

Date : 13 April 2021
To :
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From :
E-mail address :

DELIVERING SCOTLAND'S RIVER BASIN MANAGEMENT PLANS: SILAGE, SLURRY AND ANAEROBIC DIGESTATE. IMPROVING STORAGE AND APPLICATION. A CONSULTATION

Summary

- NFU Scotland supports policies and practices that aim to reduce emissions and diffuse pollution associated with agricultural activity and believes all farm businesses can and should play their part in meeting climate change challenges and safeguarding water quality.
- The storage of silage, slurry and liquid digestate, and the application of the latter two, should be managed in ways that reduce emissions and minimise risks to the water environment.
- However, in the context of this consultation, NFU Scotland is completely at odds with the Scottish Government's excessively blunt and ill-thought-out proposals – primarily because of the significant but unquantified costs in relation to equally unknown benefits.
- A policy balance of regulation, support and advice is required and NFU Scotland is clear that an overreliance or emphasis on regulatory compliance is very unlikely to yield the desired policy outcomes and is likely to lead to very damaging unintended consequences.
- NFU Scotland is deeply concerned that the anticipated benefits of reduced emissions and improved water quality will be relatively insignificant and dwarfed by the negative financial impacts on a significant number of

agricultural businesses and the economic impacts on Scottish agriculture, Scotland's rural economy and wider supply chain.

- There is no insight provided by the Scottish Government as to the number and type of agricultural businesses that might be affected by the regulatory proposals, and therefore no comprehension of the potential financial costs for affected businesses or key sectors of Scottish agriculture.
- This is compounded by the complete lack of consideration of local or regional impacts where the consequences of these proposals may cause wider economic damage if certain agricultural businesses were adversely impacted.
- NFU Scotland's interest and commitment to the critical environmental issues is not in doubt.
- However, a proportionate and enabling regulatory solution is required that delivers the desired environmental outcomes without excessive, punitive or business threatening costs to individual farm businesses.
- The delivery of 'public good' must not be met by 'private cost' – nor be seriously damaging to sectors of Scottish agriculture that are the first links in supply chains of significant worth to the food and drinks sectors and the Scottish economy as a whole.
- Scotland's farmers are already engaged in many initiatives to mitigate the impacts of agricultural practices on the natural environment. This work is in the public interest.
- It is, therefore, vital that adequate, non-competitive funding should be provided for farm businesses to adapt and invest if these proposals are to be taken forward.
- Given the lack of evidence or analysis of regulatory impacts, NFU Scotland provides the findings of survey work carried out with its members and case studies to illustrate the potential costs to individual businesses and reflect the variation in size and type of agricultural businesses that may be severely impacted by the proposals across Scotland – from Shetland to Stranraer.

Introduction

1. NFU Scotland has an absolute and steadfast interest in a thriving and sustainable food and farming industry in Scotland.
2. In that context, NFU Scotland agrees that agricultural, land use, environmental and climate policies must collectively provide an opportunity to foster a sustainable model of farming which builds on Scottish agriculture's reputation as producers of safe, high quality and affordable food to world leading standards.
3. NFU Scotland is clear that agricultural activity has a key role and responsibility in reducing its environmental impacts through actions that reduce greenhouse gas emissions and the risk of point-source and diffuse pollution to the water environment.
4. NFU Scotland supports policies and practices that aim to reduce emissions and diffuse pollution associated with agricultural activity and believes all farm businesses can and should play their part in meeting climate change challenges and safeguarding the water environment.
5. Addressing agricultural externalities remains a complex issue, one that will require a spectrum of approaches including regulation, advice and guidance, capital to support on-farm investment as well as the application of the latest technologies, innovations and approaches to drive positive change at farm-business and catchment levels.
6. NFU Scotland agrees that baseline regulation must form part of the solution to help address climate change and minimise pollution risks.
7. However, NFU Scotland does not believe that the current proposals to consolidate the (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2003 into the Water Environment (Controlled Activities) (Scotland) Regulations 2011 ('CARs') will be an effective regulatory solution that delivers for either the environment or the Scottish economy.
8. In the context of the storage and application of silage, slurry and anaerobic digestate, NFU Scotland is completely at odds with the Scottish Government's excessively blunt and ill-thought-out proposals – primarily because of the significant but unquantified costs in relation to equally unknown benefits.

9. Recognising that the desired policy outcomes in this context must involve a balance of regulation, support and advice, NFU Scotland is clear that an overreliance or emphasis on regulatory compliance is very unlikely to yield the desired policy outcomes and is likely to lead to very damaging unintended consequences.

The Costs of Excessive Regulation

10. NFU Scotland is deeply concerned that the anticipated benefits of reduced emissions and improved water quality will be relatively insignificant and dwarfed by the negative financial impacts on significant number of agricultural businesses and the economic impacts on a Scottish agriculture, Scotland's rural economy and wider supply chain.

11. This concern is hugely compounded by the apparent lack of any meaningful or insightful Regulatory Impact Assessment to accompany the proposals.

12. The Scottish Government's own Partial Business and Regulatory Impact Assessment provides absolutely no indication of potential costs. Instead, it looks at the three options (i.e. Option 1 - do nothing; Option 2 - update existing SSAFO legislation, and; Option 3 - consolidate SSAFO into CAR). Then it concludes that the third option is the best way forward and simply states that the costs associated would be "potential capital cost to farmers to upgrade facilities".

13. There is no comprehension or insight as to the number and type of agricultural businesses that might be affected by the regulatory proposals, and therefore no idea of potential financial costs for affected businesses or key sectors of Scottish agriculture.

14. This is compounded by the complete lack of consideration of local or regional impacts where the consequences of these proposals may cause wider economic damage if certain agricultural businesses were adversely impacted.

15. As a consequence of this major flaw in the consultation process, NFU Scotland felt obliged to survey its own members within a very tight timescale. Hosted on SurveyMonkey, the NFU Scotland member survey was conducted between Friday 26 March and Tuesday 6 April. In total, 539 responses were received. The main findings of the survey can be found at Annex A of this submission.

16. In addition to the survey of NFU Scotland members, a number of agricultural businesses have provided more detail as case studies of the potential costs of compliance. These can be found at Annex B of this submission.
17. It is clearly evident, both from the survey and the case studies, that the proposed regulatory changes in the absence of significant financial support, and other practicalities being addressed, have the potential to severely damage the viability of a number of agricultural businesses and to the point where some businesses may cease to operate.
18. Regulation alone will not yield a reduction in emissions or safeguard and improve water quality, but it could threaten the very existence of productive agricultural businesses.
19. NFU Scotland is fully aware that an even blunter option is available to the Scottish Government – namely a whole territory Nitrate Vulnerable Zone (NVZ) and associated NVZ Action Programme. However, that approach would be wholly unjustified given the extensive nature of much of Scottish agriculture and the high quality of the water environment over the vast majority of Scotland.
20. That said, however, NFU Scotland is concerned by a degree of ‘mission creep’ of the NVZ approach in the context of the proposed regulations.
21. Rather than two differing regimes for SSAFO Regulations and the Action Programme for NVZs it is proposed that the slurry storage capacity requirement will be consolidated across Scotland as 22 weeks for housed cattle and 26 weeks for housed pigs, with the calculation method as already set out in the Nitrate Vulnerable Zones (Scotland) Regulations 2008.
22. Again, it is also proposed that to achieve compliance with the 22 and/or 26 weeks minimum storage requirement a 4-year transitional period will apply to all those farming outwith an NVZ.
23. Together, these requirements would effectively extend the reach of the NVZs to areas where there is little or no evidence that either ground or surface water nitrate levels would trigger such a requirement.

The Requirement for Support and Advice

24. NFU Scotland’s interest and commitment to the critical environmental issues is not in doubt. However, a proportionate and enabling regulatory solution is

required that delivers the desired environmental ('public goods') outcomes without excessive, punitive or business threatening costs to individual farm businesses.

25. In the context of 'Just Transition', the delivery of public goods must not be met by private cost – nor be seriously damaging to sectors of Scottish agriculture that are the first links in supply chains of significant worth to the food and drinks sectors and the Scottish economy as a whole.

26. It is NFU Scotland's view that the Scottish Government and regulators (SEPA) must work together with farm businesses to provide appropriate options and advice, and for farmers to be supported if investment to meet compliance is required.

27. Regulation alone will do little to raise awareness or encourage best practice and overlooks the outcomes the policy is trying to achieve – primarily protecting water quality and reducing agricultural emissions of ammonia and nitrogenous gases.

28. Scotland's farmers are already engaged in many initiatives to mitigate the impacts of agricultural practices on the natural environment. This work is in the public interest. Therefore, it is NFU Scotland's opinion that adequate, non-competitive funding should be provided for farm businesses to adapt and invest if these proposals are to be taken forward.

29. In addition, the 'one-size-fits-all' approach typified by the enforcement of regulations will not take into account farm size, type and locality. More flexibility is required and with a stronger focus on what the regulations actually aim to achieve.

30. While NFU Scotland fully appreciates that the proposed regulations do not automatically mean that any silage or slurry storage facility constructed before 1991 will now be non-compliant, nevertheless there are likely to be many that may fail to meet the current standard required.

31. It is vital that all farm businesses minimise pollution risks, as well as reduce emissions related to slurry storage and application. However, simply consolidating existing regulations fails to account for

- site specific circumstances of the pollution risk on individual farms
- whether existing storage facilities and applications are sufficient for the locality (climate and soils), type and size of farm

- how support might be accessed, if upgrades are required, without jeopardising the viability of businesses

32. Funding for required capital investment will remain a critical issue – particularly in the context of slurry storage and application.
33. The proposals would allow stores built before 1 September 1991 to have a 4-year transitional period (or a 2-year transitional period for those built after 1991) from the coming into force date of the regulations to comply with the rules. Stores with planning permission but not constructed before the coming into force date of regulations will also have a 2-year transitional period.
34. While the consultation outlines a timeframe for compliance, it is silent on any sort of funding assistance or advice. Moreover, there is no commitment over the timeframe when such funding is likely to be critical. This is a major and unacceptable flaw.
35. For investment in slurry storage, the only current available support is through the very limited Agri-Environment Climate Scheme (AECS) 2021, which has a reduced budget and, more importantly, there is no commitment yet from the Scottish Government for its continuity beyond this year – when the demand for such funding will rise exponentially.
36. Moreover, NFU Scotland understands that funding through AECS, as well as being highly competitive, would also be limited to £15 per cubic metre up to a maximum 2,000 cubic metres of storage.
37. Likewise, the proposals would also require the use of low emissions spreading equipment. Within a year of the regulations coming into force, slurry could not be applied by means of high trajectory raised splash plate or rain guns and slurry must be applied using precision equipment in given circumstances. Moreover, within 5 years of the date of the regulations coming into force all slurry could only be applied by precision equipment.
38. For investment in better targeting of slurry applications, the only current available support is through the Sustainable Agricultural Capital Grant Scheme (SACGS). However, while there are eligible items (such as dribble bars, trailing shoes and shallow injection systems, plus slurry store covers), there is again no certainty about the continuity of SACGS and its funding and grant rates at this time ahead of when such support is likely to be most urgently required.

39. It is the considered view of NFU Scotland that, to be effective in this context, the SACGS would have to be significantly expanded – in terms of overall available funding, funding per business and grant rates.
40. Moreover, the Agricultural Transformation Fund as outlined in the Scottish Government's budget 2021-2022 must be significantly increased and utilised explicitly, in part, to enable agricultural businesses to adapt to any new regulatory requirements aimed at reducing emissions – such as these proposals.
41. In addition to increasing the funding within the ATF from the current £40 million, as well as boosting the SACGS component, the 'financial transactions' element must be enhanced and targeted at 'soft loans' to enable affected agricultural businesses to make the investments required of them over the timescales prescribed.
42. Therefore, there must be a commitment to the ATF beyond the current financial year and for the four years following the implementation of any of the proposed regulatory requirements.

Practical Issues

43. In addition to the very real concerns highlighted above in relation to the potential costs of the proposals, and their efficacy in terms of delivering the desired policy outcomes without parallel commitments to support and advice, NFU Scotland has also unearthed a raft of other potential issues that may arise. This follows significant consultation with NFU Scotland members who have highlighted major concerns in relation to the following issues
- Landlord and tenant obligations, improvements and costs
 - Possible planning permission requirements
 - Availability (and cost) of contractors
 - Availability (and cost) of materials
44. All of the above have the potential to complicate compliance – and add further cost.

Consultation Questions

Q1. Do you agree with the proposed rules for the control of silage in bales or bulk bags?

Yes. NFU Scotland agrees that silage bales or bulk bags should not be stored, opened or unwrapped within 10 metres of any surface water or opening to a surface water drain.

Q2. Do you agree with the proposed rules on the storage of silage?

No. NFU Scotland does agree that the storage of silage must be effective in terms of providing environmental protection. However, for the reasons set out above a blunt regulatory approach may incur greater costs for affected agricultural businesses than the anticipated or possible benefits for the environment.

Q3. Do you agree with the proposal to remove exemptions for silage stores built prior to 1 September 1991?

No. NFU Scotland does not agree with the proposal to remove exemptions for silage stores built prior to 1 September 1991 for many of the reasons set out above.

Q4. Do you agree with the proposed revisions to consolidate the storage requirements for slurry across Scotland at 22 weeks for housed cattle and 26 weeks for pigs?

No. NFU Scotland does not agree with the proposed revisions to consolidate the storage requirements for slurry across Scotland at 22 weeks for housed cattle and 26 weeks for pigs. As set out above, this would effectively mean the extension of a particular aspect of NVZs with absolutely no evidence of ground or surface water nitrate levels rising or being close to the threshold that would warrant such designation and all that entails.

Q 5. Do you agree with the proposal to remove exemptions for slurry stores built prior to 1 September 1991?

No. NFU Scotland does not agree with the proposal to remove exemptions for slurry stores built prior to 1 September 1991 for many of the reasons set out above.

Q 6. Do you agree with the proposed rules for slurry storage?

No. NFU Scotland does agree that the storage of slurry must be effective in terms of providing environmental protection. However, for the reasons set out above a blunt regulatory approach may incur greater costs for affected agricultural businesses than the anticipated or possible benefits for the environment.

Q7. Do you agree with the proposed rules on the storage of liquid digestate?

No. As liquid digestate is to be essentially treated as slurry in this context, NFU Scotland does not agree with the proposed rules on its storage for many of the reasons set out above.

Q8. Do you agree with the proposed revised requirements for the notification of new silage, slurry, and liquid digestate structures?

Yes. NFU Scotland accepts the need for notifications to SEPA prior to commencing the works and that the notification must be accompanied by an engineering plan for the works to be carried out, and that the operator must retain, for inspection by SEPA on request, the engineer's final sign off certificate for the works.

Q9. Do you agree with the proposal that a RAMS map should be prepared and issued, to those carrying out organic fertiliser spreading operations?

Yes. NFU Scotland considers the use and application of RAMS maps as an effective tool in helping reduce risks to the water environment from agricultural operations. The use of RAMS maps should be seen as good practice.

Q10. Do you agree with proposals for the application of slurry, and liquid digestate by precision equipment?

Yes. NFU Scotland agrees that the use of low emission spreading equipment is a very effective way to reduce ammonia emissions and improve water quality. However, as noted above, NFU Scotland would urge that sufficient funding continues to be made available under the SACGS to enable all to invest and apply precision equipment, together with tailored advice.

Q11. Do you agree with the proposed amendments to GBRs 5, 6,8 and 14?

Yes. NFU Scotland supports the amendments to GBRs 5, 6, 8 and 14 as they would bring clarity of the rules such that operators clearly understand what is required of them whilst ensuring that SEPA can take enforcement action in the event that non-compliances are identified.

Q12. Do you agree with the proposed amendment to GBR 9?

Yes. NFU Scotland supports the amendment to GBR 9 as it would bring clarity of the rules such that operators clearly understand what is required of them.

Q13. Do you agree with the proposed amendments to GBR 10?

NFU Scotland has no particular opinion on the proposals for GBR 10 as it is not (normally) of any agricultural interest.

Q14. Do you agree with the proposed amendments to GBR 15?

NFU Scotland has no particular opinion on the proposals for GBR 15 as it is not (normally) of any agricultural interest.

Q 15. Do you agree with the proposed amendments to GBR 22?

NFU Scotland has no particular opinion on the proposals for GBR 22 as it is not (normally) of any agricultural interest.

Q16. Do you agree with the proposed amendments to GBR 25?

NFU Scotland has no particular opinion on the proposals for GBR 25 as it is not (normally) of any agricultural interest.

Q17. Do you agree with the proposed amendments to GBRs 27 and 28?

NFU Scotland has no particular opinion on the proposals for GBRs 27 and 28 as they are not (normally) of any agricultural interest.

ANNEX A – NFU SCOTLAND SURVEY OF MEMBERS

Hosted on SurveyMonkey, the NFU Scotland member survey was conducted between Friday 26 March and Tuesday 6 April. In total, 539 responses were received. The following tables provide a summary of the main findings.

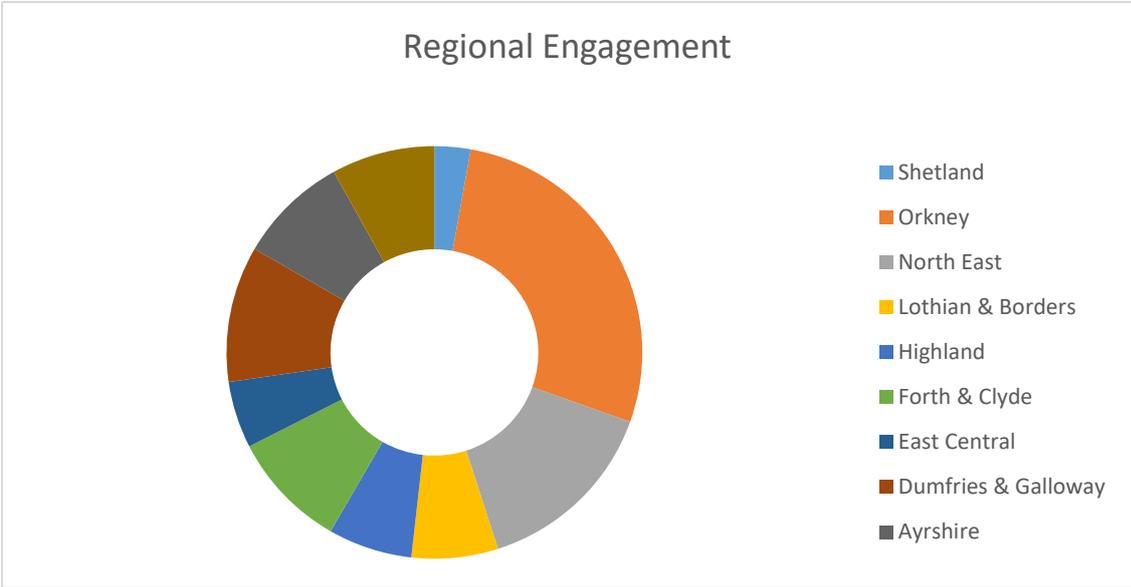


Figure 1: Greatest engagement came from Orkney. Note 4 participants did not complete regional information (total number of responses to question (n)= 539).

Approximately 155,447 livestock were captured in the survey (138,965 cows – both dairy and beef - and 16,482 pigs).

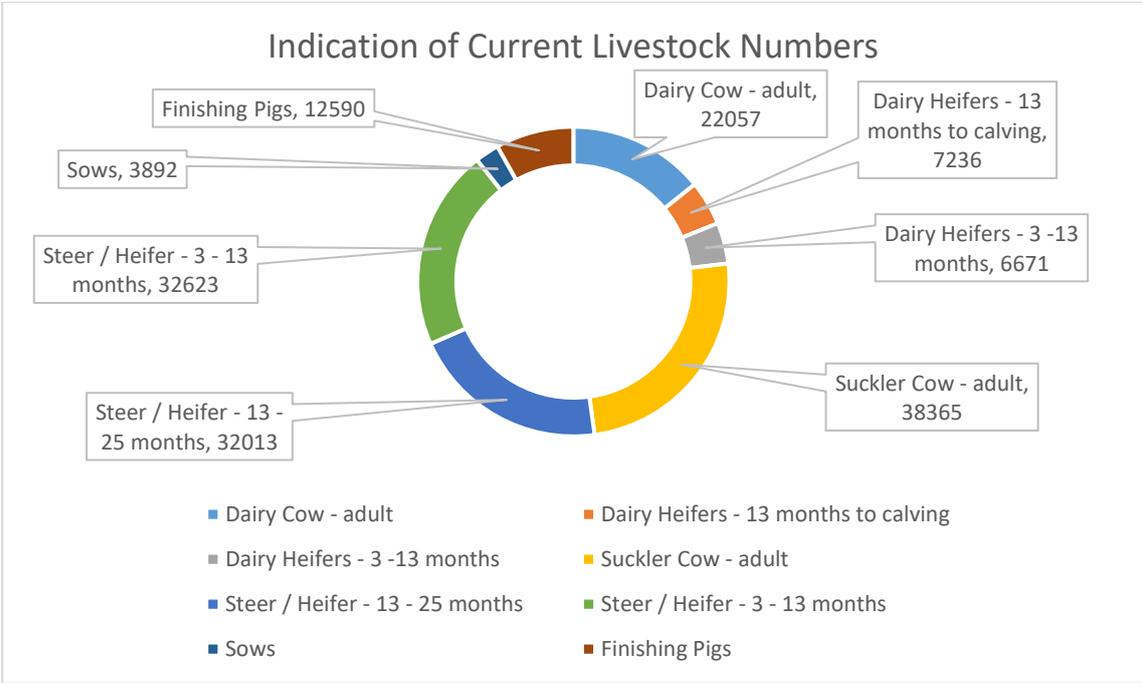


Figure 2: Suckler, sows and steer (3 -13 months) are housed most frequently according to participants (n = 80)

- Reflecting on the number and way cattle are housed, approximately 36,636 cattle are housed in slatted courts, with 49,616 in bedded courts, and 37,945 in cubicles. Some 3,817 are housed in 'other' types of housing, which included outside/outwintered, sloping floors and Orkney floors.

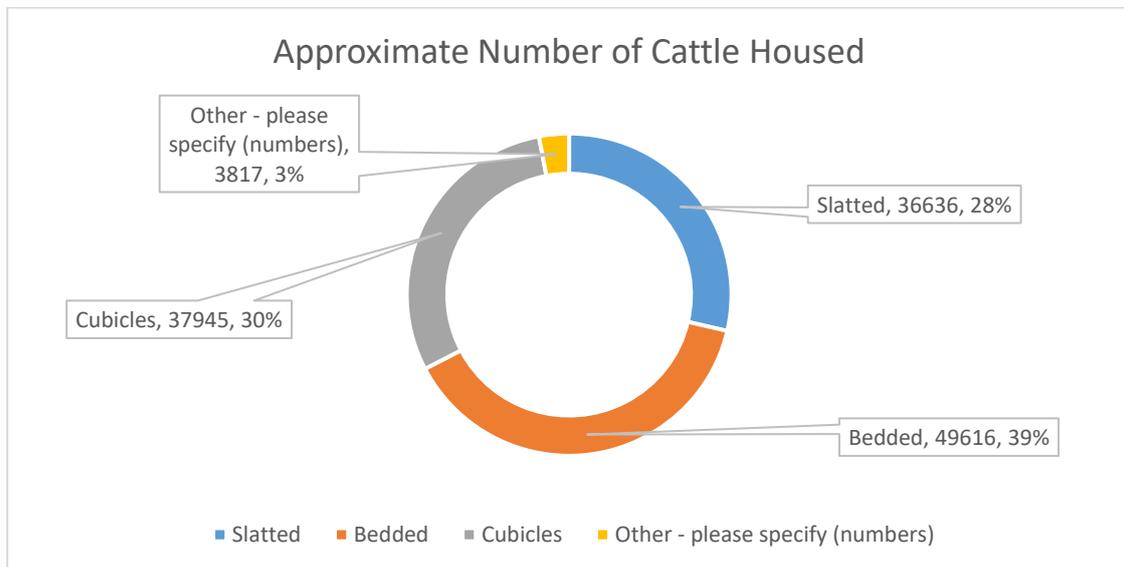


Figure 3: A roughly even split between slatted, bedded and cubicles (n= 83).

- Reflecting on types and approximate quantities of silage made, respondents estimated they made 1,234,087 tonnes per year within pit and 215,958 bales (n=80).
- Reflecting on number of pre-1991 slurry and silage units:

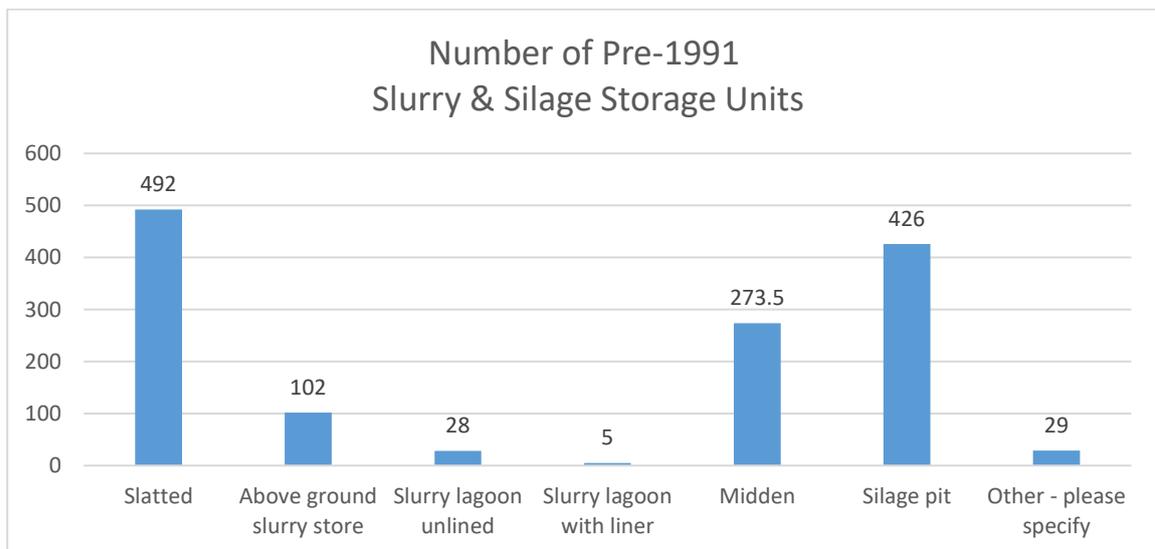


Figure 4: Slatted court and silage pit are estimated to be the most frequent pre-91 infrastructure. Note margin of error in these estimates are quite high due to variation in submitted information (N=65).

'Other' included: bales, silage and slatted tank.

- Reflecting on post-1991 storage units for slurry and silage units:

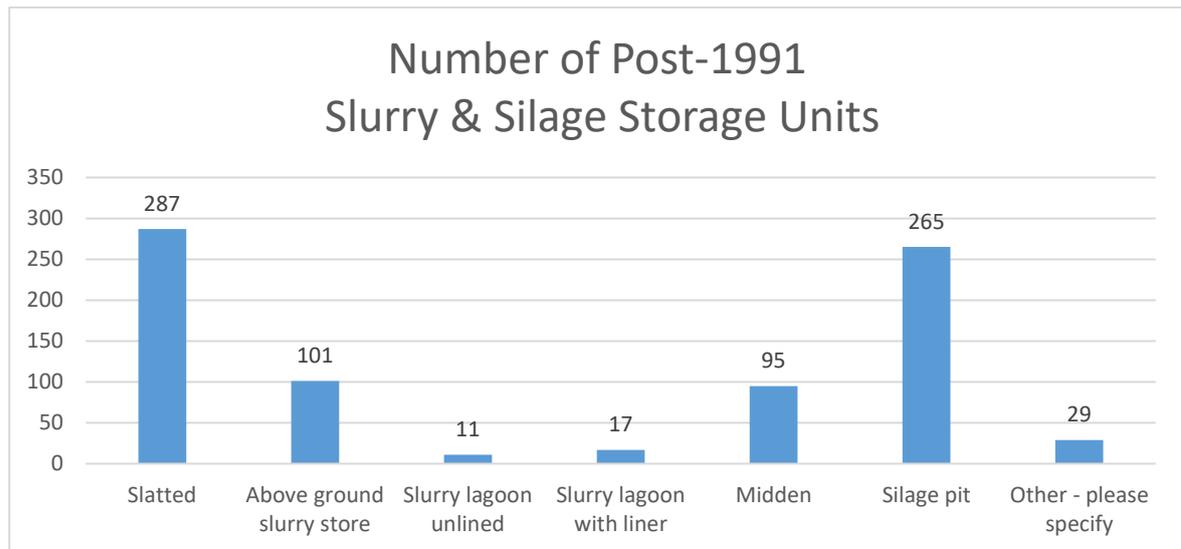


Figure 5: As above, slatted and silage pit are most frequent types of infrastructure. Per previous estimates, the figures should be used tentatively due to margin of error (n= 56).

'Other' included: bales, slatted tanks and on the ground.

- Reflecting on slurry storage for cattle (22 weeks); 69 per cent (46) participants confirmed they have sufficient storage, 31 per cent (21) stated they did not (n=67).
- Reflecting on slurry storage for pigs (26 weeks), 25 per cent confirmed (2) and 75 per cent (6) stated they did not have sufficient storage (n=8).

Note this question was included on Monday 5 April and the survey was closed on Tuesday 6 April. Considering estimated costs to upgrade slurry storage:

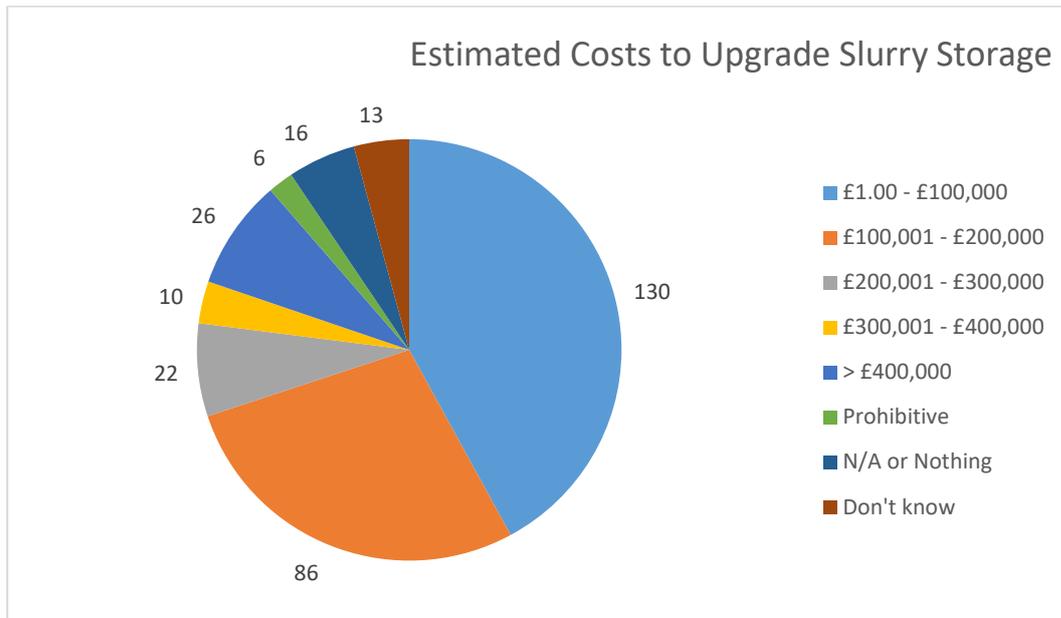


Figure 6: 46 per cent of participants estimated costs to upgrade would range between £1 - £100,000. Two respondents stated the costs would be approximately 1 million pounds (NFUS 11 and NFUS 77) (n=309).

Responses related to prohibitive included comments such as “I’ll just stop farming” (NFUS 86), “Neither arable or cattle business could afford new facilities” (NFUS 177) and “Cows will go. Not viable to rebuild” (NFUS 302).

- Considering estimated costs to upgrade silage pits:

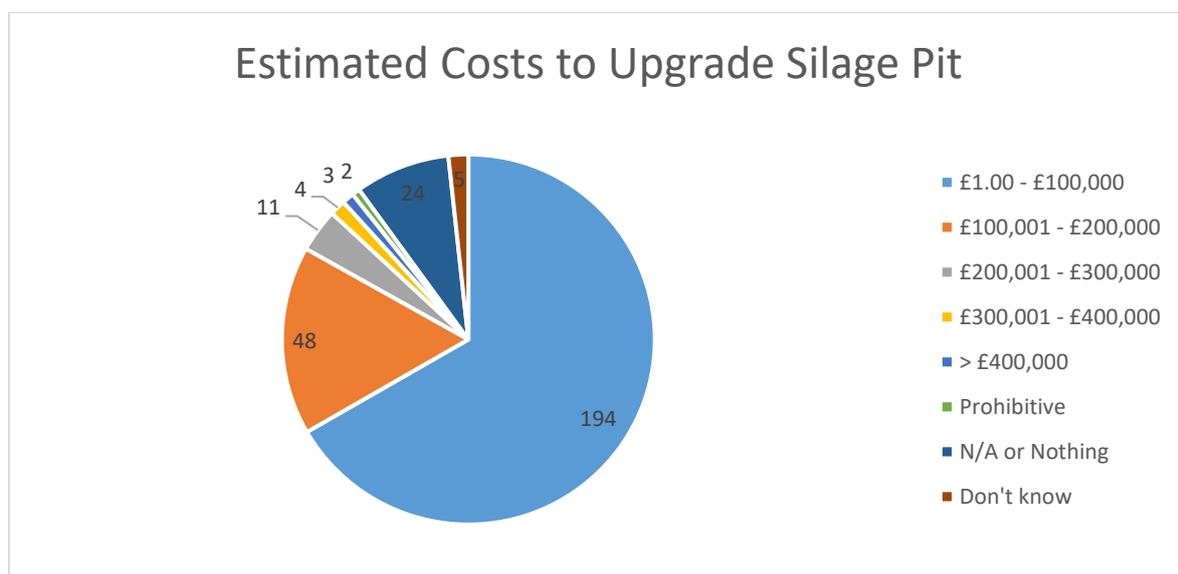


Figure 7: 67 per cent of respondents estimate upgrade costs to be between £1 - £100,000. Participant NFUS 77 estimated costs to exceed 1 million pounds (n=291).

Comments categorised as prohibitive included similar comments as slurry, one respondent (NFUS 261) stated “Cost would probably make farm unviable”.

- Reflecting on the impact of the introduction of the proposed changes with zero grant funding available:

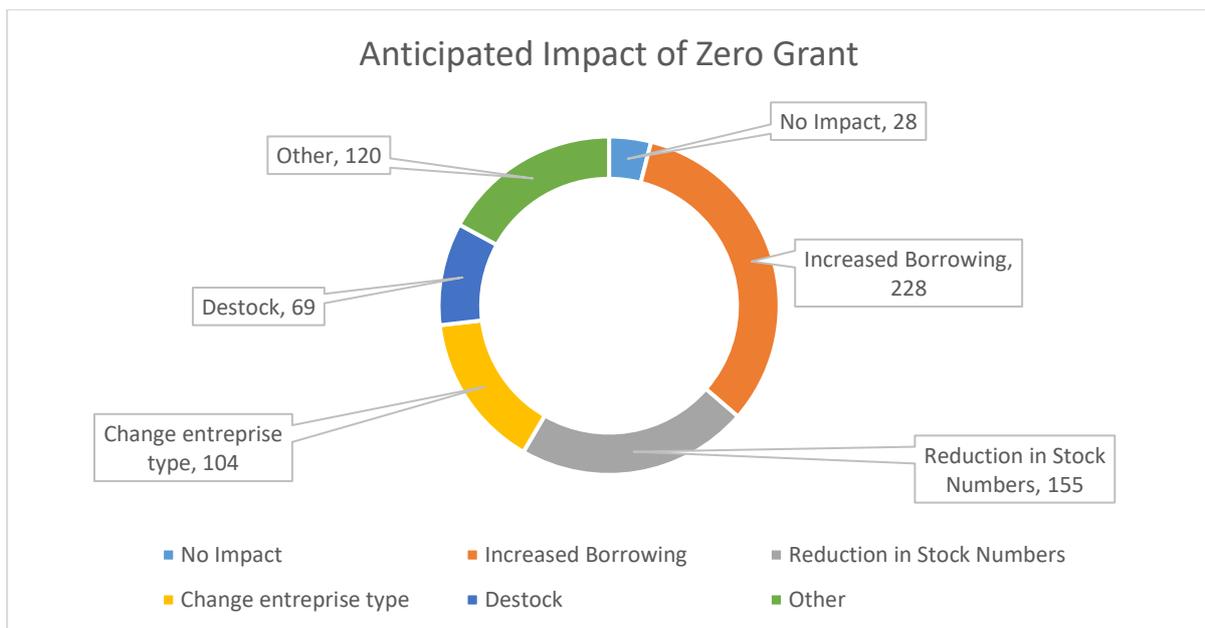


Figure 8: 53 per cent (228 respondents) said the change would result in increased borrowing (n=432).

Responses included to 'other' (n = 69) included: exit the industry or cease to trade (42 responses); changes to how the business operated (12 responses); negative financial implications (4 responses); problems related to tenancy (3 responses); not possible to adapt (4 responses) and do not know (2 responses).

Notable commentary included:

"We would have to cease farming as the bank would not lend us the money." (NFUS 119)

"It would finish us all of our buildings are old but are well maintained" (NFUS 271)

[I am a] "tenant, probably give up and find employment" (NFUS 417)

- Reflecting on the impact of the proposed changes with 50% grant funding:

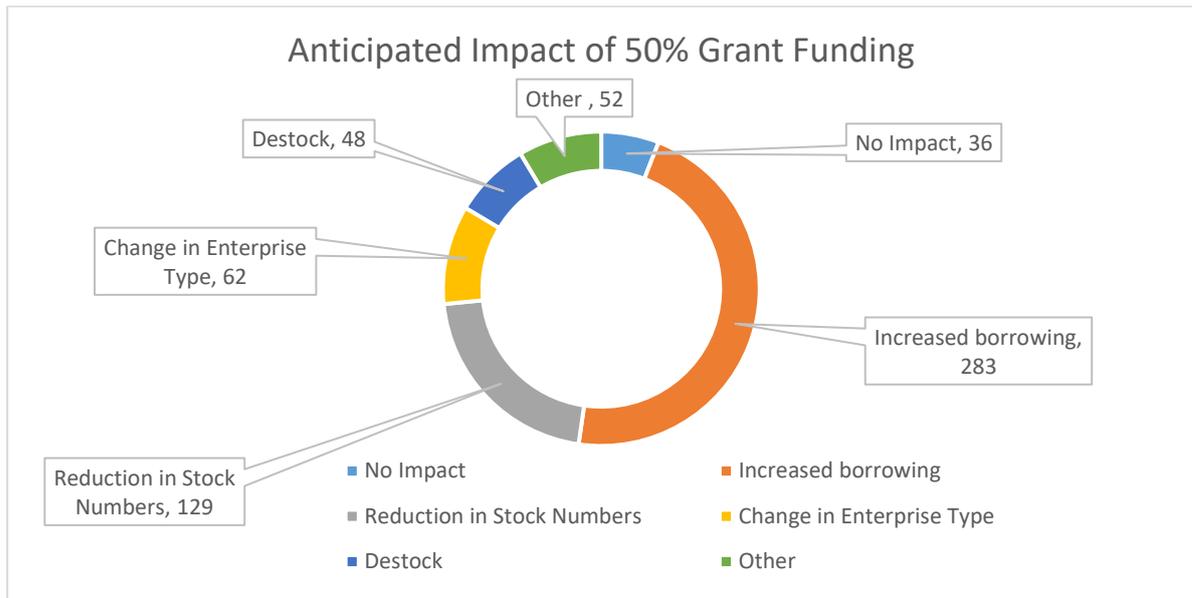


Figure 9: 66 per cent (283) respondents said it would increase farm borrowing (n=482).

Responses in ‘other’ included: exit the industry or cease to trade (19 responses); changes to how the business operated (5 responses); negative financial implications (3 responses); problems related to tenancy (4 responses); increase stock numbers (1 response). 7 participants responded positively to the suggestion of 50% grant funding (E.g., “a lot better than without 50%” (NFUS 539) and “less impact than no grant” (NFUS 303)) whereas 8 respondents said the costs were still prohibitive. (e.g. (NFUS 137) “Still doubt if economic to invest in another silage pit”).

- Reflecting on the impact of a 60% grant:

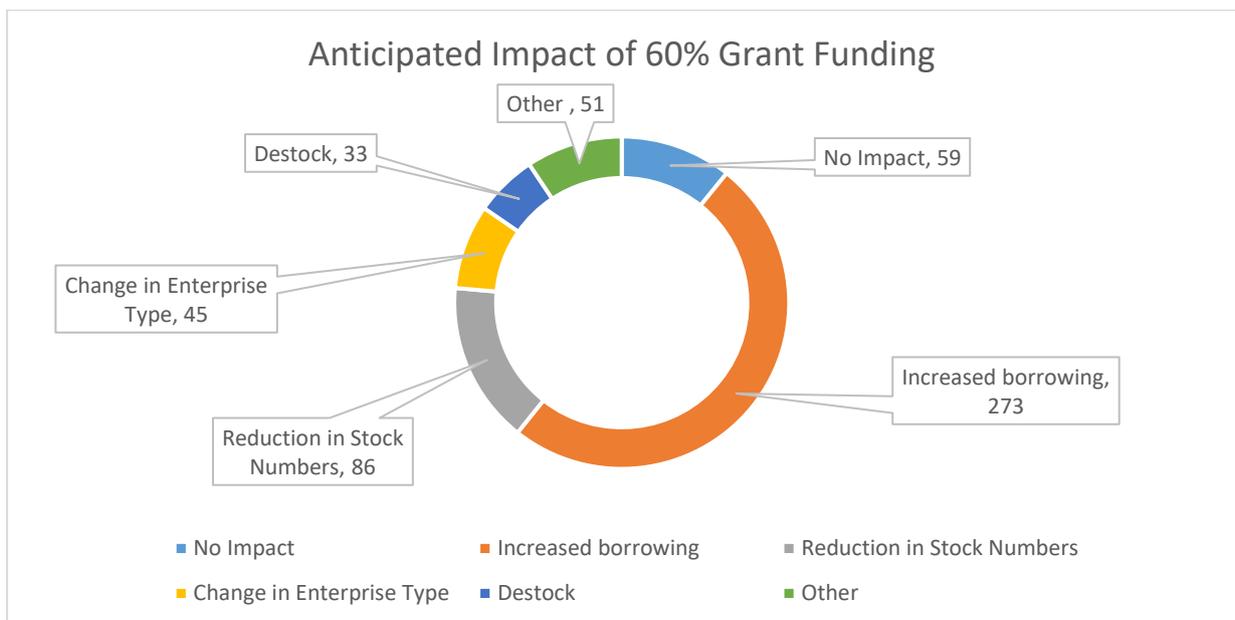


Figure 10: 64 per cent of respondents stated the impact of changes would result in increased borrowing (n= 273).

'Other' (n=51) included: a 60% grant is still insufficient (7 respondents), tenancy issues (4 responses), not possible to adapt, increase livestock numbers (2). 11 participants responded positively to the concept; however, notable commentary includes:

"Not enough - 80% more like it." (NFUS 115)

"...It would take a 75% grant for it to be possible." (NFUS 119)

"Still put us out of business." (NFUS 481)

ANNEX B – NFU SCOTLAND CASE STUDIES

The following case studies provided by NFU Scotland members illustrate the potential costs to individual businesses and reflect the variation in size and type of agricultural businesses that may be severely impacted by the proposals across Scotland – from Shetland to Stranraer.

Argyll & the Islands Case Study One

Dairy, beef and sheep enterprise covering 640 hectares run on a partnership basis with four partners, employing three full-time employees, two part time employees and access to an onsite vet. The farm is coastal and has predominantly free draining, light, sandy soil. Situated on the west coast of Scotland, with mild but unpredictably wet weather, the farm is best able to manage slurry handling by spreading little and often throughout the year on ground that is rarely, if ever, snow covered, frozen or waterlogged. In fact, due to the mild weather in Kintyre, the grass grows all year round. Spreading frequent small amounts of slurry on winter grazing allows for lambs to be fattened without the cost, and environmental impact, of buying and hauling in concentrate feed.

Although well built, fit for purpose, and meeting current guidelines, the shuttered concrete silage pits would be unlikely to meet the proposed regulations if the pre-1991 exemption is revoked. The silage pits are situated in such a way as to make upgrading them impossible and not cost effective. The only option would therefore be to demolish and replace all existing silos.

The potential total financial cost to this farm enterprise could be in excess of £1,500,000 with zero financial return on the investment. There would also appear to be no obvious environmental benefit to the proposals given that the current stores are fit for purpose, slurry is well managed, silage pits are fit for purpose, not within 10 metres of any surface water and built in such a way as to not cause contamination of ground water, even in the case of a catastrophic structural breach. There will be a significant and harmful environmental impact of the demolition and construction works themselves. Including, but not limited to the carbon impact of equipment haulage, use of construction machinery, aggregates, concrete etc.

Should the proposed regulations be implemented unchanged this successful family business would be subject to costs of well over £1,500,000 of investment which, even if grant aided, would be wholly untenable and would risk the future of the farming partnership as well as the livelihoods of its 6 employees. Although meticulously maintained, under the current proposals all 3 slurry towers would need to be demolished and replaced with larger storage that would provide no financial, management or environmental benefits.

Current Livestock Numbers	220 dairy cows, 40 beef cows, 300 youngstock, 300 store/fat cattle and 580 ewes. Approximately 80 hectares of spring barley grown with 275 hectares cropped for silage.
Existing Capacity	Pre-1991: Three slurry towers totalling 700,000 gallons, allowing 14 weeks storage. Ten concrete shuttered silage pits with capacity for 7,000 tonnes of grass silage. There is not currently the capacity for 22 weeks storage.
Expected Costs	<p>Slurry: Demolition and removal of existing slurry stores and preparation of site – £84,600 +VAT 100,000 gallon slurry store with cover £192,175 +VAT 400,000 gallon slurry store with cover £115,425 +VAT 400,000 gallon slurry store with cover £115,425 +VAT Total £507,630 +VAT</p> <p>Silage: Galvanised kit delivered £83,600 +VAT Concrete wall panels £20,770 +VAT Concrete floor and effluent tank £45,000 +VAT Site preparation, foundations and erection £53,500 +VAT Total for 1 x 1,500 tonne silage pit £202,870 +VAT Total for 5 x silage pits (7,500 tonne) £1,014,350 +VAT</p>

Argyll & the Islands Case Study Two

Beef and sheep farm with one uncovered silage pit. The current slurry store is compliant, but if a requirement that all slurry stores would need to be covered was introduced this would be an additional major investment. It would need to be replaced as it would be unviable to upgrade it. For a farm unit of this size, on the west coast of Scotland, it is not a cost which the farm could provide for, even with a grant. Likely that the cattle would be removed as the farm is not suited to outwintering cattle. There would also be a knock-on effect on the sheep enterprise as there would be no slurry to spread on the grassland, which would lead to a deterioration in sward quality and soil composition.

Current Livestock Numbers	90 cows, 15 bulling heifers, 65 stirks.
Housing	Wintered in cubicles, fed pit-made silage, scraped out every day into an above ground post-1991 store.
Existing Capacity	Pre-1991: One uncovered silage pit.
Expected Costs	Estimated cost of replacement approx. £120,000, which would include the update of dirty water tank, but not including any demolition cost for removal of old pit. A new tanker and dribble bar would need to be bought, to spread the slurry, at a cost of approx. £10,000. A considerable amount of new concrete would also need to be laid in the sheds which are all pre-1991, but still comply with all the existing rules, at an approx. cost of £10,000. Total costs likely to be in excess of £140,000 and likely that there would be an additional cost of approx. £10,000 for contingencies. This works out at approx. £900 per cattle beast.

Ayrshire Case Study One

A family partnership of two brothers with two dairy farms. Both farms are owner occupied. The infrastructure on both farms is well-maintained and invested in with a mixture of pre- and post-1991 stores. The two farms are 6 miles apart both with approximately three months slurry storage at each. They progressed a grant application around 5 years ago to upgrade the storage at each farm to six months. The brothers were advised that because they trade as the one business, they could only get one store on one farm of 1.5 million gallons to cover the extra 3 months capacity of both farms. Two smaller stores at each premises would not be allowed. It was a completely impractical option and would have meant many journeys to move the slurry from one holding to the other for storing and then back out again for spreading. This stalled the application. The proposed regulations would mean having to increase borrowings significantly against already exceptionally slim profit margins and there is the possibility that the bank would not support the additional level of borrowing.

	Farm A	Farm B
Current Livestock Numbers	175 dairy cows with 115 heifers.	200 dairy cows with 140 heifers.
Housing	150 housed in cubicles, 36 on slated courts, 125 bedded	240 housed in cubicles, 100 on bedded courts.
Existing Capacity	Pre-1991: 84,000 gallons slurry capacity under slats, 150,000 concrete lagoon and hardcore midden. One inside silage pit for 1,000 tonnes grass silage, 400 tonnes whole crop and one outside grass silage pit for 1,000 tonnes. Post-1991: one 240,000 gallon slurry store. There is not currently the capacity for 22 weeks storage.	Pre-1991: 80,000-gallon underground store and one midden. Post-1991: Three silage pits (750/2,500/350 tonnes), and 320,000 gallon underground slurry store. There is not currently the capacity for 22 weeks storage.

Expected Costs	£500,000 for slurry storage, £50,000 for silage storage	£100,000 for slurry storage, £100,000 for silage storage
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Ayrshire Case Study Two

Beef and dairy enterprise run on a partnership basis over two units. The farms are on a 1991 secure tenancy and all investments on the farm have been funded by the business with no contribution from the landlord. There has also been a technical issue in securing way-go during the recent amnesty process. This would limit the ability of the business to be able to invest in capital improvements.

The business looked at applying for a £30,000 maximum grant a few years ago. It took some time to get the plans drawn up by the right advisor for a lagoon system and once it was available it was realised that a slurry store would be the better option, by the time the specialist advisor redrafted the new plans the grant window had closed. If there was zero funding available to make improvements/replace the slurry store and silage pits it is likely that father (65) and son (43) would retire from farming. With a 50 or 60 per cent grant, borrowing would have to increase and there would still be a question of viability in doing so due to the background tenancy issues.

Current Livestock Numbers	200 dairy cows, 75 dairy heifers, 25 suckler cows, 200 beef steer/heifers.
Housing	175 head on bedded court, 325 on cubicles
Existing Capacity	Pre-1991: Three silage pits to hold 3,000 tonnes grass silage and 1,000 bales made per annum. Post-1991: Two above-ground slurry stores and a 4,000-gallon collection tank for the slats. There is not currently the capacity for 22 weeks storage.
Expected Costs	£100,000 for slurry storage, £200,000 for silage pits

Dumfries & Galloway Case Study One

This farm unit comprises two businesses, run over three holdings with 200 suckler beef cows. Half the cows are committed to ecologically beneficial SSSI managed grazing.

There would be no return on this level of capital investment. In 4 generations of farming there has never been a single pollution incident. Two months prior to becoming aware of this proposal, the farmer had just signed a new tenancy agreement specifically to gain advantage from the holding's existing perfectly serviceable, pre-1991 accommodation for 220 head, which could no longer be compliant under the proposals outlined in the consultation. The financial commitment of this tenancy is well into six figures. These proposed regulations would jeopardise that investment. It would be unrealistic for a SLDT tenant to invest large sums of capital for expensive infrastructure where there is no return on that investment, unless entirely grant funded. It would also be unfair to expect a landlord to contribute, when they similarly will have granted tenancies in good faith and who would be equally unlikely to see a return on their investment. The alternative options are very limited and will likely lead to the herd being sold.

Current Livestock Numbers	200 beef cows
Existing Capacity	Pre-1991: 200-cube indoor tank, accommodating 60 head, a 450-cube outdoor tank, accommodating 100 head, with additional slurry from 80 cows in adjacent cubicles scraped into same tank. The farmer has just invested a few thousand pounds renewing feed barriers, troughs, slats etc on this tank. There are also wooden cow kennels (100 cows, 100 calves, 80 youngstock capacity), scraped into small channel, further pumped into fibreglass store.

	Pre-1991: 1,200 capacity silage pit. Alternatives to replacement would be to move to round bale silage. This would result in additional plastic usage for 2,000 bales, instead of two silage sheets only at present for the clamp. It costs twice as much to make bales versus the same tonnage of clamp: £28,000 instead of the current £14,000.
Expected Costs	The farmer has struggled to give an estimated cost to replace all the above in entirety as he believes it would most likely be massively out with the realms of any sensible private capital investment in terms of beef suckler cows. Several years ago, the farmer did receive a quote for a basic outdoor tank, excluding roof, feed barriers, troughs, water piping, electrics, gutters, gates etc. This design planned to hold the slurry of 250 head, and was £150,000. The additional items above would have added another £100,000; approx. total cost at approx. £1,000 per head. With rising costs that is likely to be considerably higher now.

Dumfries & Galloway Case Study Two

90 cow dairy enterprise run on 60 hectares with no paid labour. Approximately five years ago, the farm became part of an NVZ area. This meant that the farmer had to put in a new slurry store to meet the 22 weeks storage requirement. Although the new store was partly funded by an SRDP grant this still resulted in the farmer having to increase their bank borrowings.

The farmer believes that under the consultation proposals further investment would be needed to upgrade the silage pit and FYM storage and run off tank to become compliant. This has been estimated at approx. £60,000 excluding professional fees should planning and building control be required.

To fund this level of investment would require a further increase in bank borrowings, as reducing cow numbers would not cover the current financial liabilities. The farmer envisages additional problems associated with getting contractors to do the modifications within the timescales set out in the consultation.

Current Livestock Numbers	90 dairy cows
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Expected Costs	£60,000
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Forth & Clyde Case Study One

Multi-site dairy, beef & sheep farm. This is a complex family run partnership with a number of holdings – two dairy farms, plus two owned and two rented steadings for dairy youngstock, beef & sheep.

Farm A: Owner occupied, 610 dairy cows with 460 youngstock. 120 heifers on slatted courts & 340 bedded. The infrastructure on the farm is well maintained and built before and after 1991. Built before 1991 are; 20,000 gallons tank under 1 slatted cow shed, 30,000 gallons tank under 1 slatted youngstock shed and a 260,000 gallon metal slurry store. Built post 1991; 40,000 gallons under 2 slatted cow sheds and a lined, earth bank slurry lagoon holding 2,500,000 gallons.

Silage storage built pre-1991; 1 large outside pit holding 2000 tonnes grass silage & 2 inside pits holding 400 tonnes between them. Post-1991 silage storage is a large outside pit holding 2000 tonnes grass silage. The estimated cost to replace the metal slurry store is £100k and for the silage pits is £200k.

Farm B: Owner occupied, 155 dairy in cubicle shed with slats, 15 cows on bedded court. The infrastructure on the farm pre-1991 but has been well maintained. There is a 25,000 gallon tank under 1 slatted cow shed and a 320,000 gallon metal slurry store. Silage storage built pre-1991; 1 large outside pit holding 1500 grass silage. The estimated cost to replace the metal slurry store is £100k and for the silage pit is £120k.

Farm C: Owner occupied, 280 youngstock on slatted courts with straw bedding available. The infrastructure on the farm is pre-1991 but has also been well maintained. There is a 10,000 gallon tank under 1 slatted shed and a 220,000 gallon metal slurry store. Silage storage built pre-1991; 1 outside pit holding 1000 grass silage. The estimated cost to replace the metal slurry store is £100k and for the silage pit is £60k.

Farm D: Owner occupied, 200 fattening & youngstock on slatted courts with another 100 on straw courts. The infrastructure on the farm is aged but maintained and built before 1991. There is a 50,000 gallon tank under 1 slatted shed and a 50,000 gallon concrete slurry lagoon. Silage storage built pre-1991; 1 outside pit holding 2000 grass silage. The estimated cost to replace the concrete lagoon is £80k and for the silage pit is £100k.

Farm E: Rented steading, 300 dairy heifers in cubicle shed with slats.

The infrastructure on the farm is well maintained and built before 1991. There is a slatted shed and a 220,000 gallon metal slurry store. Silage storage built pre-1991; 1 outside pit holding 2000 grass silage. The estimated cost to replace the metal slurry store is £100k and for the silage pit is £100k.

Farm F: Rented steading, 80 beef heifers on slats.

The infrastructure on the farm is well maintained and built after 1991. There is a 70,000 gallon tank under 1 slatted shed. This farm does not have 6 months slurry storage capacity. Silage storage built pre-1991; 1 outside pit holding 2000 grass silage. The estimated cost to erect a metal slurry store is £100k and for the silage pit is £100k.

Only farm A meets the proposed 6 month storage requirement at the moment. All other farms would require increased capacity. The infrastructure completed pre-1991 while in good working order and causing no harm to the environment would need replaced, as it is likely that they would not be compliant under the consultation proposals.

On the owned farms, based on the proposed requirements for slurry and silage storage the business would require a minimum of £860,000 capital investment. Given current earnings this could not be taken from cashflow. Due to the current level of borrowing, it is unlikely that the bank would agree to fund this level of investment, given that it will not increase turnover.

The rented properties would require £400,000 of investment. As these properties are owned by retired farmers it is unlikely that they would invest such a large sum only to maintain a livestock housing rental income. It is more likely that they would not invest and the steading would lie empty.

This business produces over 7 million litres of milk a year, over 500 store and fattened cattle, 150 cast cattle and around 1000 fat lambs. We also employ over 20 members of staff, not to mention the employees of our numerous suppliers. If the current proposals for immediate upgrade of slurry and silage storage came into force there is a high probability that stock numbers and business outputs would have to reduce as the business would be unable to afford to operate as it does currently

Forth & Clyde Case Study Two

This is a multi-site family dairy & sheep farm. The dairy farm is owner/occupier with a rented steading for dairy youngstock, contract sheep operation on another farm.

Farm A is an owner-occupied farm, infrastructure is well-maintained and mostly built post-1991. Farm B is a rented steading, infrastructure is built pre-1991 but very well maintained. Farm C is also a rented steading with most infrastructure built pre-1991.

The infrastructure completed pre-1991 while in good working order, and causing no harm to the environment, may need to be replaced if found not to be compliant under the consultation proposals. Substantial SRDP funding was secured in 2010 for Farm A to upgrade a dilapidated farm steading, which did not comply with SEPA regulations at the time.

On the owned farm, based on the proposed requirements for slurry and silage storage the business would require additional investment of approx. £200,000. Given current earnings this could not be taken from cashflow. As there has been substantial investment in the steading over the last 10 years borrowing is already high. There are no guarantees that the bank would sign off on more investment, especially when the investment will not increase business income.

The rented properties would require £300,000 of investment. As this property is owned by a former farmer who still wanted to work with livestock it is unlikely that they would invest such a large sum only to maintain a livestock housing rental income. It is more likely that they would not invest and the steading would lie empty. This farmer does an excellent job of rearing young dairy livestock and it would be unfortunate to lose his skills.

This business produces over 7 million litres of milk a year, over 100 dairy heifers, around 300 store and fattened cattle, 150 cast cattle and around 800 fat lambs. There are also over 10 members of staff employed. If the current proposals for upgrade of slurry and silage storage came into force there would be a significant impact on our business operations and accommodation for 270 heifers would need to be found.

	Farm A	Farm B	Farm C
Current Livestock Numbers	680 dairy cows with 570 youngstock (65 in cubicles, 125 on slats & 380 on straw).	270 dairy heifers,	430 ewes
Existing Capacity	Pre-1991: 260,000 gallon metal slurry store.	Pre-1991: There are two cubicle sheds and a slatted shed which together have a 50,000 gallon tank storage. Also built pre-1991 are two 200,000 gallon metal slurry stores. Silage storage was built post-1991; an indoor pit holding 1200 tonnes of grass silage.	There is a 150,000 gallon metal slurry tower that the landlord would not replace if these proposals came into force. We would need to increase the capacity on farm A to take account of this loss of storage.

	<p>Post-1991: 700,000 gallons tank under 2 slatted cow sheds. Three cubicle sheds that share a 50,000 gallon tank. The youngstock shed scrapes into a concrete midden. Silage storage built post-1991; 1 outside pit holding 2000 grass silage & 1 covered pits holding 6000 tonnes. The silage pits should meet the consultation proposals.</p>		
Expected Costs	<p>£200,000</p> <p>The estimated cost to replace the metal slurry store is £100,000. However to increase capacity to 22 weeks storage would cost around £200,000.</p>	<p>The estimated cost to replace the metal slurry stores would be £200k and for the silage pit is £100k.</p>	

Highland Case Study

This is a small family farm situated in the Cairngorms National Park. The farmer anticipates that the required level of investment would likely mean that he would go out of milk production. The farm is the last dairy farm in the area, with the milk currently supplying Highland Fine Cheeses. The loss of another milk producer to Highland Fine Cheeses has the potential to undermine their business too. The farmer would need a substantial grant to justify investment in new slurry and silage storage. Because of the configuration of the cubicle shed and parlour with the slurry storage system this may also mean considerable investment in the farm buildings too, which again would be very difficult to justify.

Current Livestock Numbers	75 dairy cows
Housing	The cattle are housed in a 100ft x 60ft cubicle shed with a slatted channel. The dairy parlour is built adjacent to and incorporated with this building.
Existing Capacity	The dairy washings are added to the slurry tank, which was built Pre-1991: Dairy washings added to the slurry tank. There is also a silage put, with silage effluent also added to the slurry store. Slurry is spread approx. every 3-4 weeks, when weather and ground conditions allow. There is not currently the capacity for 22 weeks storage.

Lothian and Borders Case Study One

This is traditional LFA livestock farm. The whole farm was previously in an NVZ area, but now only part of the farm is. The farmer, however, still manages the whole farm under NVZ regulations. The farm is tied to this management system and use pit silage fed to beef cattle on slats. They have limited arable and would have to buy in straw if they were to move fully to straw bedding. The cost and the transportation would be expensive and there would be environmental implications of doing that. This system has worked well for the last 40-50 years.

If there was to be zero grant for replacement, then the farmer would not be prepared to borrow money with no financial return. Reducing stock numbers would make the farm unviable. Limited borrowing would be considered if there was a significant grant available. There is currently no succession on the farm, and the farmer would be reluctant to create such a sizable financial burden at this stage of his life.

Current Livestock Numbers	230 suckler cows, 220 heifers and steers (13-25 month), 220 heifers and steers (3-12 month)
Housing	Slatted courts for 230 beasts, straw bedded courts for 340 and 40 are housed on Orkney flooring.
Existing Capacity	Pre-1991: Four slatted sheds and two silage pits. Silage pit capacity is up to 1,000 tonnes and the farm produces 800-1,200 bales per year.
Expected Costs	The pits would not be able to be upgraded and it would be necessary to start again with an estimated cost of between £100,000 - £200,000. The slatted sheds are almost 50 years old but have been well maintained. In the last five years, all slats have been replaced. The tanks are 4.5 ft deep and 1 tank was recently upgraded at a cost of £25,000. The other three would require approx. £100,000 of investment.

Lothian and Borders Case Study Two

This is a very dynamic business, with over 400 hectares of arable land, they finish 1000 cattle and do 'B&B' for 18,000 pigs. They have invested in a diversification project selling bagged potatoes and are going into holiday lets. The farmer employs several people but would like to be able to employ more.

With no grant funding the farmer would be likely to reduce his livestock numbers and change his business model. With uncertainty in the livestock industry he would be cautious of spending that level of investment. If there was a 60 % grant, then he would consider the investment. The only alternative would be to make more baled silage with the associated increased use of plastic wrap. If livestock numbers were reduced then there would need to be a reduction in employed staff. The farmer is passionate about what he does and wants to do it to the very best of his ability. He is proud of his farm, what it produces, providing local employment and supporting the local community.

Current Livestock Numbers	1,000 cattle, 18,000 pigs
Housing	550 cattle housed in bedded courts
Existing Capacity	Pre-1991: One 3,000 tonne silage pit.
Expected Costs	The silage pit is working well and was approved by SEPA following a small upgrade to make it fully compliant. If the pit was now found to be non-compliant under the consultation proposals, then the farmer would anticipate the need for an additional investment of approx. £140,000.

Lothian and Borders Case Study Three

This farm has 2,700 sows over 4 different farms 2 of the farms are in NVZ areas and 1 is not but is compliant with all current regulations. Grants are all very well and good at the time but what about the future maintenance of these and the ongoing costs. What is wrong with a splash plate for slurry spreading, using a dribble bar and macerator all have parts which can easily block and are higher maintenance

Current Livestock Numbers	2,700 sows
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Existing Capacity	They have one over ground slurry tank and concrete midden which is pre 1991. Post 1991 they have 3 concrete middens with 4ft walls and underground concrete slurry tanks. Everything they which is on site is fully compliant with current regulations.
Expected Costs	It would cost £250,000 to build a new slurry store, if they had to replace the underground tanks it would be up around several £million. In a worse-case scenario, there is now way they would be able to carry on and the 40 people who they currently employ would lose their jobs. If it was at the lowest possible cost of £250,000 then they would consider increasing their borrowing. Borrowing all this money for no direct financial gain would be very difficult to take, when all systems are currently working well and compliant.

North East Case Study

This is a family run owner/occupier partnership with three family members and one employee. The farm infrastructure is excellent and well maintained with 4 main cattle courts and a slatted shed for 100 cows. This level of investment is currently not viable. To meet the new requirements as proposed in the consultation would require the farm to increase borrowings to a level that the business would be unlikely to be able to support. A substantial grant would be essential for the business to be able to invest at this level and to remain profitable in the future.

Current Livestock Numbers	300 suckler cows, with all progenies sold at one year old.
Housing	4 main cattle courts and a slatted shed for 100 cows.
Existing Capacity	Pre-1991: One silage pit with 1,400 tonne storage capacity, 2,500 silage bales are wrapped. There is not currently the capacity for 22 weeks slurry storage.
Expected Costs	£150,000 to provide additional storage

Orkney Case Study

The infrastructure of the owned farm is mostly pre-1991, all well-maintained with investment over the years. The farmer would expect to have to increase their borrowing in order to cover costs, as well as reducing his stock even with a 60% grant. This would raise questions over the viability of his business looking forward.

Current Livestock Numbers	110 suckler cows, 50 steer/heifer (13-25 month), 100 steer/heifer (1-13 month).
Housing	220 on slatted courts and 40 bedded.
Existing Capacity	Pre-1991: Three buildings with slatted floors for 100 cows and 70 weaned calves. Post-1991: One building with a slatted floor, housing 60 cattle. Annually, 1,100 tonnes of pit silage are produced, with the addition of 150 bales. The slurry pit holds 1,100 tonnes.
Expected Costs	£50,000 for slurry storage upgrade; £150,000 for slurry pit.

Shetland Case Study

A tenant farmer of two farms across 1,100 acres. Even with a 60% grant available, the farmer would need to reduce their stock numbers or destock. They state that in places like Shetland it would be very difficult to justify new investment in cattle, where herds are often small, if current values persist. They also mention the significant added cost (usually around 30% additional cost) of construction due to freight cost and the transport of materials, uniquely felt in island communities. There is also a limited availability of skilled workforce to carry out upgrades/replacements within the proposed time scale.

Current Livestock Numbers	40 sucker cows, 26 heifers (13-25 month), 41 heifers (3-13 month)
Housing	42 kept in slatted court, 63 in cubicles.

Existing Capacity	<p>Pre-1991: One slatted court, one midden and one silage pit. 800 tonnes of pit silage produced each year.</p> <p>Post-1991: Additional slatted court</p> <p>The farm does not have 22 weeks slurry storage capacity.</p>
Expected Costs	£250,000 for slurry store; £180,000 for silage pit.