

Consultation on Designation of Areas of Natural Constraint

February 2016



Department of
**Agriculture and
Rural Development**

www.dardni.gov.uk

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ISBN 978-1-84807-602-0

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GLOSSARY/LIST OF ABBREVIATIONS

Agricultural land	Land which has been identified as eligible agricultural land within the land parcel identification system (LPIS) in 2015
AFBI	Agri-Food and Biosciences Institute
ANC	Area(s) of Natural Constraint
Common land (CL)	Land on which grazing of animals is shared
Conacre	A system of short-term lettings, not exceeding 364 days
DA	Disadvantaged Areas - areas of land designated under Directive 84/169/EEC and a subset of the LFA
EU	European Union
Fine tuning	Removal of an administrative unit where it can be demonstrated that the biophysical constraints have been overcome
GVA	Gross Value Added – value added to goods and services that are used on farms
Ha	Hectare
LAU	Local administrative unit (in Northern Ireland this is equivalent to an electoral ward)
Less Favoured Area	Areas of land affected by agricultural disadvantage as designated under Directive 75/268/EEC and Directive 84/169/EEC
Lowland/ Non LFA	Agricultural land which is classified as neither Disadvantaged nor Severely Disadvantaged
LPIS	Land Parcel Identification System
SDA	Severely Disadvantaged Areas – areas of land designated under Directive 75/268/EEC and a subset of the LFA
SO	Standard output – standardised value of farm output
UAA	Utilised Agricultural Area

CONSULTATION ON DESIGNATION OF AREAS OF NATURAL CONSTRAINT

SECTION 1 INTRODUCTION

1.1 Purpose of the consultation

The purpose of this document is to seek the views of stakeholders on the approach to designation of Areas of Natural Constraint (ANC). An initial paper was made available in December 2013¹. Since that time, the EU Commission has finalised its regulatory requirements² and refined its guidance³. New maps have now been produced based on this latest information.

Four maps are provided within this document showing the agricultural land that could be defined as ANC under Regulation (EU) No 1305/2013. These maps may be subject to further change as the data are checked and the analysis further refined. The final maps produced will be subject to approval by the EU Commission.

This document will also help inform the development of stakeholder views on the separate consultation on *Options for Future Support to Areas of Natural Constraint*.

1.2 Background

Regulation (EU) No 1305/2013 includes a requirement to designate ANC to replace the existing “Less Favoured Areas” designation. This requirement has been developed by the EU Commission as part of the response to a European Court of Auditors report that found inconsistent approaches to the identification and mapping of Less Favoured Areas across Europe. The new approach to designation is a standardised, EU-wide methodology that identifies constrained land by applying a set of natural (biophysical) criteria and thresholds based on soil, slope and climate. There are eight biophysical criteria in total. *Article 32* and *Annex III* of Regulation (EU) No 1305/2013 provide the detail on how to apply this methodology and achieve a primary map. The Regulation also requires Member States to fine tune the primary map to remove areas where the biophysical constraint has been overcome by

¹ <http://www.dardni.gov.uk/publications/designation-areas-natural-constraint>

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:347:0487:0548:EN:PDF>

³ *Updated common biophysical criteria to define natural constraints for agriculture in Europe*, Institute for Environmental and Sustainability, Joint Research Centre, European Commission (2014) ISBN 978-92-79-38190-4

investment or economic activity. The EU Commission has provided guidance to Member States on a range of approaches to be used to fine tune their maps. Member States have until 1 January 2018 to designate ANC (though earlier designation is possible).

The timing of the re-designation process in Northern Ireland will be driven by the choice of future support to these areas and ANC designation might need to be in place by 1 January 2017. This is discussed in further detail in the consultation document on *Options for Future Support to Areas of Natural Constraint*.

The Less Favoured Area designation in Northern Ireland currently encompasses approximately 727,000 ha of eligible agricultural land, of which approximately 448,000 ha is designated as severely disadvantaged area (SDA) and approximately 279,000 ha is designated as disadvantaged area (DA). This designation has remained unchanged since 1984.

SECTION 2 MAPPING METHODOLOGY

Designation of ANC involves applying eight biophysical criteria based on soil, climate and slope characteristics to eligible agricultural land. Areas identified as being constrained by at least one of the biophysical criteria are then mapped to a recognisable administrative unit such as a ward (LAU 2 level⁴) or at the level of another clearly delineated local unit which covers a single clear contiguous geographical area with a definable economic and administrative identity. If the administrative unit is assessed as having more than 60% of its eligible agricultural area being affected by at least one of the biophysical criteria, it is mapped at this primary stage as being constrained.

Administrative units may also be mapped as constrained at this primary stage if at least 60% of the agricultural area meets certain combinations of at least two of the biophysical criteria, within a margin of 20% of the thresholds set for each criteria⁵.

The next step required is to undertake a fine tuning exercise to remove those administrative units where it can be demonstrated that the constraint has been overcome. This leads to the final map. The guidance issued from the EU Commission provides options for fine tuning and requires Member States to provide evidence that the fine tuning process is complete and carried out correctly with adequate criteria.

2.1 Consideration of different approaches to mapping

The Department has explored the use of alternative administrative units (i.e. electoral wards and townlands) and fine tuning methods to define ANC. A summary of the analysis to date is provided overleaf.

⁴ LAU 2 level = local administrative unit, defined by Eurostat, consisting of municipalities of equivalent units in the 28 EU Member States

⁵ For example, using the two biophysical criteria of shallow soils and steep slope: the threshold for the shallow soils criterion is $\leq 30\text{cm}$ from soil surface to coherent hard rock or hard pan and the threshold for the steep slope criterion is $\geq 15\%$ change of elevation. Therefore, if at least 60% of the agricultural area within an administrative unit contains soils of $\leq 36\text{cm}$ depth (this figure is within 20% of the threshold) **AND** slope of $\geq 12\%$ change of elevation (again this is within 20% of the slope threshold), the administrative unit will be eligible for designation.

Administrative units: Regulation (EU) No 1305/2013 provides the option to choose either townlands or electoral wards as the relevant administrative unit. A townland is a recognised division of land used in Ireland (both north and south), believed to be of Gaelic origin. A townland is the smallest officially defined geographical division of land, smaller than a ward and county. There are 462 wards in Northern Ireland and 9,569 townlands. The ward boundaries⁶ change over time, as a result of reviews by the Boundary Commission, but townland boundaries are largely fixed. In rural areas, townlands are the building blocks of wards in almost all cases.

It could be argued that townlands provide a more appropriate administrative unit when designating ANC as they are likely to be more homogenous in their biophysical nature due to their smaller size, i.e. there is likely to be less variation in the natural constraints of the land within their boundary than in the case of electoral wards. However, using townlands as the basis of designation at the primary stage does create a significant number of isolated “islands” and “inverted islands” within the draft maps (i.e. isolated townlands that are not identified as being constrained biophysically but which are surrounded by townlands that are, and vice versa). Using wards as the designation creates a more uniform coverage with fewer of these islands of designation (which can appear where the wards are geographically very small).

2.2 Presentation of the maps

All maps have been produced by AFBI Agri Environment Branch using the criteria set out in Regulation (EU) No. 1305/2013 and following guidelines produced by the EU Commission and the Joint Research Council, together with economic data from Farm Surveys Branch, DARD. Agricultural land has been identified using the land parcel identification system (LPIS) data (2015) and current ward and townland boundaries have been used as the administrative units.

Over one million hectares of eligible agricultural land was assessed using the eight biophysical indicators, including approximately 35,000 ha of common land. Once a map was produced identifying agricultural land constrained by at least one biophysical criterion, a further cumulative map of constrained agricultural area was

⁶ Ward boundaries have been redrawn and came into effect with the new local council structures in 2015. Ward numbers reduced from 582 to 462.

produced aggregated to the administrative unit identifying those units where 60% or more of the agricultural area exhibited some form of natural constraint.

A cumulative map was also produced showing areas where at least 60% of the agricultural area met certain combinations of at least two of the biophysical criteria within a margin of 20% of the thresholds set for each criteria. This particular map did not bring any further agricultural land into designation.

2.3 Fine tuning approaches

Fine tuning is undertaken for the purpose of excluding areas in which the significant natural constraints have been overcome by investments or by economic activity.

The EU Commission has issued guidance on the application of fine tuning – how to choose indicators, how to apply them, what thresholds to use, what data-sets to use, etc. The guidance splits the indicators into two sections: 1) overcoming of constraints due to investments (i.e. irrigation, artificial drainage or greenhouses); and 2) overcoming of constraints due to economic activity (as measured by standard output, gross value added, average yield of a dominant crop, livestock density, tree density, normal land productivity or farming systems and production methods).

- *Overcoming constraints due to investments*

The application of fine tuning using indicators based on overcoming constraints due to investments is either not relevant or not feasible in a Northern Ireland context. Northern Ireland has no significant irrigated land and although artificial drainage has been a feature of farming in Northern Ireland for many generations, and a lot of land will have been drained at some point; there are no comprehensive records to identify where artificial drainage systems exist. However, poor natural drainage is a criterion used in preparing the primary stage map and the effects of artificial drainage activity have been reflected within the construction of that criterion. Northern Ireland also does not have greenhouse cover at a significant level to contribute towards fine tuning.

- *Overcoming constraints using economic indicators*

Fine tuning using economic indicators must be undertaken to remove land where its natural constraint has been overcome due to economic activity. The economic indicators available in Northern Ireland that are best suited to determining if the

constraint has been overcome are the standard output (SO) indicator and the gross value added (GVA) indicator.

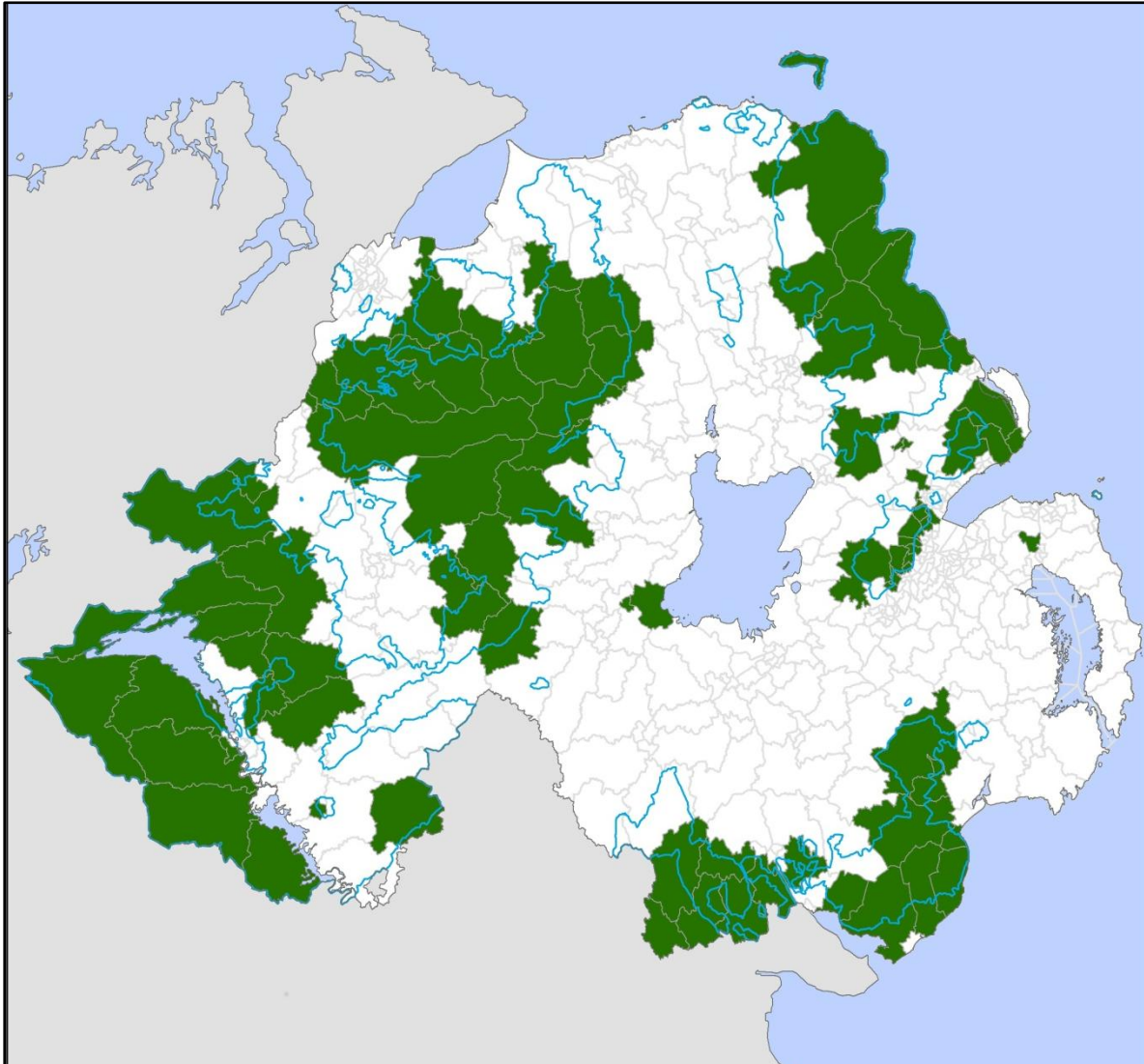
Standard output (SO) data were used in the production of previous draft ANC maps and is the economic indicator that the Commission guidance would envisage being considered in the first instance. The SO indicator measures the standardised value of farm output (excluding subsidies), but takes no account of costs of production. Although it is a satisfactory guide to the level of economic activity, the absence of a cost component means that little can be inferred about the profitability of different farming activities which may have equal output values. As a result, SO data have relatively poor predictive power when deciding if natural constraints have been overcome by economic activity in a particular location.

The GVA indicator measures the value added to goods and services that are used on farms during the production process. It is estimated by deducting costs (excluding depreciation, paid labour and concrete rent) from the value of farm output (excluding subsidies). By including costs as well as revenues in the calculation, GVA is closer to a measure of profit than the SO indicator. As a result, GVA is considered a better predictor of whether economic activity in a particular location has overcome natural constraints.

GVA is, therefore, viewed by DARD as the more robust economic fine tuning indicator. GVA was calculated using data collected by the Northern Ireland Farm Business Survey as part of the EU Farm Accountancy Data Network. This is the system in place across the EU to estimate the income of agricultural holdings. GVA estimates for different farm types were supplemented by Gross Margin data for pigs, poultry and horticulture where GVA could not be calculated to derive the GVA per hectare. Five years of data (2008–2012) were used to provide an average GVA/ha of £325.72 for Northern Ireland as a whole. The average GVA/ha was also calculated at ward level and each ward was assigned an indicator to show whether it was above or below 80% of the Northern Ireland average (i.e. £260.57/ha). This was then used in conjunction with the primary stage analysis to remove those biophysically constrained wards with a GVA above 80% of the regional average.

This process produced a final ANC designation of approximately **422,000 ha**, as shown at **Map A**.

Map A. Draft Area of Natural Constraint at ward level fine tuned using GVA threshold at 80% (blue line is current SDA boundary)



This map was produced by AFBI on behalf of DARD using AFBI's 1:50,000 scale soil map of Northern Ireland and its associated attribute database (AFBI, 2006). The map is based on Ordnance Survey of Northern Ireland's data with permission of the Controller of Her Majesty's Stationery Office, © Crown copyright and database rights NIMA ES&LLA201.3. Unauthorised reproduction infringes © Crown copyright and may lead to prosecution or civil proceedings

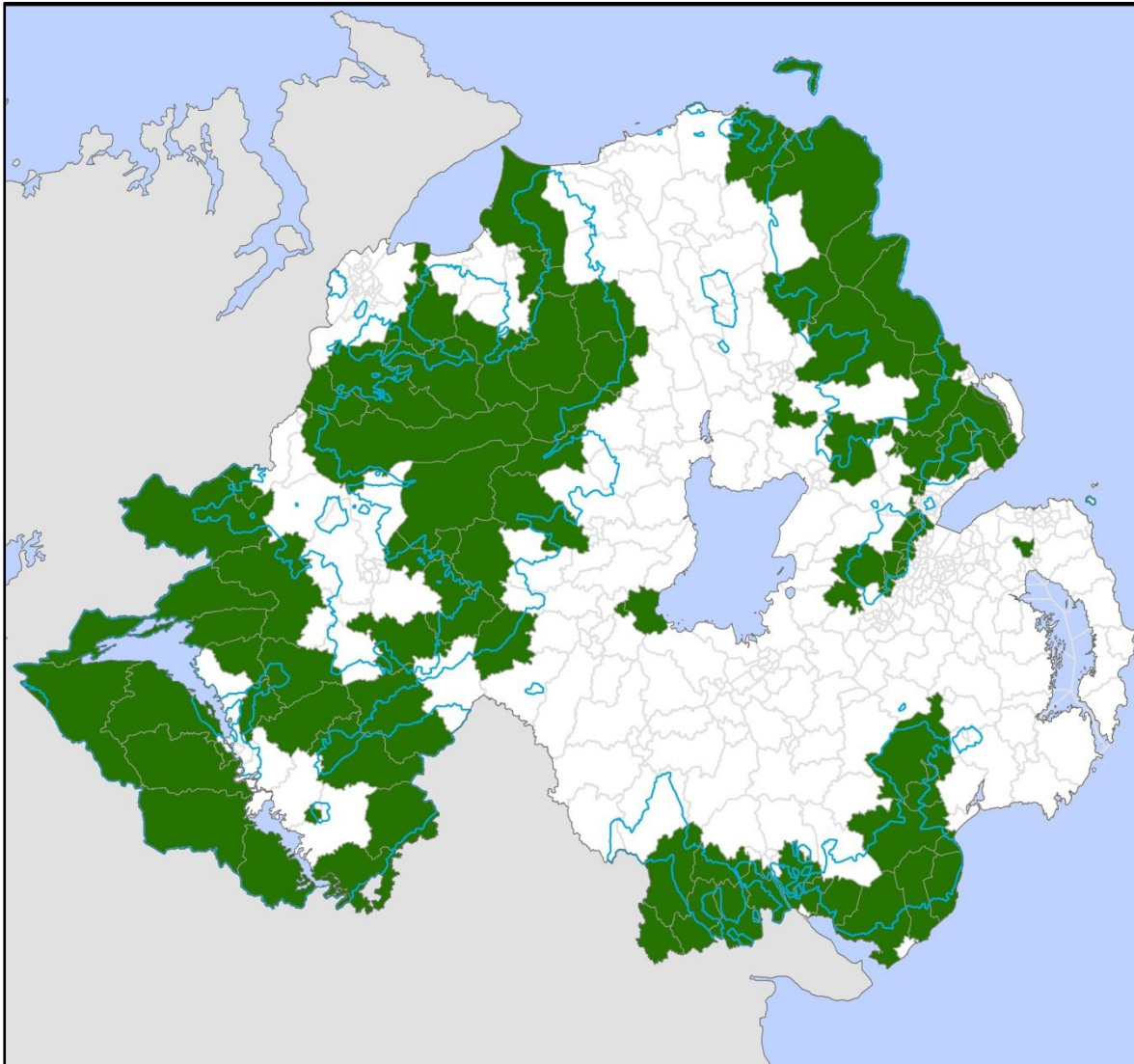
2.4 The “Recursive effect”

EU Commission guidance suggests that 80% of the GVA regional average should be used as the threshold for fine-tuning (i.e. administrative units with a GVA/ha that is above 80% of the regional average should not be included in the designated constrained area). The guidance states that, while the value of this threshold used is based on judgment, any figure above 80% is coming close to the regional average. For that reason, any figure above 80% would not accurately indicate a constrained area. In other words, an administrative unit having a GVA/ha of, say, 95% of the regional average could not be said to suffer significant levels of constraint relative to the region as a whole.

However, given that the large majority of land in Northern Ireland is defined as biophysically constrained at the primary mapping stage, it might be argued that to fine tune out all land that has more than 80% of the GVA regional average per hectare would result in some land being excluded that is still, in effect “constrained” in an absolute sense. This is because when calculating the regional average, a very significant amount of constrained land data are included in that calculation, yet the average will not take account of the high weighting of this constrained land within the calculation. In other words, the regional value average is dominated by the influence of constrained land. This is known as a “recursive effect”. In order to reduce the impact of this effect, a map has been prepared with fine tuning applied at a 90% GVA threshold (£293.15/ha). This results in a constrained area of **487,000 ha** as shown at **Map B**.

A robust case would need to be made to the EU Commission to justify the use of a 90% fine tuning threshold as the best and most objective approach in a Northern Ireland context. In this regard, it has to be noted that the average value of Standard Output (an economic indicator for which comparable data are available across the EU) is €1725/ha in Northern Ireland, which is 91% of the EU average of €1896/ha.

Map B. Draft Area of Natural Constraint at ward level fine tuned using GVA threshold at 90% (blue line is current SDA boundary)



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- ***Use of townland***

It is not possible to calculate GVA data at townland level due to the almost certain high incidence of errors and anomalies that this would create (e.g. the location of the farm business and the related GVA may be associated with one townland, but a significant proportion of the agricultural area of that holding may be located in a different townland, which would grossly distort the GVA or SO calculation).

Technically it is possible to produce a map where fine tuning using GVA is applied at ward level, but townlands are used for the primary mapping stage. In practice, this serves simply to exclude a few townlands within ward boundaries that would otherwise have been designated. However, it cannot add back parts of wards that are fine tuned out. Hence, this approach results in a map that designates a slightly smaller area of ANC overall by excluding townland “islands” within designated wards.

That aside, the EU Commission has indicated that it would not permit the use of a combination of approaches such as sub dividing some wards by grouping certain townlands within them. Such an approach would be impossible to implement in an objective manner in any event.

However, for illustrative purposes only, a map showing townlands fine tuned by 80% GVA at ward level has been produced. This would designate just over **405,000 ha** of agricultural land and is attached at **Annex A, Map 1**.

- ***Use of standard output***

As noted earlier, DARD is of the view that GVA represents a better economic indicator for fine tuning purposes than Standard Output. However, the EU Commission will need to be convinced of this view if the GVA option is to be approved.

Therefore, for information, a further map has been included at Annex A illustrating the effect of fine tuning using standard output as the economic indicator at an 80% threshold level. This map designates **366,000ha** agricultural land and is attached at **Annex A, Map 2**.

2.5 Next Steps

Further quality assurance and finalisation of the maps is ongoing. Once complete and following this consultation, the process of seeking EU Commission approval can be initiated. The mapping and fine tuning criteria used will need to be justified on an objective basis to the EU Commission and be accepted by them. Formal approval of the final map will be secured via a modification to the Rural Development Programme.

SECTION 3 CONSULTATION QUESTIONS

For ease of response to the consultation these questions are also provided in a separate pro forma, which is available from the relevant consultation page on the DARD website [www.dardni.gov.uk/consultations].

- Q1.** Do you agree that Gross Value Added (GVA) should be used as the preferred economic indicator for fine tuning purposes?

Please explain the reason for your answer. If you are answering no, please state your preferred economic indicator along with objective reasons as to why it should be used.

- Q2.** Taking into account that fine tuning is not feasible at townland level, do you agree that ANC designation should be carried out at ward level?

Q3. In your view, does a fine tuning threshold of 80%, or a fine tuning threshold of 90% of Gross Value Added represent a better indicator of significant constraint in a Northern Ireland context? Please explain the objective reasons for your choice.

Q4. Are there any further comments that you would like to add?

SECTION 4 RESPONDING TO THIS CONSULTATION

Responses

Responses to this consultation should be sent to:

Policy and Economics Division
Department of Agriculture and Rural Development
Room 361A
Dundonald House
Upper Newtownards Road
Ballymiscaw
Belfast
BT4 3SB

Or, alternatively by:
E-mail: policy.development@dardni.gov.uk

Timetable

Written responses to the consultation paper should be sent to the postal or email address above and should arrive **no later than 5 pm on Friday 29 April 2016**. It may not be possible to consider responses received after this date. An acknowledgement will be sent to confirm receipt of each response.

Publication of Responses

The Department will publish a summary of responses following the closing date for receipt of comments. Your response, and all other responses to this publication, may be disclosed on request. The Department can only refuse to disclose information in exceptional circumstances. Before you submit your response, please read the paragraphs below on the confidentiality of responses and they will give you guidance on the legal position about any information given by you in response to this publication. Any confidentiality disclaimer generated by your IT system in e-mail responses will not be treated as such a request.

The Data Protection Act states that information provided by respondents to this consultation exercise will be held and used for the purposes of the administration of this current exercise.

The Freedom of Information Act gives the public a right of access to any information held by a public authority, namely, the Department in this case. This right of access to information includes information provided in response to a consultation. The Department cannot automatically consider as confidential information supplied to it in response to a consultation. However, it does have the responsibility to decide whether any information provided by you in response to this consultation, including information about your identity, should be made public or be treated as confidential. If you do not wish information about your identity to be made public, please include an explanation in your response.

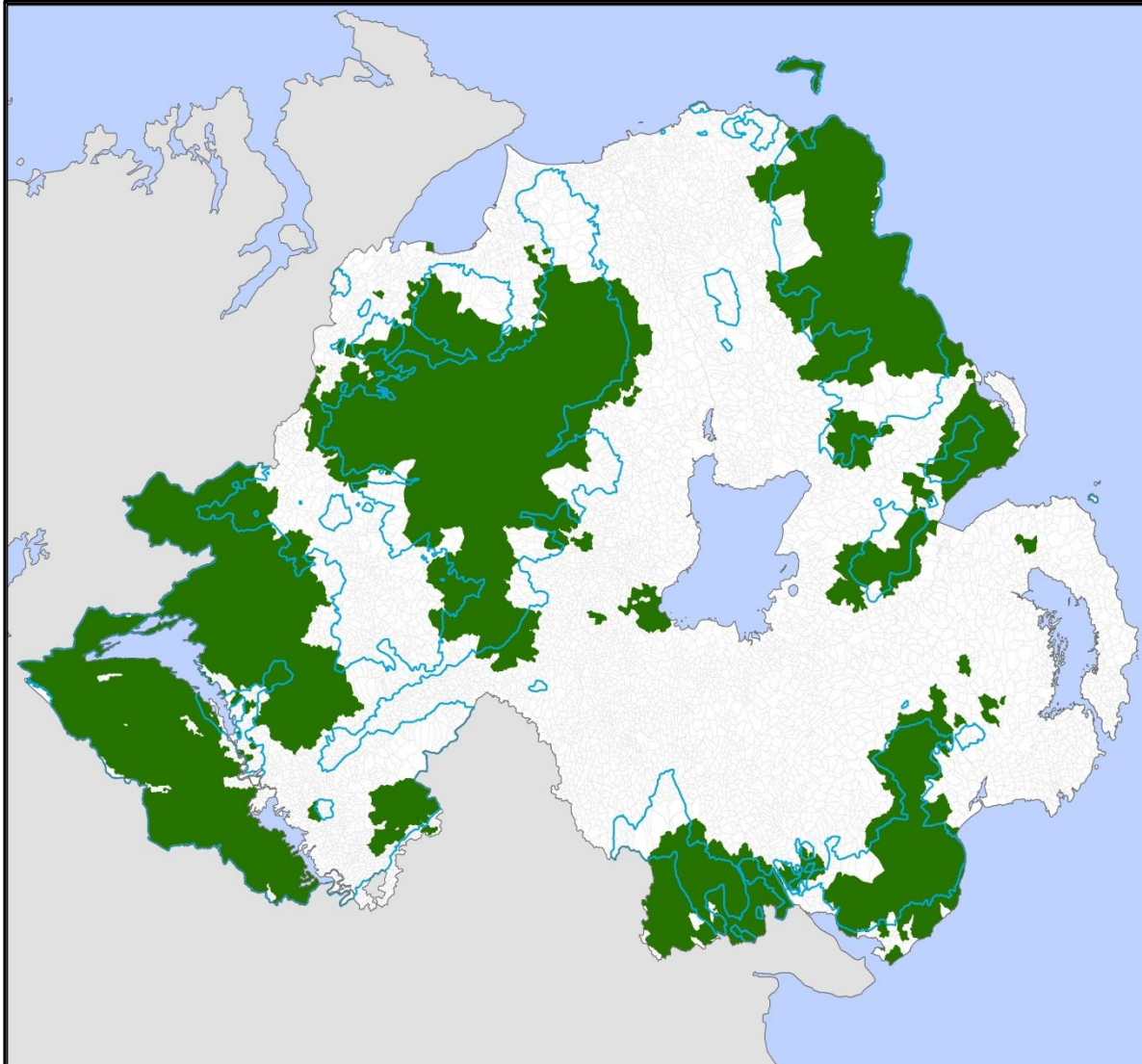
This means that information provided by you in response to the consultation is unlikely to be treated as confidential, except in very particular circumstances. The Lord Chancellor's Code of Practice on the Freedom of Information Act provides that:

- The Department should only accept information from third parties in confidence if it is necessary to obtain that information in connection with the exercise of any of the Department's functions and it would not otherwise be provided;
- The Department should not agree to hold information received from third parties "in confidence" which is not confidential in nature; and
- Acceptance by the Department of confidentiality provisions must be for good reasons, capable of being justified to the Information Commissioner.

For further information about confidentiality of responses please contact the Information Commissioner's Office (or see web site at:

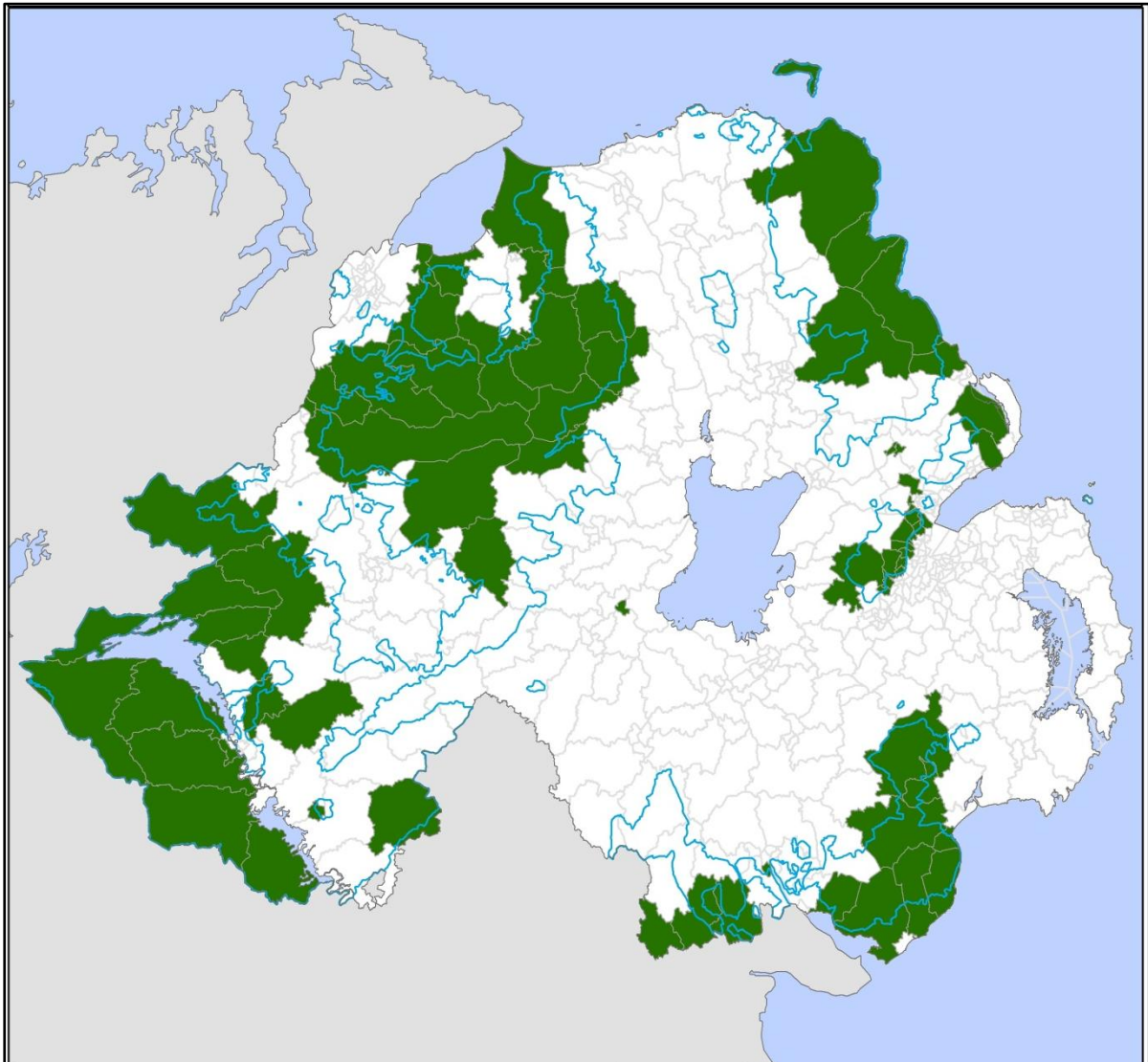
<http://www.informationcommissioner.gov.uk/>.

Map 1. Draft Area of Natural Constraint at townland level fine tuned using GVA threshold at 80% at ward level (blue line is current SDA boundary)



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Map 2. Draft Area of Natural Constraint at ward level fine tuned using SO threshold at 80% (blue line is current SDA boundary)



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Extract from the Rural Development Regulation (Regulation (EU) No 1305/2013)

Article 32 and Annex III

Article 32

Designation of areas facing natural and other specific constraints

1. Member States shall, on the basis of paragraphs 2, 3 and 4, designate areas eligible for payments provided for in Article 31 under the following categories:
 - (a) mountain areas;
 - (b) areas, other than mountain areas, facing significant natural constraints;
and
 - (c) other areas affected by specific constraints.
2. In order to be eligible for payments under Article 31, mountain areas shall be characterized by a considerable limitation of the possibilities for using the land and by an appreciable increase in production costs due to:
 - (a) the existence, because of altitude, of very difficult climatic conditions, the effect of which is to substantially shorten the growing season;
 - (b) at a lower altitude, the presence over the greater part of the area in question of slopes too steep for the use of machinery or requiring the use of very expensive special equipment, or a combination of these two factors, where the constraints resulting from each taken separately are less acute but the combination of the two gives rise to an equivalent constraints. Areas north of the 62nd parallel and certain adjacent areas shall be considered to be mountain areas.
3. In order to be eligible for payments under Article 31, areas, other than mountain areas, shall be considered to be facing significant natural constraints if, at least 60% of the *agricultural area* meets at least one of the criteria listed in Annex III at the threshold value indicated.

Compliance with *those conditions* shall be ensured at the level of local administrative units ("LAU 2" level) *or at the level of a clearly delineated local unit which covers a single clear contiguous geographical area with a definable economic and administrative identity.*

When delimiting the areas concerned by this paragraph, Member States shall carry out a fine-tuning exercise, based on objective criteria, with the purpose of excluding areas in which significant natural constraints, referred to in the first subparagraph have been documented but have been overcome by investments or by, economic activity, *or by evidence of normal land productivity, or in which production methods or farming systems have offset the income loss or added costs referred to in Article 31(1).*

4. Areas other than those referred to in paragraphs 2 and 3 shall be eligible for payments under Article 31 if they are affected by specific constraints and if it is necessary for land management to be continued in order to conserve or improve the environment, to maintain the countryside, to preserve the tourist potential of the area or to protect the coastline.

Areas affected by specific constraints shall comprise farming areas *within* which the natural *production* conditions are *similar* and the total extent of which does not exceed 10% of the area of the Member State concerned.

In addition, areas may also be eligible for payments under this paragraph, where:

- *at least 60% of the agricultural area meets at least two of the criteria listed in Annex III each within a margin of not more than 20% of the threshold value indicated, or*
- *at least 60% of the agricultural area is composed of areas meeting at least one of the criteria listed in Annex III at the threshold value indicated, and areas meeting at least two of the criteria listed in Annex III each within a margin of not more than 20% of the threshold value indicated.*

Compliance with those conditions shall be ensured at LAU2 level or at the level of a clearly delineated local unit which covers a single clear contiguous geographical area with a definable economic and administrative identity. When delimiting areas concerned by this subparagraph, Member States shall undertake a fine-tuning exercise as described in Article 32(3). Areas considered eligible pursuant to this subparagraph, shall be taken into account for calculating the 10% limit referred to in the second subparagraph.

By way of derogation, the first sub-paragraph shall not apply to Member States the entire territory of which was considered as an area facing specific handicaps under Regulations (EC) No 1698/2005 and (EC) No 1257/1999.

5. Member States shall attach to their rural development programmes:
- (a) the existing or amended delimitation pursuant to paragraphs 2 and 4;
 - (b) the new delimitation of the areas referred to in paragraph 3.

ANNEX III of Regulation (EU) No 1305/2013

Biophysical criteria for the delimitation of areas facing natural constraints

CRITERION	DEFINITION	THRESHOLD
CLIMATE		
Low Temperature *	Length of growing period (number of days) defined by number of days with daily average temperature > 5 °C (LGP _{t5}) OR	≤ 180 days
	Thermal-time sum (degree-days) for Growing Period defined by accumulated daily average temperature > 5 °C.	≤ 1500 degree-days
Dryness	Ratio of the annual precipitation (P) to the annual potential evapotranspiration (PET)	P/PET ≤ 0.5
CLIMATE AND SOIL		
Excess Soil Moisture	Number of days at or above Field capacity	≥ 230 days
SOIL		
Limited Soil Drainage *	Areas which are water logged for significant duration of the year	Wet within 80cm from the surface for over 6 months, or wet within 40cm for over 11 months OR Poorly or very poorly drained soil OR Gleyic colour pattern within 40cm from the surface

Unfavourable Texture and Stoniness *	Relative abundance of clay, silt, sand, organic matter (weight %) and coarse material (volumetric %) fractions	≥ 15% of topsoil volume is coarse material, including rock outcrop, boulder OR
		-texture class <i>in half or more (cumulatively) of the 100 cm soil surface is sand, loamy sand</i> defined as: silt% + (2 x clay%) ≤ 30% OR
		Topsoil texture class is heavy clay (≥ 60% clay) OR
		Organic soil (organic matter ≥30%) of at least 40cm OR
		Topsoil <i>contains 30% or more –clay, and there are vertic properties within 100cm of the soil surface</i>
Shallow Rooting Depth	Depth (cm) from soil surface to coherent hard rock or hard pan.	≤ 30cm
Poor Chemical Properties (*)	Presence of salts, exchangeable sodium, excessive acidity	Salinity: ≥ 4 deci-Siemens per meter (dS/m) <i>in topsoil</i> OR
		Sodicity: ≥ 6 Exchangeable Sodium Percentage (ESP) <i>in half or more (cumulatively) of the 100 cm soil surface layer</i> OR
		Soil Acidity: pH ≤ 5 (in water) <i>in topsoil</i>

TERRAIN		
Steep Slope	Change of elevation with respect to planimetric distance (%).	$\geq 15\%$

**** Member States need only check fulfilment of this criterion against those of the thresholds that are relevant to the specific situation of an area***

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