



AGRIGRID

SSPE-CT-2006-044403

Project workshop

Review of payment calculations in rural development measures in the EU

Grid development and application

Natural handicap payments

Jyrki Aakkula and Antti Miettinen
MTT Agrifood Research Finland

Santorini, 3 June 2008



Introduction

- Natural handicap payments compensate for farmers' additional costs and income foregone related to permanent handicap for agricultural production in the area concerned.
- This presentation addresses the development and application of methodological grids which make the calculation of natural handicap payments more harmonised and transparent.
- We deal with two rural development (RD) measures and two corresponding grids
 - 211 Natural handicap payments in mountain areas
 - 212 Natural handicap payments in other areas with handicaps



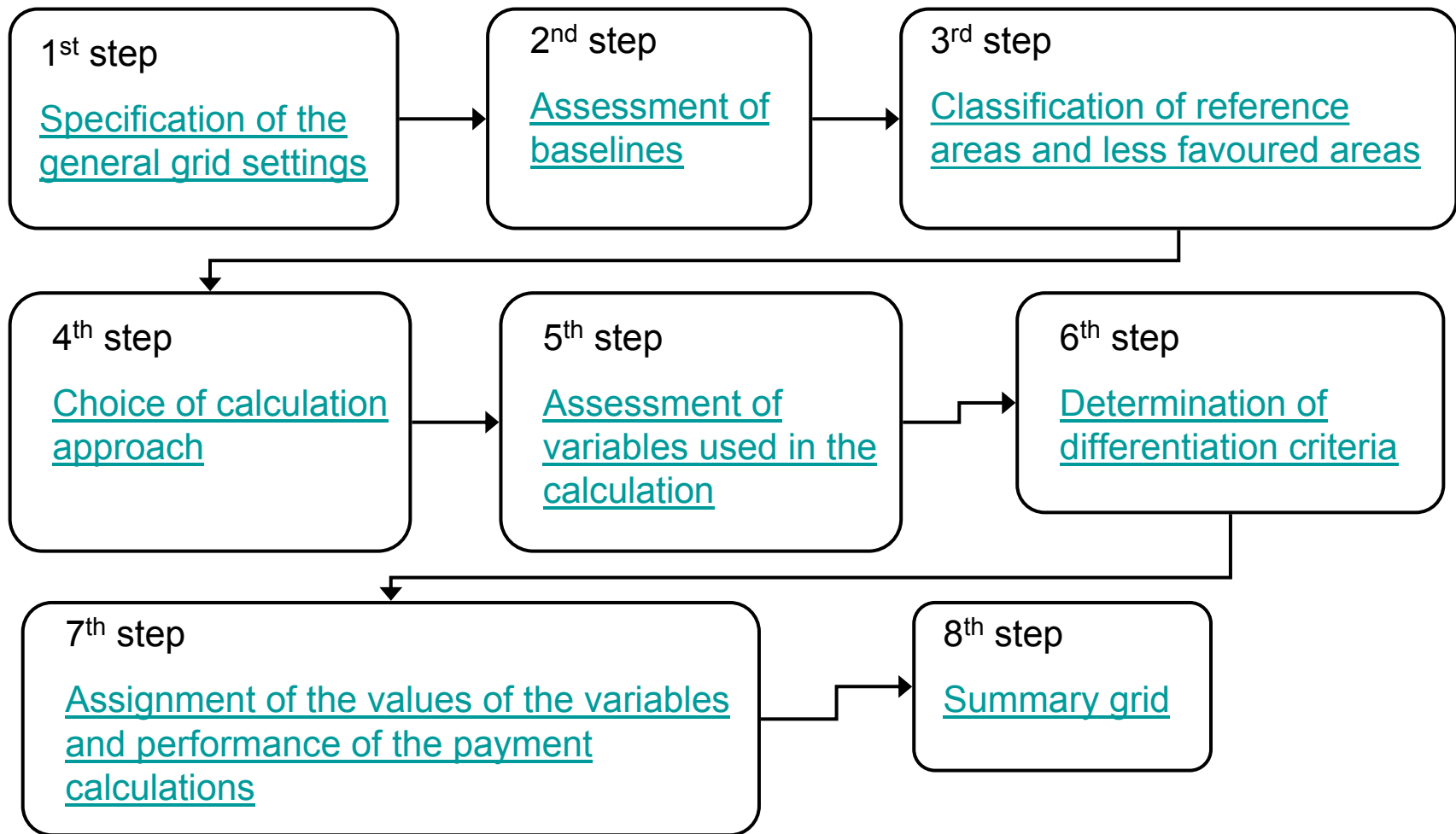
Structure of presentation

1. Introduction
2. Logic frameworks for natural handicap payments
3. Case study analyses
 - Case 1 – Natural handicap payments in mountain areas in CZ
 - Case 2 – Natural handicap payments in other less favoured areas than mountain areas in DE-NRW
4. Concluding remarks and issues to discuss



Logic framework

Natural handicap payments



Specification of the general grid settings

- The specification of the general grid settings includes selecting a country (or a region) which the grid applies to.
- It also includes the selection of a RD measure.
- For the most part, the grids of the two natural handicap measures (211 and 212) will be treated separately.
- However, there are some countries (e.g. FI) where it would be practical to treat both measures together.

[Back](#)



Assessment of baselines

- The SMRs, GAECs and additional national/regional baselines do not have any effect on natural handicap payment calculations.
- The assessment of baselines is included in the logic framework of natural handicap payments in order to be analogous with the general framework.

[Back](#)



Classification of reference areas and less favoured areas

- The reference areas are those areas where there are no permanent natural handicaps.
- The classification of mountain areas utilises such criteria as minimum altitude and minimum slope.
- Other less favoured areas than mountain areas exhibit all of the following handicaps: land of poor productivity, production which results from the low productivity of the natural environment, and a low or dwindling population predominantly dependent on agricultural activity.
- Some countries, like CZ, ES, LT and PL, also have areas affected by specific handicaps.

[Back](#)



Choice of calculation approach

- Either the FADN approach or the Production Process approach may be utilised depending on the country-specific data used in the payment calculation process.
- Natural handicap payment grids typically contain a mix of non-FADN and FADN cost and income categories.

[Back](#)



Assessment of variables

- Some cost categories (variables) used in the payment calculations are described in terms FADN codes.
- Some other cost/revenue elements are more complex and require the use of sub-mask to provide information on how those elements have been calculated.
- [Hyperlink to Natural Handicap Payments Grid \(Excel file\)](#)

[Back](#)



Determination of differentiation criteria

- This step includes
 - selection (or addition) of relevant differentiation categories, and
 - selection (or addition) of relevant differentiation elements within each category.
- For example
 - In GR, payments are differentiated according to farmer characteristics in favour of trained (green certified) farmers, young farmers and the successors of farmers retired early.
 - In IT-UMB, payments are differentiated according to land use. The differentiation elements are: annual specialised crops, perennial specialised crops and other land uses.

[Back](#)

Assignment of the values of the variables and performance of the payment calculations

- At this stage, the values of the variables (cost/revenue components) are specified and the payment calculations are performed.
- There are no transaction costs in the natural handicap payment grids.
- Some countries and regions adjust to the calculated payment level. Hence, the actual payment level might be different than the calculated payments level.
- Also maximum (and some national minimum) payment limits are applied.

[Back](#)



Summary grid

- The summary grid should print on the screen a table of natural handicap payments.
- If possible, the payment rates, net income foregone and additional costs should be separated and differentiated according to relevant differentiation elements.

[Back](#)



Case 1

Natural handicap payments in mountain areas in CZ

- First, relevant baseline requirements are screened.
- After that, mountain areas and reference areas are defined.
 - In CZ, mountain areas are H^A areas if
 - a) the average altitude of the entire municipality or cadastre territory is at least 600 metres above the sea level or
 - b) the average altitude of the entire municipality or cadastre territory is at least 500 metres and at the same time the surface slope is steeper than 15% over an area larger than 50% of the total land area of the municipality or cadastre territory.
 - Those municipalities or cadastre territories which do not meet the above criteria, but the areas are situated inside H^A area or have a common border with an H^A area and significantly exceed one of the above mentioned criteria (i.e. altitude or slope), are H^B areas.



Case 1 continues (2/4)

- The reference areas are those areas where there are no permanent natural handicaps.
- The Production Process approach is utilised in the payment calculation, although some costs are also described in terms of FADN codes.
- The income foregone (i.e. the difference in Gross Farm Income between the farms situated in mountain area and reference area) is calculated with the help of the special decreasing factor (Land Point Value).
- In contrast to the foregone income, there are no additional costs. Instead, there are savings in factor costs for those farms situated in the mountain areas due to lower intensity. These are calculated by assuming one common savings percent for all less favoured areas.
- The payments are differentiated between the H^A and H^B areas.



Case 1 continues (3/4)

- The three year average Gross Farm Income in the reference area (where there are no natural handicaps) is EUR 392.16 per hectare.
- The Land Point Value equals 55.8 in the reference area. In the mountain area, it is 20.3 which is 64% less than in the reference area.
- Hence, the income foregone in the mountain area equals $0.64 \times 392.16 = \text{EUR } 249.50$ per hectare.
- The savings percent in factor costs in the mountain area is 40%. Hence, the savings in the mountain area equals $0.40 \times 0.64 \times 392.16 = \text{EUR } 99.79$ per hectare.
- Thus, the calculated payment level equals $249.50 - 99.79 = \text{EUR } 149.71$ per hectare.



Case 1 ends (4/4)

- The differentiating percentage for the H^A area is 105% and for the H^B area it is 90%.
- The actual payment level for permanent grassland in H^A areas is $1.05 \times 149.71 = \text{EUR } 157$ per ha
- The actual payment rate for permanent grassland in H^B areas is $0.90 \times 149.71 = \text{EUR } 134$ per ha



Case 2 Natural handicap payments in other less favoured areas than mountain areas in DE-NRW

- In DE-NRW, natural handicap payment calculations are based on the replacement value of grassland yield reductions.
- First, relevant baseline requirements, which may affect the payment calculation, are screened.
- After that, reference areas and other less favoured areas than mountain areas are classified. This is done utilising the LVZ indicator which measures the quality of agricultural land.
- There are altogether five soil quality groups (less favoured areas)
 - $LVZ \leq 15$
 - $15 < LVZ \leq 20$
 - $20 < LVZ \leq 25$
 - $25 < LVZ \leq 30$
 - $30 < LVZ \leq 35$



Case 2 continues (2/4)

- For $LVZ > 35$ no allowances are granted (i.e. they may be considered as reference areas).
- The Production Process approach is utilised in the payment calculation.
- It is assumed that in the most disadvantaged group ($LVZ \leq 15$) grassland yields are 25% lower compared with average yields.
- In the subsequent groups, yield losses equal 20%, 15%, 10% and 7%.
- In the reference area, farmers are assumed to receive average yields.
- Yield losses (i.e. differences in the net yields) cause income losses (income foregone) to farmers in the disadvantaged areas.



Case 2 continues (3/4)

- Farmers' net yield losses per hectare within each soil quality group are stated in terms of feed energy (MJ).
- In replacement costs calculations, purchases of wheat at EUR 115/t have been assumed, which results in the replacement cost value of EUR 0.153/10 MJ.
- Farmers' income losses in each soil quality group are calculated by multiplying feed energy losses with the above cost factor.
- The actual payment levels can be modified for example due to tight budgetary conditions. Then, the farmers' income losses are not fully compensated.



Case 2 ends (4/4)

	Reference area	30 < LVZ ≤ 35	25 < LVZ ≤ 30	20 < LVZ ≤ 25	20 < LVZ ≤ 15	LVZ ≤ 15
Net yields in MJ	33 600	31 248	30 240	28 560	26 880	25 200
Replacement cost value EUR/10MJ	0.153	0.153	0.153	0.153	0.153	0.153
Income EUR/ha	514.08	478.09	462.67	436.97	411.26	385.56
Income losses EUR/ha		35.99	51.41	77.11	102.82	128.52
Modification percent		69.5%	66.1%	77.8%	87.5%	89.5%
Actual payment EUR/ha		≤ 25	≤ 35	≤ 60	≤ 90	≤ 115



Conclusions and issues to discuss (1/2)

- The SMRs, GAECs and additional national/regional baselines do not have any effect on the natural handicap payment calculation process.
- All cost and income variables used in the payment calculations may not be described in terms of FADN codes.
- Hence, the fully harmonised payment calculation (utilising the FADN calculation approach) may not be achieved, but the transparency of the calculations is increased as the result of the grids developed.



Conclusions and issues to discuss (2/2)

- In addition, we think that we also have to accept that natural handicap payment grids are always in some sense country-specific. This is because the natural handicap has many dimensions and those dimensions have been weighted and measured differently among countries and regions.

