot, set up their chairs / blankets themselves and then be served by a drone controlled by a person who would keep an eye on it at all times. Customers would have the security of being at least 2m away from another customer and avoid coming into close contact with staff. The objective of the pilot would be to highlight possible delivery opportunities with a drone, encourage discussion, imagine the possibilities and learn from actually doing the process, with local food businesses as part of it.