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Economy, Trade, and Rural
Affairs Committee
Agricultural Pollution
Regulations

Evidence from: Individual
response

Presentation of the researcher:

I hold a Msc in farming sciences, agricultural policy, farming systems from AgroParisTech the leading French institute in those fields.

My PhD is a partnership between the CCRI, the Welsh Government (through the Environmental

Evidence Program - Land Management Reform Unit) and the CCF (Community and Countryside Foundation) aiming at assessing the impact of the Post-Brexit environment (policy and trade) on the Welsh farm's choice of evolution. My PhD aims at understanding Wales' farming evolution and functioning, consider post-Brexit implications on it and assess the potential impacts of the proposed new Sustainable Farming Scheme. I am supervised by Professor Janet Dwyer (CCRI), S. Devienne (AgroParisTech), Chris Short (CCRI), K. Watts (Welsh Government) and Dr. P. Williams (Bangor University). The PhD itself is multidisciplinary, bridging the gaps between farming sciences, social sciences and agri-economics.

To study my subject, I am using a French method called the "Agrarian Diagnosis", which is a holistic, integrative, fieldwork-based approach to farming research (Cochet and Devienne, 2005). As part of my fieldwork I have been interviewing approximately 200 different farms across 3 very different study areas. In 2019 I worked on South-Pembrokeshire, a Welsh lowland with a very diversified ecosystem, In 2020 I worked on Bala, the Upper Dee Vale a North-West Wales Upland on the border of Snowdonia and in 2021 I worked in the Vale of Clwyd.

Each and every time those study areas have been thoroughly analysed, their landscape, their farming history and today's functioning of farming system (technical and economic point of view). Always linking it with the wider context in agriculture and beyond. An example is available as Lenormand. 2019.

I will only add elements where I feel that my research allows me to do so. I drafted this contribution rapidly, if there are some missing elements I am happy to provide them afterwards. I tried to give a slightly different perspective to my contribution to what others organisation would do.

The Positive aspects of the current all-Wales approach?

- There are no obvious positive aspects from my experience.

Everything would be grouped in one piece of legislation. It might simplify the thinking for farms that were across the NVZ.

The negative aspects of the current all- Wales approach?

The NVZ a mildly effective policy that do not tackle the systemic issue: specialization

- **Reminder:** NVZ have been introduced in 1991 by the EU as part of the nitrate directive to tackle water pollution problems linked to leaching from agricultural sources. The main bit about it is a 170kg of Nitrogen/ha limit from animal origin. An action programme has to be attached to it, and one is supposed to produce a guide of expected agricultural management with storage requirements, larger rotation and fertilizer policy restrictions. Basically it is made of prescriptions and record keeping with a "country-wide" approach. [source](#)
- Brittany where I am from was a poor and under-developed area of France even after the 2nd World war, very few industries, poor connections to the rest of France. Most people were farming the land on very small acreages.

But through the 2nd half of the 20th century Brittany was transformed into one of the most enterprising and dynamic region of France. This was done through agriculture and it's associated supply chain. Associated infrastructure were also upgraded to cater for those needs. The community of small farms from Brittany embraced the move and upscaled massively livestockbased production, specialising with the 20th century agricultural revolution tools and mitigating their small size by using increased amounts of inputs and using newly adapted high energy crops (like maize). Though it brought some prosperity to the area it also lead to an explosion of the amount of manures (of all types), while the evolution of the cropping system lead to a decrease in ground cover, heavy manure application at were soils and crops could not absorb it. Leaching was widespread, water tables and rivers were reamed with nutrient (leading sometimes to human health concerns). It had a direct environment impact triggering eutrophication in waterbodies as well as algae blooms, with impacts on the flora and the fauna (Charlier et al. 2007). **The situation in Wales is not as dire but further development of high input farming system could lead to this.**

NVZ (Nitrate Vulnerable Zone) rules have been applied to the whole of Brittany since 1994. It's implementation (further down the line in 2004) led to a high subsidy support to adapt farm infrastructure and practices in every catchment. This was done as a co-management, political power treading as lightly as possible in between the environmental, human impact and the impact on farms. This has been relatively successful in getting many waterways under the threshold, though Brittany still suffers from Algae Blooms. **The current support through existing tools in Wales does not seem sufficient to be scaled up to the whole of Wales at the moment. Farmers report struggles to access it, all the more on so short a deadline.**

[Link to a EC Europe Factsheet on the nitrate issue in Brittany](#) (EN)

- **The NVZ is already an old policy made of uniform prescriptions and limits** (which origins or sources are not provided in the current documentation), the approach to the whole of Wales **disregards the diversity of landscape that can be found in Wales and the different contexts;** climate wise, soil wise, catchment wise... For example even in a relatively small area in SouthPembrokeshire, very different contexts could be found (Lenormand, 2019).
- **Finally the problem is maybe endemic of a regional specialisation of farms in livestock farming;** the importation of farms inputs to sustain the high density of livestock rather than being linked to inadequate management. **In the last decades high livestock numbers have been a way to cope with volatile prices and thin margins on the livestock commodity markets (Lenormand, 2019).**

We are already witnessing some impacts in the countryside:

- The speed and scale of the implementation of the NVZ requires a quick and immediate fix on noncompliant farms. As a result the imminent implementation of an all Wales has pushed high-added value, nutrient rich farms, usually high inputs ones (Dairy farms, Poultry farms...) that can splash the cash to deal with the issue; either by renting, buying or rearing out some animals.

For other farms that want to avoid the extra paperwork and the infrastructure work to adapt, some have made the choice to do away with cattle or retiring. If the burden of paperwork is the only issue some might "link their holding" with a short of land one, becoming contractors. Mixed grazing combining cattle and sheep is a valuable tool to manage landscapes.

The problem for many is it represents extra work for absolutely no income gain or any other type of gains as it is only a prescription measure. Margins on many farming systems

are quite thin meaning that those extra measure can be difficult to implement without painful decision or a rethinking of the farming system (extension and economies of scale, reorientation...).

What is described above already happened in 2004 when the first NVZ was introduced in Pembrokeshire (Lenormand, 2019). With an upscaling to the whole of Wales it has the potential to be disastrous.

Today it might mean the end of small dairy farms and cattle smallholder for which the size combined to the market parameters does not allow those transformations.

There is already some additional pressure on the land market. There are reports coming in that it is to deal with the NVZ. Overall it leads to some parts of the landscape starting to be used differently, with more slurry being spread, a higher production being asked from it. For example some rugged hill land has been bought in this regard and will be managed very differently in the future.

The implementation of a Wales wide NVZ combined to the current context could lead to a very wide land-use change with huge environmental externalities and further concentrating farm businesses. Farms will again tailor their facilities as tight as possible to limit the costs in a competitive environment, in turns this will lead to massive slurry/muck dumping around closing/opening dates. Those evolutions do not match the vision of the Welsh Government from December 2020 for Welsh agriculture.

The process for developing the current approach?

- I do not have precise evidence on this section. Those are based on general observations during fieldwork.
- The process to go towards this new NVZ has not been thoughtful of previous consultations and work conducted with actors in Wales in the past. Besides it reneged on previous promises from the Ministers to farmers. It destroyed more of the little trust that exist between farmers and the policy field.
- Finally, we are facing a time of uncertainty in farming. We do not know what the subsidy regime will be like even next year (at least in terms of amount) or in 5 years' time (Welsh Government White Paper 2020). Combined to this agricultural markets (inputs and outputs) have been heavily disrupted with a high volatility (AHDB 2021) and with Covid we are witnessing an increase in infrastructure costs. It is very difficult to gather the resources to adapt the infrastructure right now. The timing is terrible.

Alternatives to the Current Approach?

- I do not believe that the approach of the NVZ is appropriate to tackle Wales effluents of animal origin
- **In a world where resources are becoming scarcer we shouldn't see animal manure as a problem but as an opportunity, remember the time when a farmer's prosperity was assessed through the size of its muckheap.** At a time when inputs are more expensive than ever there is a need to make the best use of what we have on farms and biological processes.

Among challenges for a best use of animal muck is the land availability challenge with many parts of modern farms being miles away from the homestead. Often the land close to the homestead (at least on lowland) would receive the heaviest of the muck, with a high moisture content it is highly inefficient to cart muck around.

The next problem being to put it at a time when the plants need it to grow and in good weather conditions for it not to leach away. But those applications also have to match the mix of nutrients needed by the plants (Maize, cover crops or grass have very different needs (N, P, K..), timewise, and quantity wise depending also on varieties used). One also has to consider the biological processes of soils in the frequency and amounts spread.

It is not about putting blunt limits it is very complex and needs a very fine approach that needs to be worked out with the farmer's knowledge. There is no one size fits all approach for a good construction of an adequate cropping system combined to the livestock system for an optimum use of nutrients.

In Wales the amount of rainfall collected storages is a massive issue it inflates the quantity of manure to spread. To turn slurry from a hazard into a brown gold, part of the work is to reduce the amount of water in it through separation for a better incorporation. Dirty water processing facilities are also important of the mix.

Note: Chicken muck is a complete fertilizer to replace inorganic fertilizer at least partially, if poultry food is coming from England, it means that a lateral transfer of fertility takes place.

- But all the above is constrained by the amount of storage available. And on many farms, market forces in agriculture over the last 30 years forced farms to push the number of animals on farms up without necessarily as much of an increase in land size or of manure storage capacity. Besides spreading

manure has to be done carefully to give it time to decompose before grazing it with cattle for sanitary reasons, and exchanges between farms have to be limited.

- **Depending on the farming system strategy for similar livestock units there are very different level of production out of the animals resulting in different quantities and qualities of manure being produced. The vast majority of farms I met had a safe management of their nutrients, most could not breach NVZ rules given their farming systems.** Likewise, the environment varies wildly on the scale of Wales, or within a small region as I have seen through my fieldwork. Soil types or microclimates impact heavily the local conditions, grass might start to grow 2 weeks earlier on one side of the valley compared to the bottom. And on Pembrokeshire's early soils, grass would never really stop growing during winter. Most of the area could be spread with slurry. On Bala there were one month differences in terms of grass growth start between the valley floor and the top of the Mountain. In many places it would be impossible to spread any kind of slurry or muck.

Setting up uniform prescriptions on the whole of Wales seems a relatively outdated way to deal with the leaching of nutrient. If you can improve the value of manure to allow them to be efficiently incorporated at the right time and substituted to the use of inorganic fertilizer. **If precision technologies are said to represent the future of farming a uniform prescriptive NVZ is not a very modern nor an efficient way to control the use of organic fertilizer.**

- In less than 5 years it is likely that many farms will have gone through the Sustainable Farming Scheme whole farm assessments (Welsh Government 2020) that will cover the different elements of the functioning of the farm. It would be possible to check or adapt Nutrition Management Plans for farms at that time. Systemic changes to adapt farming system with gradual investments strategies could be drawn up to change the focus of those systems at that time.
- [Looking at clues to go forward, there is a need to think in a systemic way and directly echoing my thinking I invite you to write this short piece by a Breton farmers André Pochon that covered those issues last July.](#)

To summarize I wish the approach was more gradual and systemic to adapt the response to each case and help build a sustainable future for Welsh farming and rural communities not remove farms from the land. We were the one to incentivize farmers in a productivity focused specialisation through 50 years of policies, it seems tough to to blame them after 15 years were they faced many hardships. A systemic change doesn't happen immediately and needs to carefully take into account what is at hand and the conditions of the farmed

landscape. The SFS represents a timely opportunity to deal with it from the farm perspective.

If an all-Wales approach were to be retained, how the current approach could be improved?

I do not advise the plan to proceed in its current form, as explained above I call for a rethinking of a NVZ. If the plans go ahead as prescriptions

- If there is a bit of flexibility in the plans I would advise for a gradual implementation per area to deal better with funding available for investments, inspections, giving the appropriate time for Nutrient Management Plans specialists to work, but still starting by critical areas.
- To soften the blow it might be adequate to fund **drafting of adequate management plans** for the first years for each farm that requires it to identify a strategy for the first few years. This could also lead to case by case derogations
- **Another approach could be to target farms** on which the "NVZ" would be gradually implemented. A stocking density focused and level of production sorting approach to sample farms reducing the strain on smaller farms. Though unequal, most Welsh farms would not be impacted in the short term. This would reduce the additional burden for Mountain farms for example.
- **Among elements provided above some can be considered in isolation if no farm assessment is done;** substantial help to invest in infrastructure on the farm (covered storage, slurry separator...) or to transition to FYM (longer term subsidy to cover the additional cost), subsidized a rotation like the Norfolk one (nearly continuous cover, efficient agronomic logic to capture and pump nutrients... With the need to adapt it to each farms..). Define precisely the quality of the organic fertilizer available on farms for in some case reduce the needs by compliance with the rules. Though for those above a grace period might be adequate.
- **Monitor** the situation in terms of how much it "hurts" by looking at the number of dispersal and reduction sales to have an idea of the scale of the challenge for farms.
- Engage as much as possible with all the actors if possible locally and in person. For example in markets with information counters... Clear places to be able to get help.

I would conclude that farming is an industry that is under pressure, where the suicide rate is particularly high. Farmers take many risks on their shoulder, this is difficult, margins are thin. The 10th of September day of submission of this contribution was

the suicide prevention day, by highlighting our shared responsibilities and the potential ways to better deal with the nutrient issue I hope I played a part in it. The amount of effluents we end with in our patch of the world results from regional specialization, the issue is systemic and to deal with this kind of matter NVZ or no NVZ time will be the essence to instil a wide-ranging change.