

# The multi-scalar challenges faced by farming in Wales, will the future Welsh Agricultural Policy suffice on its own to attain a sustainable agricultural sector.

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COUNTRYSIDE  
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Llywodraeth Cymru  
Welsh Government

Figure 1: Situation map of Wales (Ordnance survey)



- A devolved traditionally pastoral nation of the UK with all types of livestock.  
- Family farms

1.1) Outline of some long-term challenges facing farming in Wales identified by desk-study; different shades of green for livestock

North Wales Snowdonia (Eryri), mountainous shade of green



South Wales Pembrokeshire (Sir Penfro), different hills

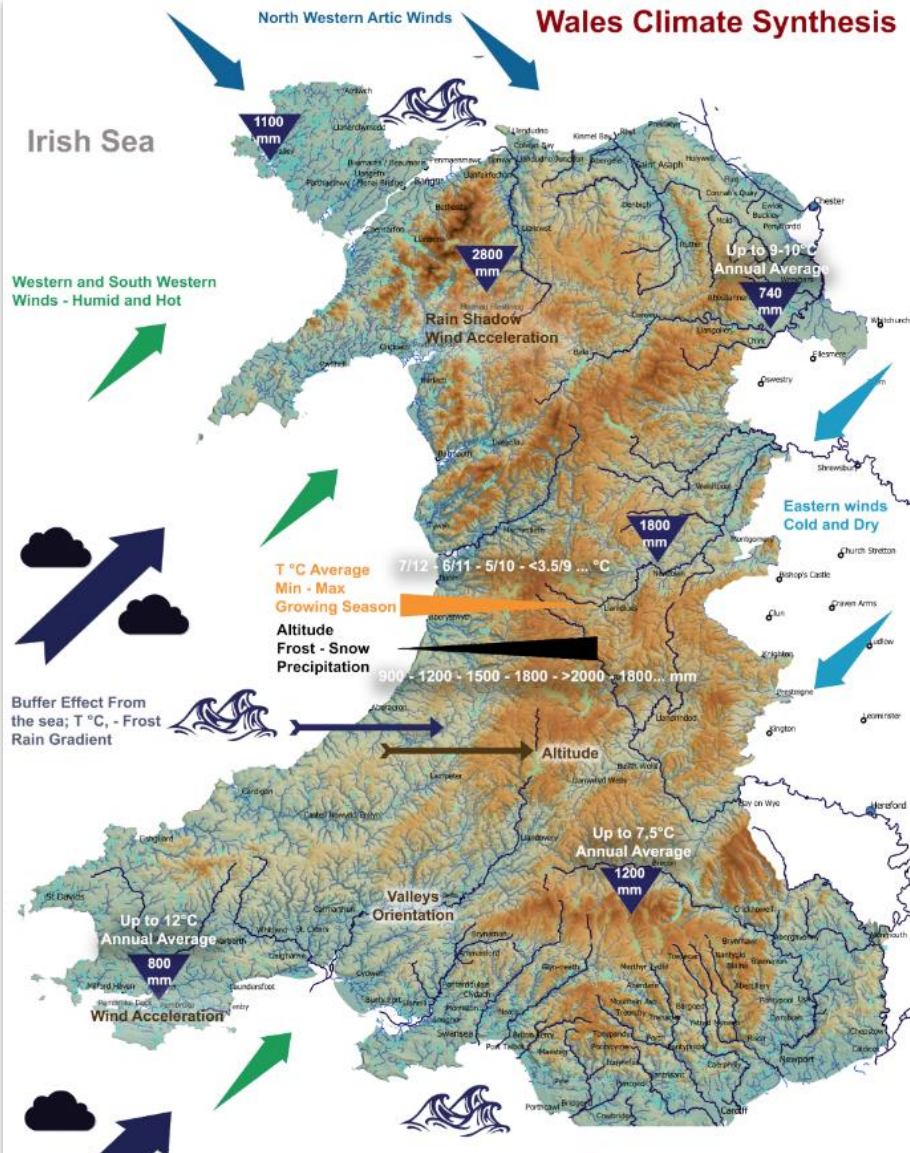


Figure 1: Map of the Welsh relief combined with climate characteristics (By the author)

# 1.1) Outline of some long-term challenges facing farming in Wales identified by desk-study; change in the long-term model of farming – less, older farmers, less traditional livestock

Figure 1: Map of the evolution of the number of farms Wales from 2002 to 2018

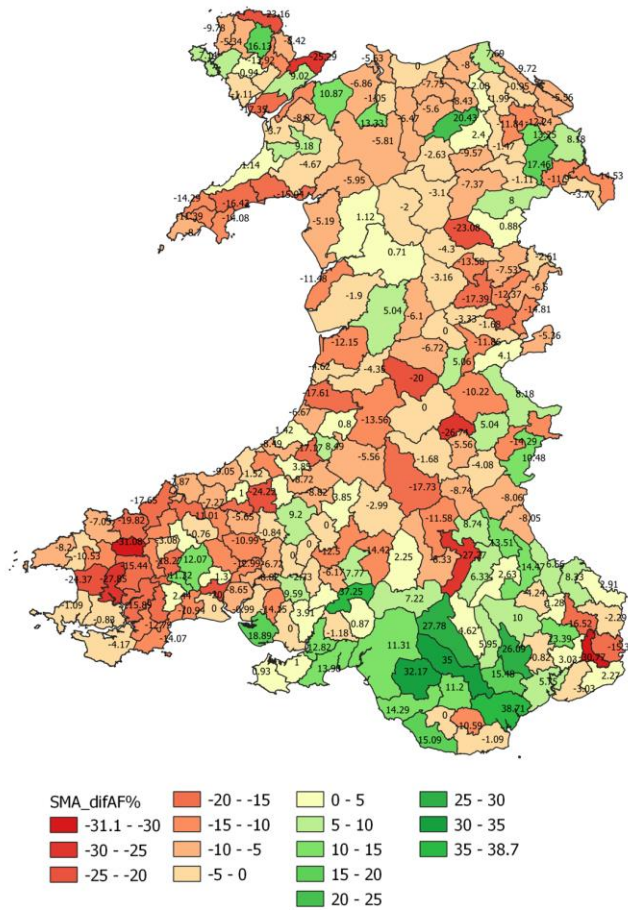


Figure 3: Map of the evolution of the number of suckler cows in Wales from 2002 to 2018

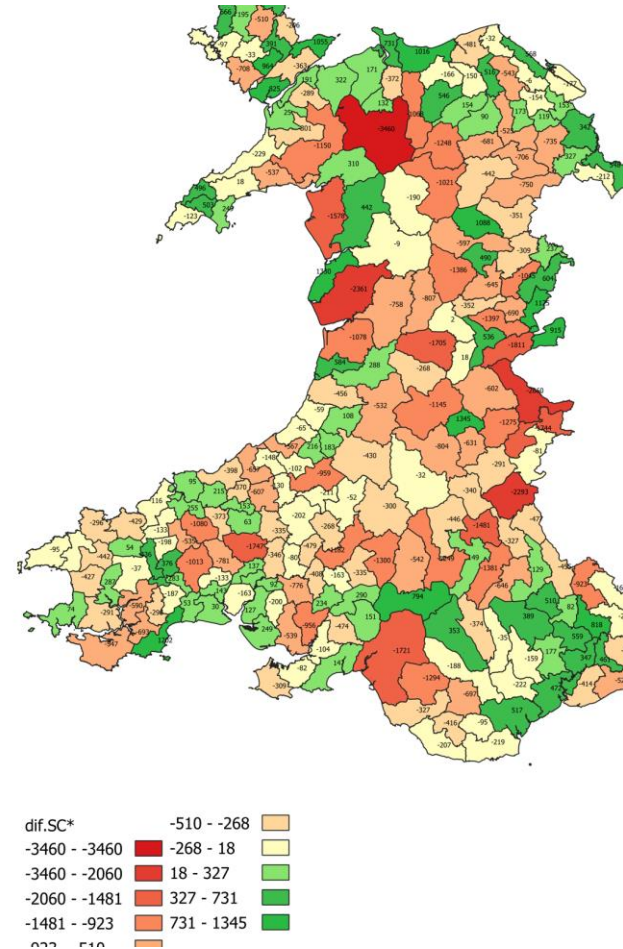
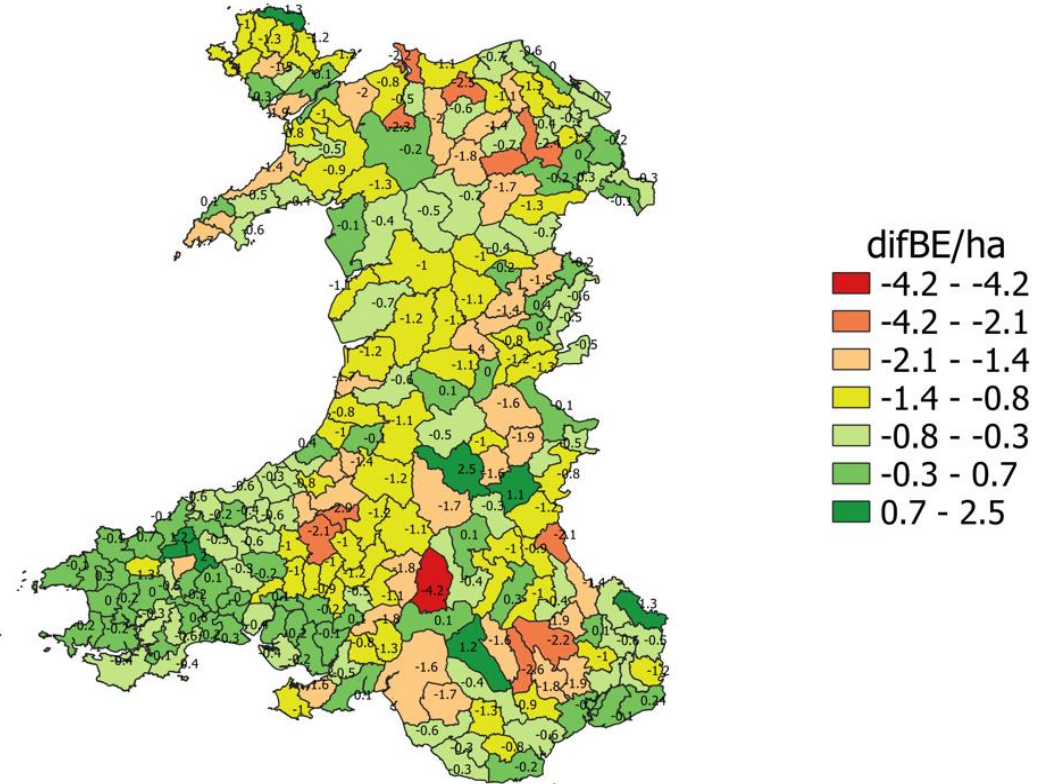


Figure 4: Map of the difference in terms of breeding ewes stocking rate over Wales from 2002 to 2018

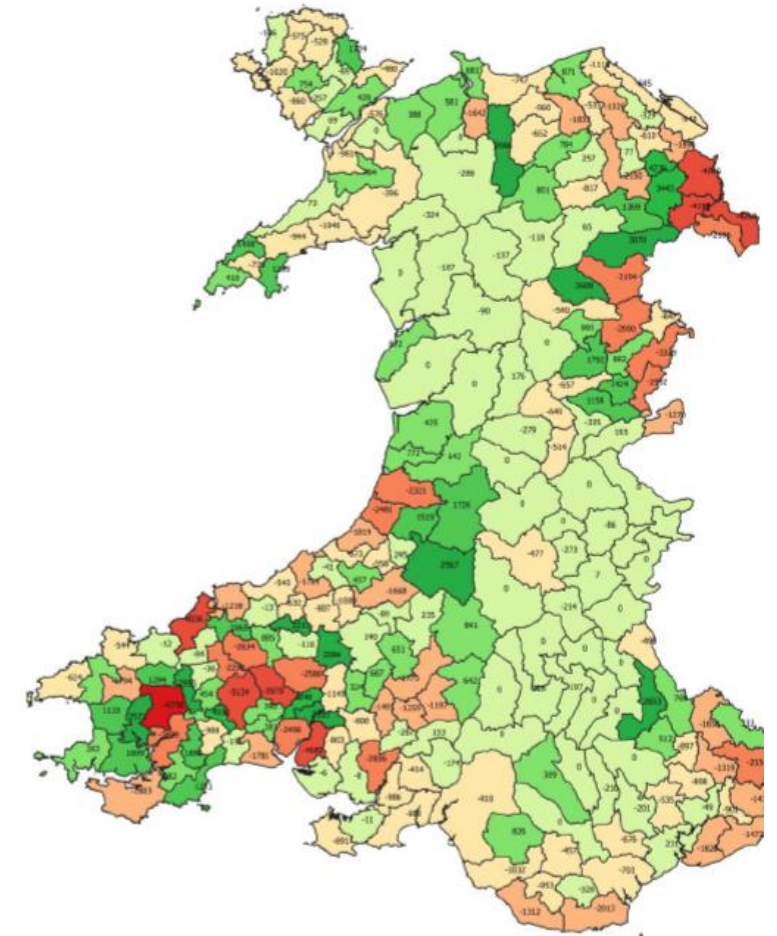


The average age of Welsh farmers is over 60 with just 3 percent of farmers under the age of 35. (WG, 2021)

## 1.1) Outline of some long-term challenges facing farming in Wales identified by desk-study; But the development of diversification and alternative productions

- **Receding traditional land** use particularly in some areas and the strong development of **alternative productions or diversifications** (use latest stats)
- Contrasted picture in between areas in terms of trends  
**Territorialised**
- **Trends debate around land sparing/land sharing** quite strong which can be seen in the conferences for example. Looking at evolution trends we can see **polarisation of land use**, appetite for land
- // with some areas of the EU

Figure 5: Evolution of the number of dairy cows in Wales from 2002 to 2018 (WG, 2018)



dif.DC\*  
-6736 - -6736  
-6736 - -3979  
-3979 - -2259  
-2259 - -1197

-396 - 257  
257 - 993  
993 - 1893  
1893 - 3070  
3070 - 4550

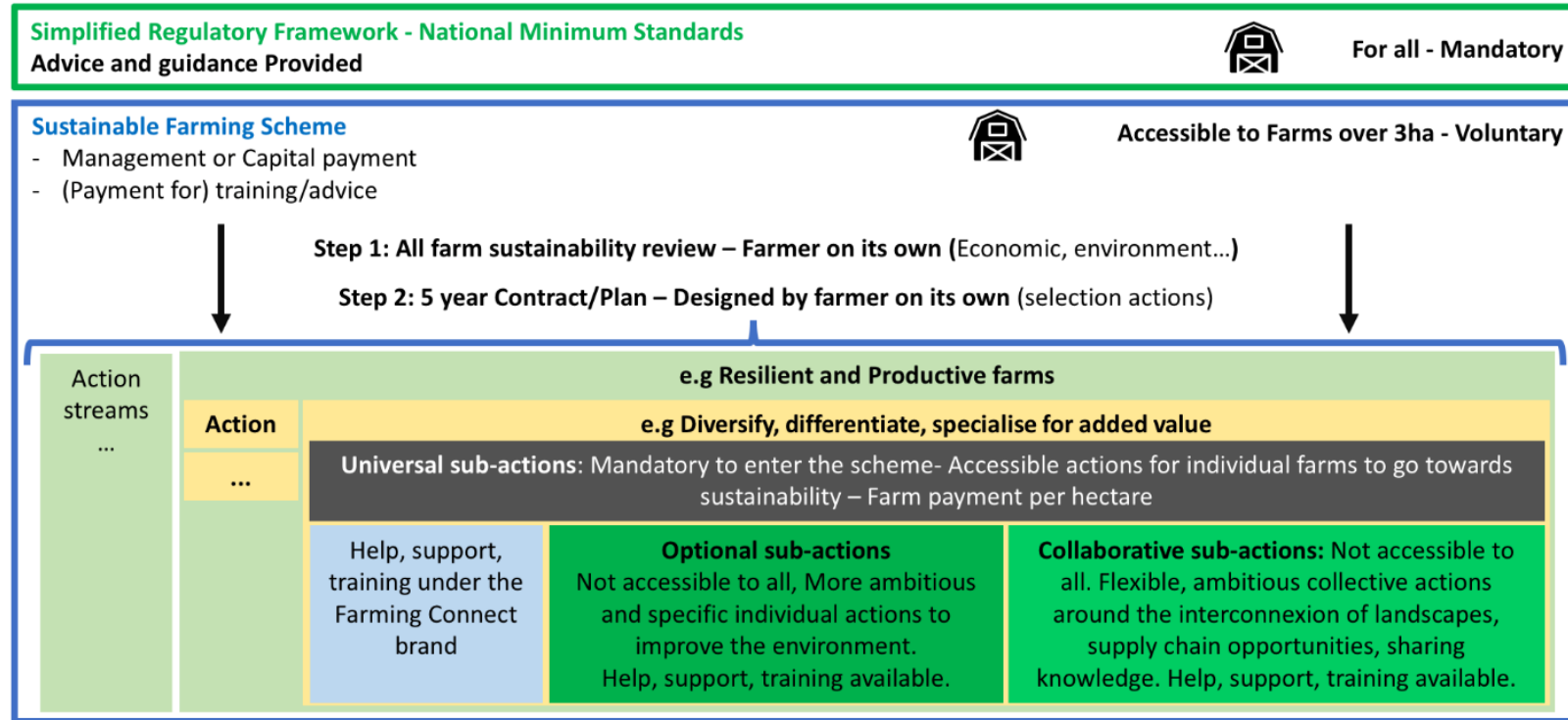


## 1.2) Is Brexit a breaking point in terms of socio-economic environment ? The sustainable Farming Scheme the future Welsh Government policy

- in terms of goals
- Very different goals compared to England
- 5 broad action streams
- Universal layer where everyone should do 12 principal actions
- Optional and collaborative layers
- Payments per hectare vs other payments models
- Missing elements (Organic, Young farmers scheme)

Figure 7: General structure of the future Sustainable Farming Scheme in Wales (By the author from documents from the Welsh Government)

Wales Agricultural Policy –Proposal 07/22



Reduce on farm emissions and maximise carbon sequestration

Benefit people, animals and places

Reduce, reuse and recycle inputs, nutrients and waste

Resilient and productive farms

Protect and enhance the farm ecosystem

## 1.2) Is Brexit a breaking point in terms of socio-economic environment ? Policy but also market and over factors

2018

2020

2022

Climate Change – extreme weather events  
Debate around livestock and carbon  
Land market and demand from the land

Fluctuating market conditions and market access with supply-chain issues for inputs and outputs  
Food security

FBS survey (RICA) long-term issues around profitability of the sector

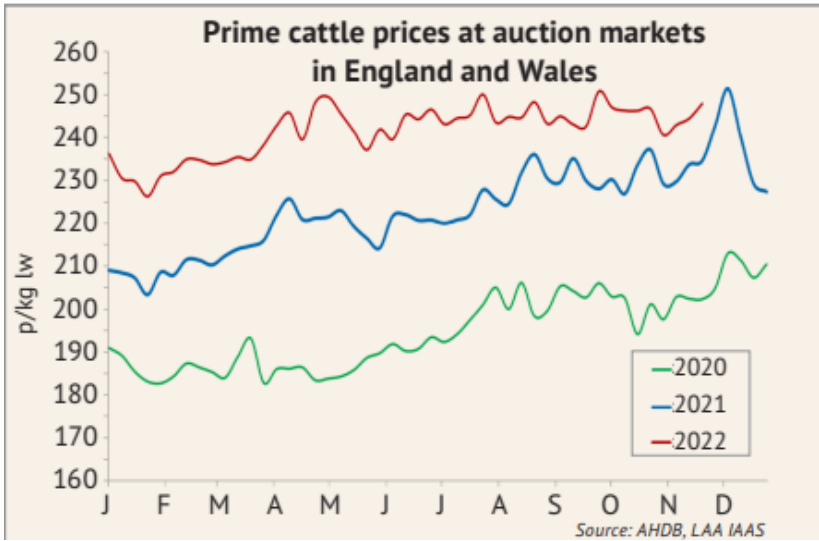
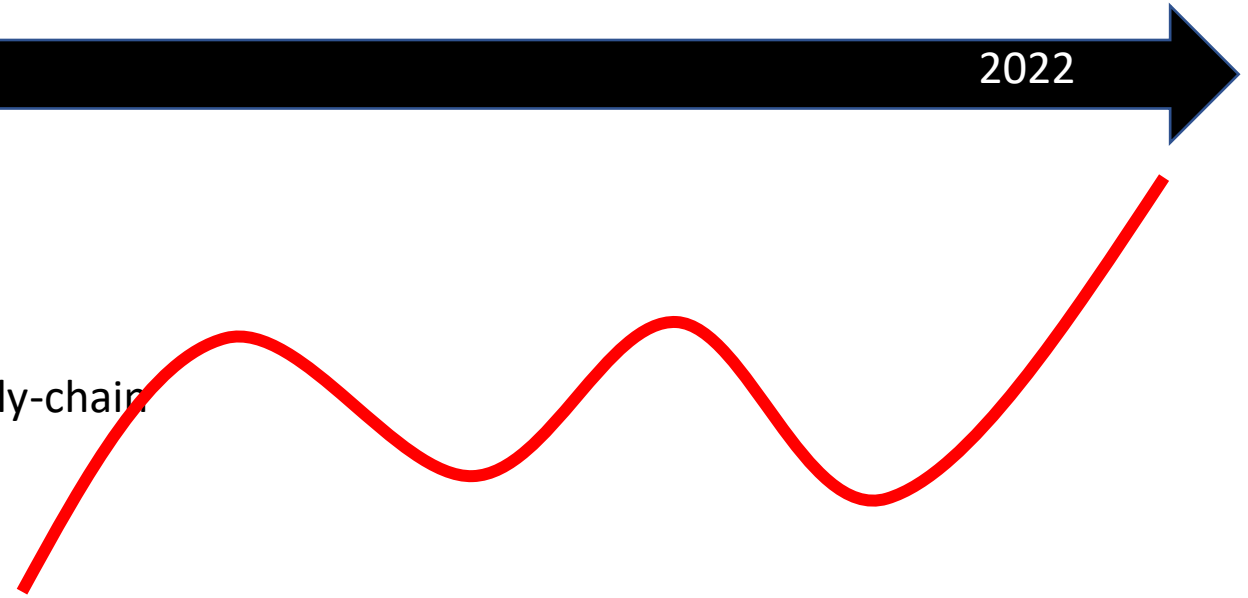
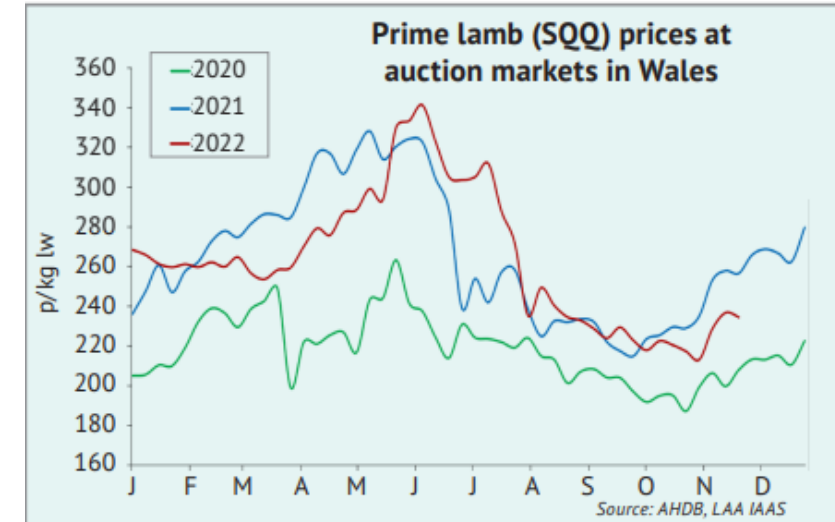


Figure 8 and 9: Evolution of agricultural output prices in England and Wales; beef on the left, lamb on the right (HCC, 2022)





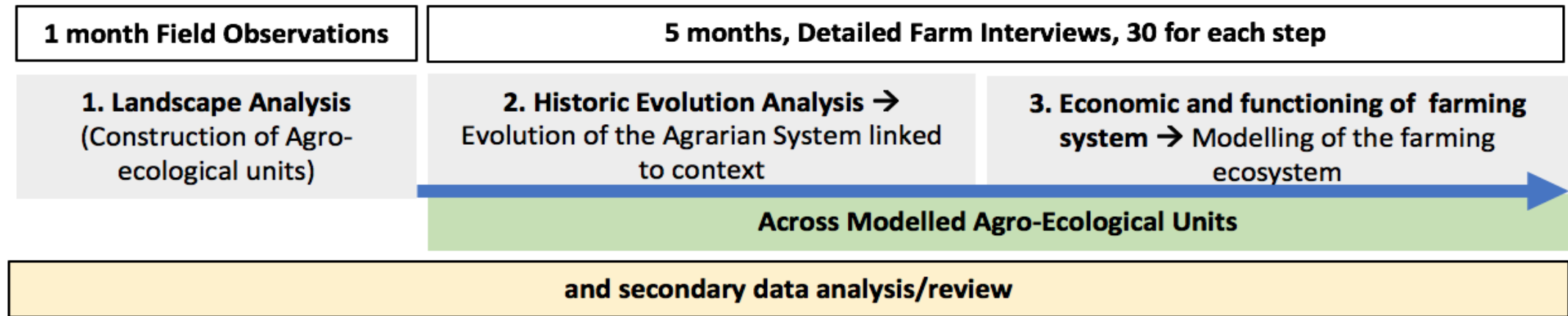
### 1.3) Research question reminder

- What are the **challenges faced by the territorialised agriculture in Wales**, at what scales do they originate, what are the **trends of agricultural development attached**?
- What are the **characteristics of the future farming environment in Wales**?
- What will be the interest in **the scheme and the transformation likely to happen** linked to the future Welsh agricultural policy, has this scheme the potential to be transformative?



## 2) Methodology: Using the comparative agriculture, agrarian diagnosis holistic case-study approach to analyse the case-studies selected to represent the different trends of agrarian change

Figure 10: The agrarian diagnosis - detailed study of a small agricultural area (the authors, from Cochet and Devienne 2007)



**Research method: The agrarian diagnosis to study the local impact of multi-scalar challenges and the comparative agriculture method to integrate them at an all-Wales scale (Devienne and Cochet, 2007)**

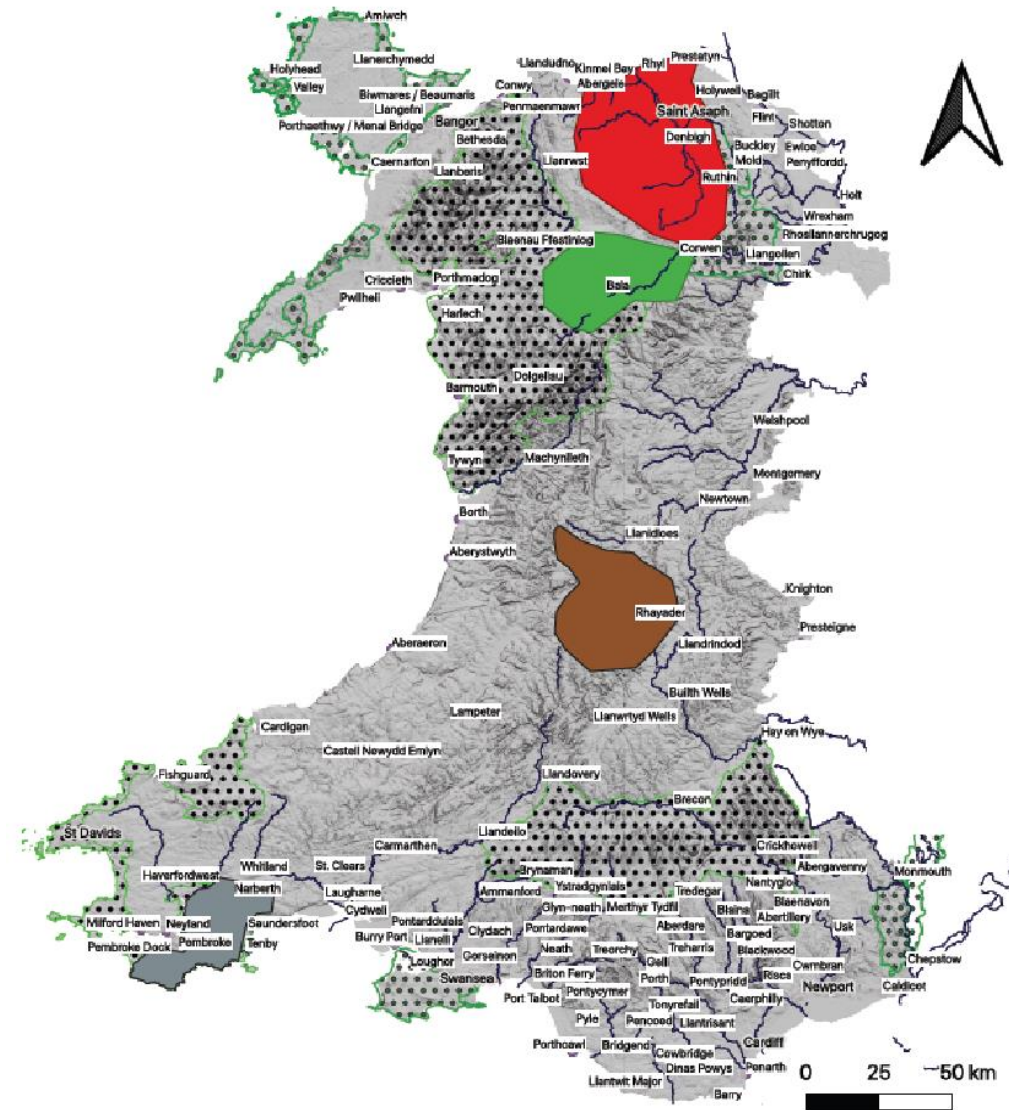
- To understand interlinked environmental, economic and social aspects of farming in local areas as well as integrating this with history, culture, policies or the wider context. The agrarian system is the key integrating notion.
- Understand how it appeared from the past in relation to internal and external factors, how it operates today and what are the possibilities for evolution. A territorialised analysis of the impact. .
- diversity of landscapes and designations, trends in terms of agricultural development, strong traditional orientations and new developments → Selection CS areas

## 2) Methodology: Using the comparative agriculture method

From the literature review and statistical analysis we selected the CS areas;

- **South Pembrokeshire (2019):** A lowland “bocage” landscape typical of West Wales. A range of lowland agricultural productions.
- **Bala (2020)** is a rough upland area isolated and sparsely near Snowdonia National Park, farming is the dominant activity along with tourism. Features mostly beef and sheep family farms.
- **The Vale of Clwyd (2021)** high production potential and a favourable micro-climate with a lush lowland valley surrounded by hills. Very different levels of outputs (from high-yield dairying to extensive beef and sheep).
- **The Cambrian Mountain(2022)** An upland smoother than Bala’s landscapes, with lower altitude differences in the landscape but a less lush alluvial valley due to its higher altitude. The area is focused on traditional grazing livestock but also poultry units and tourism activity.

Map of the study areas in Wales (By the author from OS, EU elevation and Welsh government data)



Legend:

- Study Area - Pembrokeshire
- Study Area - Cambrian Mountain Area
- Study Area - Vale of Clwyd
- Study Area - Bala - Snowdonia
- Towns
- Cities
- Rivers
- National Parks in Wales
- Area of Outstanding National Beauty in Wales

## 2.1) Identify and understand the multi-scalar challenges and drivers at play in representative Welsh landscapes, what course of agrarian change are we witnessing

**Farming for food part of the identity of Wales** but also the result of centuries of integration with agri-food systems, and socio-economic systems in the UK and the world: Wales small by the population size and high self-sufficiency within agro-ecological constraints.

- **Feudal system** origin of the organization of the countryside and the rights to use it - **inequalities**
- **Land use enshrined within agro-ecological potential** developed through time and with
- **Farming a key part of the identity and culture of wales (Welsh Language)**
- Integration gradual of study areas within England
- Differentiation of production type but still within this framework



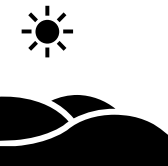

## 2.1) Identify and understand the multi-scalar challenges and drivers at play in representative Welsh landscapes, what course of agrarian change are we witnessing – Food focus

**A focus on mass food-production with the post-war productivity package and widespread artificialisation of land use, inputs and technology fuelled “improvements” on all sides.** Livestock production even more.

Regional specialization in livestock, simplification commodity

Growth in farm size reduction in number of people

Integration in food focused supply chain (nationalised)



Upland	Lowland
Bala	Pembrokeshire
Cambrian mountains	Vale of Clwyd (with hills)

## 2.1) Identify and understand the multi-scalar challenges and drivers at play in representative Welsh landscapes, what course of agrarian change are we witnessing – hollowing out

A post 1990's sector with a growing number of demand from the farmed environment, the end of production specific support but the appearance of many other opportunities.

World markets and supply chain **putting more pressure on farmers, more opportunistic support**. Albeit new niche markets/contracts develop with supply-chain – Supply chain moving out of Wales. **Hyper specialization** of farming systems in a challenging but more supportive market.

Costly access to **production factors** capitalization of farming difficult economics **New development of food focused farming system** (Dairy and poultry)

Development of opportunities outside of farming particularly in the UK – **Diversification/2<sup>nd</sup> Job** (Tourism, electricity)

**Dualisation of the land use (opportunities or market)**



Upland	Lowland
Bala (Div)	Pembrokeshire
Cambrian mountains (Div)	Vale of Clwyd (with hills)

A photograph of a rural landscape featuring several wind turbines in the background, a green field in the foreground, and a line of trees. The sky is clear and blue.

**Always in Wales; agro-ecological conditions as a lock-in, designated areas → An opportunity as well as a constraint**

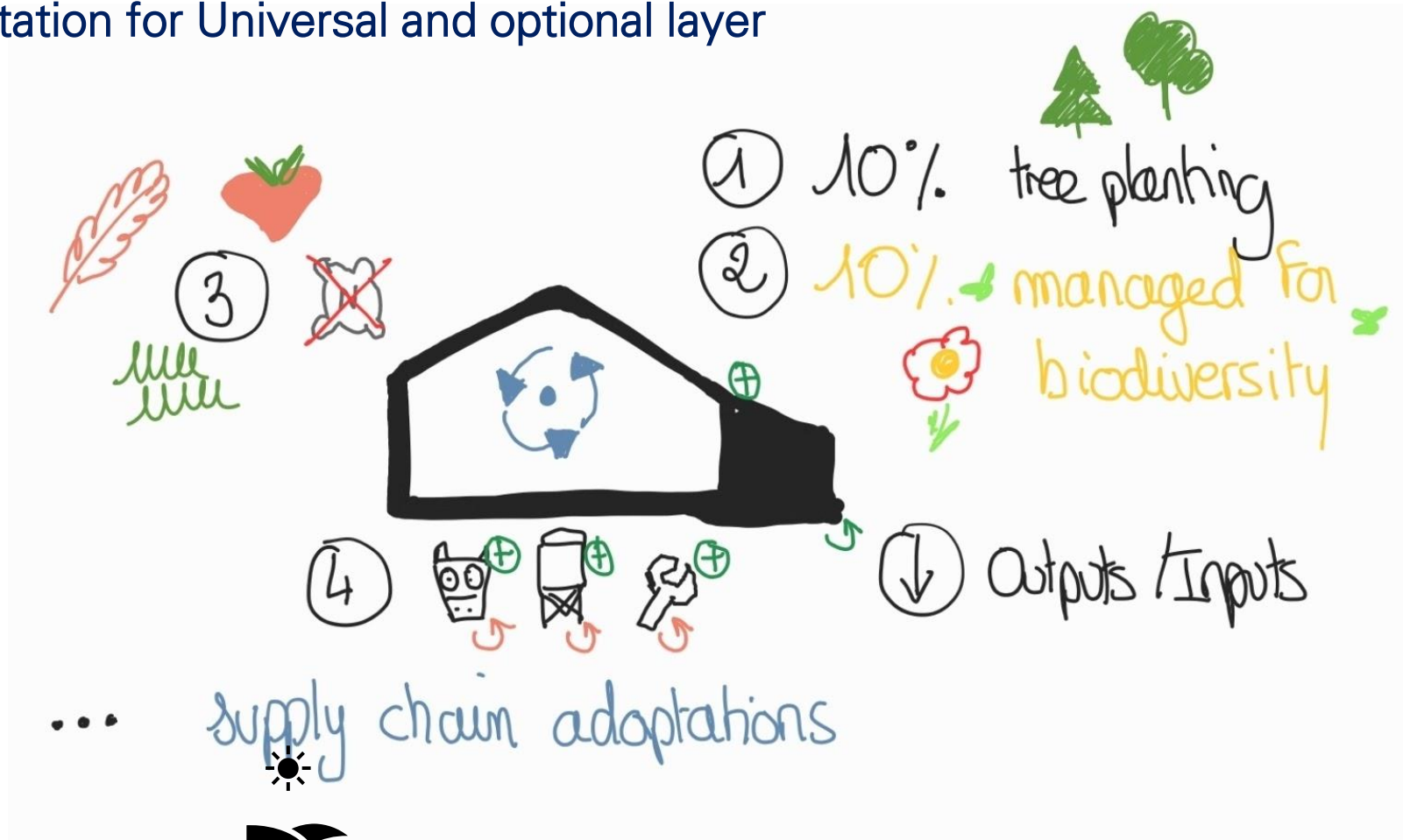
## 2.2) While providing as a result a territorialized impact assessment of the Welsh Government New policy: adoption, attractiveness, transformation of farming system to enter, economic analysis Scenario

Scheme – From basic CAP data of the study areas, combined with the SFS draft policy	
<b>Hypotheses</b>	Funding constant. Farmed area constant. Farm targeted similar Transaction cost, 10% for the Universal and 20% for the optional scheme 20% of the farm as tree planted or high ecological value
(% of the land)	60% Universal 30-35% Optional 5-10% Collective
<b>Universal Payment</b>	+ <b>£110<sub>2018</sub>/ha</b> Double the rate on the first 54ha – Hypothesis similar goal
<b>Optional Payment n°1</b>	+ <b>£120<sub>2018</sub>/ha</b> management payment and for capital work (not including contractors/inputs) for 54 first ha + <b>£20<sub>2018</sub>/ha</b> management payment and for capital work (not including K work paid) Higher payments level compared to Glastir but kept them within the funding capability (larger uptake). This has been designed to consider the balance between work required and high value elements.

A range of production system representing the challenges of the different study areas showcasing the territorialised conditions as well as the new challenges and development opportunities available.

2.2) While providing as a result a territorialized impact assessment of the Welsh Government New policy: adoption, attractiveness, transformation of farming system to enter, economic analysis

Scenario implementation for Universal and optional layer



Upland	Lowland
Bala	Pembrokeshire
Cambrian mountains	Vale of Clwyd (with hills)

Conditions less difficult to adapt for large/medium farms  
 Tenanted farms/Small farms  
 Where would hedges sit  
 Bottlenecks



## 2.2) While providing as a result a territorialized impact assessment of the Welsh Government New policy – : adoption, attractiveness, transformation of farming system to enter, economic analysis

**Table 1: Comparison of the level of added value and agricultural revenue per hectare to the Sustainable Farming Scheme and the level of transformation necessary to enter the scheme (By the author from fieldwork)**

**FFM: Medium Sized Family Farm JV: Jointventure SMH: Smallholding**

£2019	Dairy Spring Calving 500 DC - JV	Dairy Heifers Rearing and Sheep - FFM Fam	Beef Finisher and Sheep - Strip of land - Estate type Family	Organic beef and Sheep - Strip of land - Large FFM	Hens sheds, cattle finisher and ewes - Large FFM	local food Beef and Sheep - SMH	Hens local and Sheep - SMH	Dairy 200 DC All Year - FFM
Area	Hill North Wales	Upland	Vale of Clwyd with Mountain	Upland	Upland with Mountain	Lowland	Lowland or Hill	Lowland
<b>Added Value/ha</b>	1712	452	207	87	810	2082	1493	2033
<b>Agricultural Revenue/Ha</b>	821	509	310	272	775	1963	1368	1540
Level of transformation required to enter the SFS universal layer	High, sust, trees...	Small around inputs			V small around input.	Around inputs and trees		High, sust, trees
Possible level of the SFS Universal layer = 110/220 £/ha								
Other layers opportunities	Limited	High (Valuable ecosystem)			Limited	Limited	Limited	

## 2.2) While providing as a result a territorialized impact assessment of the Welsh Government New policy –Adoption, attractiveness, transformation of farming system to enter, economic analysis

High Prices	Low Prices
<p><b>Milk:</b> 126% - 38 pence/litre*</p> <p><b>Sheep:</b> 130% - 95 £/lamb*</p> <p><b>Beef:</b>120 % - 1200 £/Store*</p> <p><b>Input costs:</b> 130%</p> <p>Average price given by farmers depending on their product characteristics, in interviews.</p>	<p><b>Milk:</b> 95% - 26 pence/litre*</p> <p><b>Sheep:</b> 90% - £79/lamb*</p> <p><b>Beef:</b> 95% - £950/Store*</p> <p><b>Input costs:</b> 100%</p> <p>Market conditions selected as gathered from literature and interviews.</p>
<p>*Prices are purely indicative and do not reflect output pricing in the archetypes – prices do not represent top of the curve but more sustained levels</p> <p>**All prices would be converted to £2018 afterwards</p>	

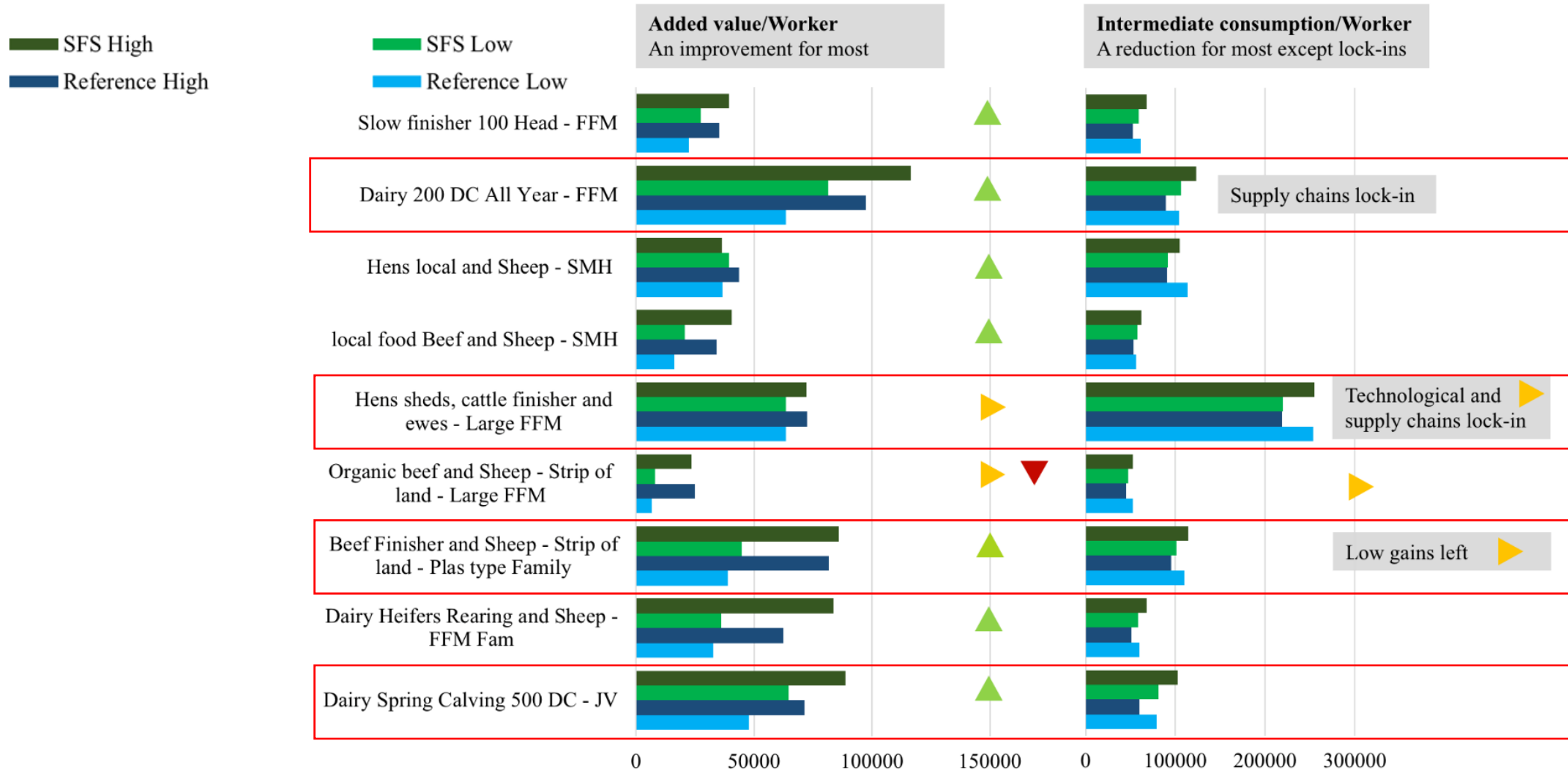
Those variations gave us 4 different scenarios to test on the farm archetypes mentioned above. The scenarios are as follow:

- Scenario 1: Reference Policy **high Prices**
- Scenario 2: Reference Policy **low Prices**
- Scenario 2: **New policy, the SFS, high prices**
- Scenario 3: **New policy, the SFS, low prices**

- *Low input prices will occur when prices are low...(mirroring long-term trends on commodity markets and sellers' pricing strategies - from fieldwork and secondary analysis, FAOSTAT, 2021)*
- *With the new scheme we expect that renting-out farmers will not be able to operate anymore, nevertheless this will trigger an increase (5-15%) in rent incorporating part of the subsidy payment depending on the location, the more land demand the higher the increase (Lowland/Urban>Upland). We also took into account the adaptation to the regulatory context.*

## 2.2) While providing as a result a territorialized impact assessment of the Welsh Government New policy : adoption, attractiveness, transformation of farming system to enter, economic analysis Added value generation and intermediate consumption

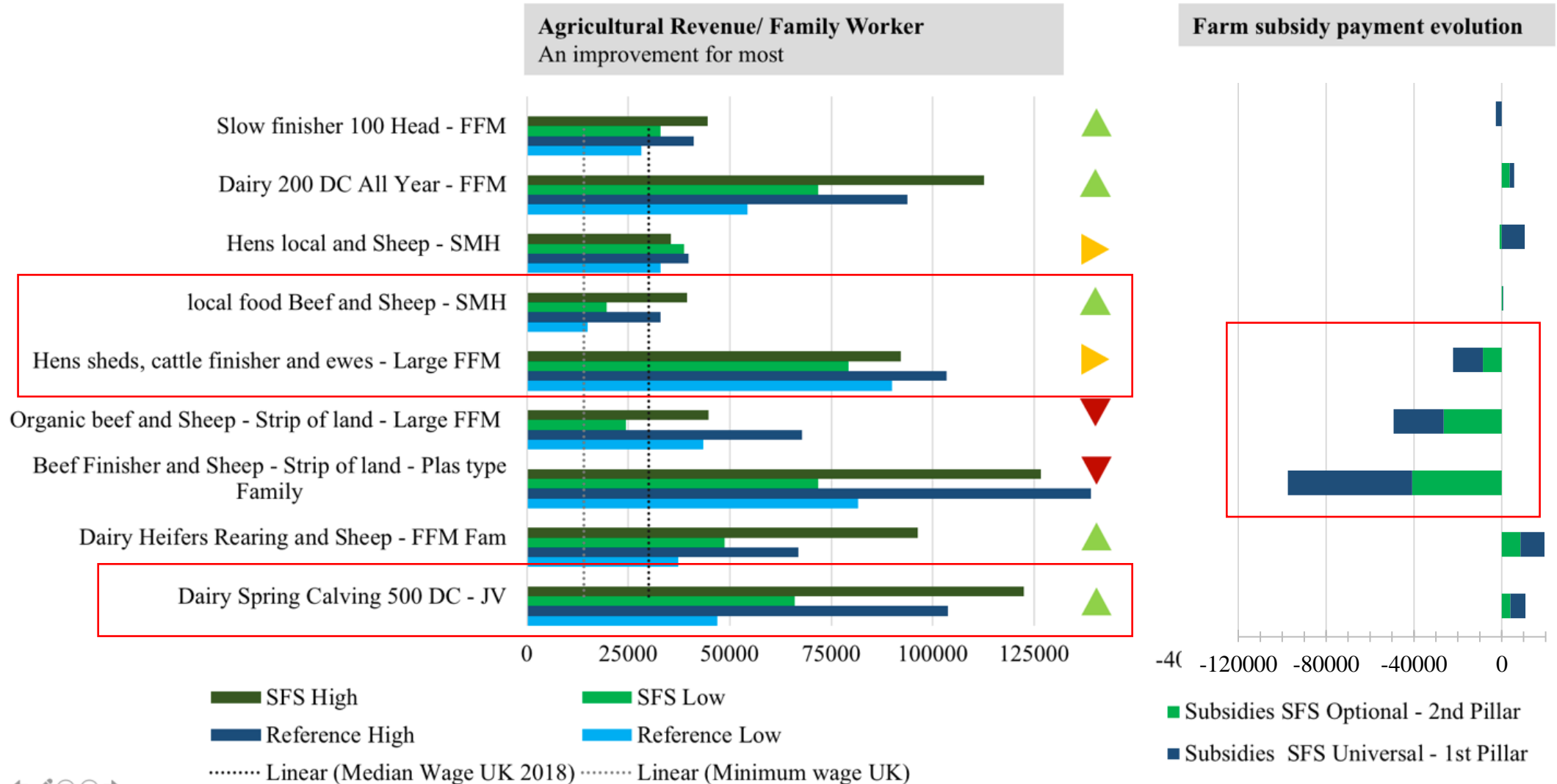
**Figure 11: Comparison of the Added Value/Worker and Intermediate Consumption/Worker in £2018 in the reference situation and with the scheme in two scenarios (from the archetypes modelled from the fieldwork)**



## 2.2) While providing as a result a territorialized impact assessment of the Welsh Government New policy : adoption, attractiveness, transformation of farming system to enter, economic analysis

### Agricultural income and subsidy payment

Figure 12: Comparison of the Agricultural Revenue/Family Worker and evolution of the farm subsidy payment in £2018 in the reference situation and with the scheme in two scenarios, (from the archetypes modelled from the fieldwork)



## Conclusions

- **Going towards sustainability and decarbonation there is little to drive a weaning of from fossil fuel. But the choice of scheme design meant there were definite improvement in terms of economic performance and agricultural revenue mostly linked to input substitution.**
- **The scheme as we have modelled corrects subsidies repartition imbalance.** There could be problems for organic farms that rely on subsidies and the financial sustainability issues attached to landholding are not resolved.
- **The scheme might have significant bottlenecks.** Lot of the actions require a standard or their terms to be designed or selected among those available in the industry. Does nothing to reduce
- It is necessary as the scheme current design constrains accessibility (tenancy / hectare threshold).
- If not a revolution, this scheme is trying to deal with political and funding challenges for Wales, its orientation is positive, integrative, and certainly innovative when comparing it to other schemes. With that in mind current inflation (Bank of England, 2022) is driving down the real value of the payments gradually which could limit its impact.

Thanks for listening. Feel free to ask questions now or later...

More resources <http://theolenormand.mystrikingly.com/>

Any additional questions feel free to contact me directly:

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