New delineation for Areas with Natural Constraints

Common framework of bio-physical criteria

https://ec.europa.eu/jrc
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From LFA to ANC

LFA in previous regulation

A popular and ‘sensitive’ measure for MS
• Easy to distribute for MS administrations
• Easy to receive for beneficiaries
• Appreciated by MEPs, farmers unions, agricultural ministries

LFA total ≈ 56% EU UAA
Beneficiaries ≈ 13% EU farms (poor targeting)
Financial support: €13 billion (14% RD budget)
32% of Axis2 budget
Less Favoured Areas → Areas Natural Constraints 

Evolving Objectives

**1975-1999**
- Continuation of farming
- Maintain minimum population
- Conserve countryside

**2000-2006**
- Continued use of agricultural land
- Maintain viable rural community

**2007-2013**
- Continued use of agricultural land
- Maintain countryside
- Maintain / promote sustainable farming systems

**2014-2020**
- Continued use of agricultural land
- Maintain countryside
- Maintain / promote sustainable farming systems

New delineation

**Strategic Approach**

- CAP Reform → decoupling → SPS
- Within Axis 2: improving the environment and land management

From LFA to ANC
From LFA to ANC

Process

• 2003: Critical report Court of Auditors
• 2005: New Rural development regulation - Mandate by the Council
  ➢ agreement that the socio-economic dimension is no longer among the objectives as there are other measures which target these issues better
  ➢ no agreement on methodology for delineation
• 2009 – Commission Communication outlining 8 biophysical criteria
• 2009 – Council WP: MS committed to test criteria with their own data
• 2010 – 2013 – simulations by MS, intense information exchanges with MS to apply the criteria
• 2011 – Commission’s legislative proposal with 8 biophysical criteria
• 2013 – Adoption regulation 1305/2013 (Art 32, annex III)
Why a new delimitation

2003: Critical report Court of Auditors concerning “intermediate LFA” (mountain areas and areas with specific constraints not concerned):

• More than 140 national criteria (not comparable, not transparent)
• Poor targeting: under current delimitation, only half of the delimitated area receives some payment
• Socio-economic criteria (low population density, high share of farmers population) inconsistent with intervention logic (low soil productivity, poor climate).
• Under current delimitation, wide discrepancies among MS
New regulation Art 32: Designation of areas

2. Mountain areas – text identical with Art 50 of R 1698/2005
   Shorter growing period
   Altitude + slope
   Areas north of 62\textsuperscript{nd} parallel (and certain adjacent areas to these areas)

3. Areas facing significant natural constraints – new delimitation
   Based on common 8 biophysical criteria with fixed thresholds (Annex III)
   Constraint(s) on at least 60\% of agricultural area in administrative unit
   Fine-tuning for areas where constraint has been overcome

4. Areas affected by specific constraints – some changes
   To conserve or improve environment
   To maintain countryside and preserve tourist potential
   To protect coastline
   Up to 10\% of the entire territory of MS
   Combination of Annex III criteria (within margin 20\% of initial threshold)
   Constraint(s) on at least 60\% of agricultural area in administrative unit
Art. 32: Payments to areas facing natural or other specific constraints

- **Scope**
  - Support to compensate farmers for additional costs and income foregone related to the constraints for agricultural production in the area concerned.

- **Payment**
  - Calculation is consistent with WTO (Marrakesh Agreement, Annex II, points 13a, b, d, f) and follows up on 1698/2005 which foresees income loss/additional cost as well.
    - Delimited region: continuous geographical area with definable economic and administrative identity
    - Delimitation criteria: neutral and objectives, difficulties not arising from temporary circumstances
    - Payments to producers in eligible regions, but generally available to all producers within such region (better targeting)
  - Degressivity (WTO rules) of payments above a threshold level of area per holding to be defined in the programme
Rationale for the new delineation - ANC ‘other’ (Art 32.3)

• Delineation relates to areas with low productivity soil and poor climate, and where maintaining extensive farming activity is important for the management of the land (avoid land abandonment)

• Criteria have to apply to agricultural activity in general, not to specific production / crops

• Criteria have to be adapted for whole EU28, not for specific local situations

• Criteria must be clear, robust, easily understandable - to enable translation into legislative text
Method development

- JRC MARS: Extended experience in Crop modelling, Land quality evaluation, agro-meteorological zoning …

- Review of scientific literature

- Consultation with international organisations, national research institutes and universities: FAO, IIASA, INRA, KUL, ITC …

- Panel of top European experts in the field of land quality assessments, soil, climate, environment, agriculture.

- Many technical meetings with experts and administration from MS
### Bio-physical criteria

#### A common framework with 8 bio-physical criteria

<table>
<thead>
<tr>
<th>Bio-physical criteria</th>
<th>Severe impact on agriculture</th>
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<tbody>
<tr>
<td><strong>Climate</strong></td>
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<tr>
<td>Low Temperature</td>
<td>Short length of growing period</td>
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<td></td>
<td>Crop development and production cycle incomplete = reduced production</td>
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<tr>
<td>Too dry</td>
<td>Precipitation much below evapotranspiration</td>
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<td></td>
<td>Water stress and adverse effect on yield</td>
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<tr>
<td><strong>Climate and soil</strong></td>
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<tr>
<td>Excess soil moisture</td>
<td>Water saturated soil</td>
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<td></td>
<td>Tillage operations not possible</td>
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<td></td>
<td>Grazing period reduced</td>
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<tr>
<td><strong>Soil</strong></td>
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<tr>
<td>Limited soil drainage</td>
<td>Lack of oxygen in root zone, reduced roots metabolism and mineralization process</td>
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<tr>
<td></td>
<td>Crop productivity reduced</td>
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<td></td>
<td>Increase soil-borne pathogens</td>
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<tr>
<td><strong>Terrain</strong></td>
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<tr>
<td>Steep slope</td>
<td>Limited crop opportunities</td>
</tr>
<tr>
<td></td>
<td>Increase management cost</td>
</tr>
</tbody>
</table>

- **Comparable application**: definition and threshold are identical for EU28
- **High simplification potential**: 1 single criterion can trigger delimitation, areal aggregation of criteria possible
Bio-physical criteria

A Common framework covering EU28

- Bio-physical criteria covers the whole range of agro-meteorological conditions in EU28:
  - Northern and north-western MS with climate criteria
  - Southern MS with “Dry areas”, some soil features and terrain
  - Mid-latitude and central Europe MS with soil criteria and terrain
- Comparable application: definition and threshold are identical for EU28
- High simplification potential: 1 single criterion can trigger delimitation, areal aggregation of criteria possible
C1: Low temperature

Definition

- Length of Growing Period (number of days) defined by number of days with daily average temperature > 5°C \((\text{LGP}_{t5})\)
- Thermal-time sum (degree-days) for Growing Period defined by accumulated daily average temperature > 5°C \((\text{TSt}_{t5})\)

Threshold

- \(\text{LGP}_{t5} \leq 180\) days
- \(\text{TSt}_{t5} \leq 1500\) degree-days

Probability approach (20% → 7 years out of 30)
C2: Dryness – Too dry conditions

Definition
Ratio of annual precipitation (P) to the annual potential evapotranspiration (PET)

Threshold
\[ \frac{P_a}{PET_a} \leq 0.5 \]
Probability approach (20% → 7 years out of 30)
C3: Excess Soil Moisture

“Field Capacity Duration”

Definition
Number of days with soil moisture content at or above Field capacity

Threshold
≥ 230 days  Probability approach (20% → 7 years out of 30)
C4: Limited soil drainage

Definition
Water logged areas for significant duration of the year

Threshold
- Poorly or very poorly drained
- Wet within 80cm from the surface for over 6 months, or wet within 40cm for over 11 months
- Gleyic colour pattern within 40cm from the surface
C5: Unfavorable Texture & Stoniness

Definition
Relative abundance of clay, silt, sand, organic matter (weight %) and coarse material (volumetric %) fractions

Threshold
• ≥ 15% of topsoil volume is coarse material, rock outcrops, boulders; or
• Texture class is:
  ➢ sand, loamy sand (more than half of 1m soil); or
  ➢ Topsoil: heavy clay (≥ 60% clay); or
  ➢ Organic soil (organic matter ≥ 30%) of at least 40 cm; or
  ➢ Topsoil clay and vertic properties within 1m soil
C5: Texture and Stoniness – examples

Coarse fragment

Vertisol

Histosol
Organic soil
C6: Shallow Rooting depth

Definition
Depth (cm) from soil surface to coherent hard rock or hard pan

Thresholds
Rooting depth ≤ 30cm
C7: Poor Chemical Properties

Definition
Presence of salts, exchangeable sodium, excessive acidity

Threshold
- Salinity: ≥ 4 dS/m (deci-Siemens)
- Sodicity ≥ 6 ESP (Exchangeable Sodium Percentage)
- Soil acidity: pH ≤ 5 (in water)
C8: Steep Slope

Definition
Change of elevation with respect to planimetric distance (%)

Threshold
Slope $\geq$ 15%
### Methodology Art 32.3

#### CRITERION | DEFINITION | THRESHOLD
---|---|---
**CLIMATE**

- **Low Temperature***
  - Length of Growing Period (number of days) (LGP) OR
  - Thermal-time sum (degree-days) for Growing Period (≤ 180 days)

- **Dryness**
  - Ratio of the annual precipitation (P) to annual potential evapotranspiration (PET) (P/PET ≤ 0.5)

**CLIMATE AND SOIL**

- **Excess Soil Moisture**
  - Number of days at or above Field capacity

- **SOIL**
  - **Limited Soil Drainage**
    - Areas which are water logged for significant duration
  - **Unfavourable Texture and Stoniness***
    - Relative abundance of clay, silt, sand, organic matter, and coarse material (volumetric %) fractions ≥ 15% of topsoil is coarse material, OR Texture class is sand, loamy sand, OR Topsoil is heavy clay (≥ 60% clay), OR Organic soil (organic matter ≥ 30%), OR Topsoil contains 30% clay vertic properties

- **Shallow Rooting Depth**
  - Depth (cm) from soil surface to coherent hard rock ≤ 30 cm

- **Poor Chemical Properties***
  - Presence of salts, exchangeable sodium, excessive acidity

**TERRAIN**

- **Steep Slope**
  - Change of elevation with respect to planimetric distance ≥ 15%
Methodology Art 32.3

Areal aggregation – Art 32.3

- One criterion qualifies for an area to be constrained (when threshold is reached)
  All criteria might be present
- Overlap to be counted only once
- Minimum 60% of the agricultural area of the administrative unit must be constrained to qualify for ANC
  It is agricultural area which matters
- Spatial analysis necessary (with GIS)
Applicability

- The biophysical criteria have been tested in ALL MS with real data, scrutinized by MS experts.
- The biophysical criteria constitute a credible and sound approach to a transparent and comparable delineation across all Member States => common framework.
- Some issues with data accuracy (to be improved in a few MS):
  - Insufficient resolution: several MS use soil map at scale 1:1 million, while most use between 1:25,000 to 1:125,000. It has been shown that maps with a coarse scale capture the constraints insufficiently.
    - e.g. FR, IE have launched national soil mapping program to improve original data (justification for transition period to 2018).
  - Technical assistance funding available through Rural Development regulation.
Aim: to exclude from the ANC delineation areas where the handicap has been overcome (e.g. irrigation in dry areas) or where economic return is sufficient to ensure no risk of land abandonment.

Flexibility for MS
Thanks for your attention!