

## Extended Abstract

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<b>Paper/Poster Title</b>	Different shades of green? Differentiation of hill farming in North-Wales, what will be the impact of the future Welsh Agricultural policy?
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<b>Abstract</b>	<b>200 words max</b>
<p>In the last 20 years Welsh Hill farming has faced many challenges; the long-supported specialisation in beef and sheep production systems has been called into question as the policy focus shifted and markets offered poor returns. Drivers of evolution changed and some near-extinct enterprises reappeared in the Welsh hills (dairying, poultry...) linked to market and policy changes. Two in-depth agrarian diagnoses in upland and hill areas of North Wales (Bala and the Vale of Clwyd) show a differentiation of production systems. The seemingly homogenous pastoral landscape now sports different levels of management and land use intensity (in fodder output, stocking rates, livestock types,...). Farms have become increasingly polarised depending on their business opportunities, and this farmed landscape in Wales is changing rapidly. With the Brexit process and in the context of Covid, changes have intensified as the farming sector seeks to adapt and plan. We assess the likely impact of possible Welsh and UK governments' future policies, combined with the emerging market context, to understand their likely impact, using the typology of production systems in the landscapes studied. On this basis, we expect the trend of polarisation in the Welsh hills to continue, raising some challenges for those future policies. <i>200 words</i></p>	
<b>Keywords</b>	Agrarian Diagnosis, Policy Impact, Economic Performance, Case-Study, Farm based Approach, System Based Approach, Brexit
<b>JEL Code</b>	Q00 see: <a href="http://www.aeaweb.org/jel/guide/jel.php?class=Q">www.aeaweb.org/jel/guide/jel.php?class=Q</a> )
<b>Introduction</b>	<b>100 – 250 words</b>

North-Wales Hill farming is an arena of significant transformation that is only partially picked up in available statistics or literature (Welsh Government 2018). The policy context has changed significantly in the 2000s: the decoupling of subsidies and the development of CAP second pillar policies have been unfavourable for the intermediate upland areas of Wales, in between the lowlands and the high hills. The end of direct support to beef and sheep systems and volatile agricultural markets combined with relatively challenging agro-ecological conditions have led to an evolution of production systems away from the traditional beef and sheep ones that were favoured in previous decades (Midmore and Moore-Colyer, 2005), towards new and more diverse options.

The “traditional” upland farming systems return low profits and have a high dependence on subsidies, but they form a network of culturally embedded farms, managing high nature-value and multi-functional landscapes generating environmental and social public benefits (Vigani and Dwyer, 2018). In north Wales, the dominance of pastoral farming hasn’t changed -as the statistics show- but a landscape analysis helps us appreciate the scale of recent changes in those areas, with a wider range of production types, production systems and land management types, and different parts of the landscape showing many signs of either intensification or extensification, sometimes abandonment. With Brexit and an uncertain future, those changes were expected to intensify (ERAAMP, 2020). The pile-up of Covid and the implementation of Brexit is leading to widespread inputs increase and supply-chain challenges. 224 words

## Methodology

100 – 250 words

The paper addresses these research questions: What are the characteristics of the differentiation of land use and production systems among upland farms? What is driving the local evolution of land uses, and what is likely to happen in the future?

The French method of agrarian diagnosis (Cochet and Devienne, 2007) is an applied, fined-grained, systems-based approach to study agrarian landscapes (40-50 km<sup>2</sup>) and understand processes at play; Field study features three successive and interdependent steps.

1. Landscape reading: characterizing agro-ecological units in the landscape using field-observations and available literature.
2. Agrarian history: Understanding the evolution of landscape use and of the different types of production units. Historical farm interviews are conducted (c. 30) as semi-structured dialogues in which the technical, economic, and social development of each farm is discussed and triangulated by secondary data analysis, to understand production systems’ differentiation linked to the agro-ecological context, leading to a typology of current production systems.
3. Technical and economic analysis of production systems based on in-depth interviews: The previous typology enables the sampling of the farms to interview (c. 40). This step leads to a systemic and integrated understanding of operating logics (at different scales).

Intermediate uplands represent a gradation between Upland and Lowlands. We compare and contrast two such areas as case-studies: the Vale of Clwyd and the Upper Dee Valley in North-Wales. Scenarios based on the literature and secondary data consider the evolving situation and prospects for Welsh hill farming. Translating those scenarios into economic and regulatory consequences for production systems identified in the case studies. We can make assumptions on likely trends of evolution in these farming landscapes, production systems and consider how far they meet policy aspirations. *241 Words*

<b>Results</b>	<b>100 – 250 words</b>
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The historical analysis shows that after 2003, farms differentiated quickly responding to market and subsidy drivers, accelerating further after 2010-2013 following agricultural market fluctuation and the gradual ending of coupled subsidies that represented a considerable loss, barely compensated by second pillar schemes, that challenged the established beef and sheep farms (Lenormand et al. 2021).

In this defavourable context, farms that survive (or new entrants), have to increase their added value by either intensifying the use of the best agro-ecological units and/or invest more capital in specialised systems (spring calving dairy, heifer rearing, poultry). Many farms are not able to pursue those strategies, either retiring or going part-time. This selection is linked to the past agrarian history and socio-economic characteristics of farms (including landholding patterns).

Running our future scenarios in these landscapes suggests that most of the possible development routes available will continue to weaken the viability of “traditional” beef and sheep farms possibly leading to further evolution towards higher added value production with harmful environmental impacts, even in a situation of high input costs and more difficult market contexts, particularly in poultry. The extension of Nitrate Vulnerable Zone restrictions will not impact most of those farming systems heavily, given their ability to rent additional land from retiring farmers on which to spread manures and/or grow fodder (Lenormand et al. 2021). Beef and sheep production systems will lose ground even in relatively supportive policy scenarios, and there could be further retirement and diversification. *242 words*

<b>Discussion and Conclusion</b>	<b>100 – 250 words</b>
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Brexit is a new shock and is likely to lead to more challenging conditions for the Hill farming communities in Wales. Low intensity beef and sheep grazing systems are important in managing existing hill landscapes (Midmore and Moore-Colyer, 2005; Vigani and Dwyer, 2018), but the likely impact of post-Brexit scenarios seems to be a polarization of the farmed landscape, with a growing share used by higher added value production systems of higher land-use intensity.

In the light of further farm structural change and amalgamation of holdings, it seems likely that these areas will also absorb some of the anticipated increase in new land uses. The literature and data (e.g. ERAAMP 2020, NRW statistics, Manzoor et al. 2021) show that afforestation is gradually gathering pace in Wales. Although not yet in

North Wales, it might emerge within the polarization of these landscapes (Lenormand et al. 2021).

The Welsh government may wish to ensure that the Sustainable Farming Scheme, and the wider regulatory and market policy context within which it sits, are sensitive to the pressures upon intermediate upland farms in areas with natural constraints which are often facing trade-offs between production and conservation. The holistic Welsh policy approach will need to understand the challenges associated with these landscapes and seek to maintain a coherent and multi-functional mix of farm enterprises and related land management, to ensure the sustainability of the upland landscape, retaining jobs and farming communities, and the cultural and social values that these embody. *245 words*