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AGRIGRID

Workshop 2

Review of payment calculations in rural development measures in the EU

WP5
Review of payment calculations in forestry measures

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Outline

- Introduction
- Payment differentiation
- Eligible criteria
- Cost components
- Quantification of cost components
- Data types and sources
- Conclusion: Problems, solutions and remaining key issues

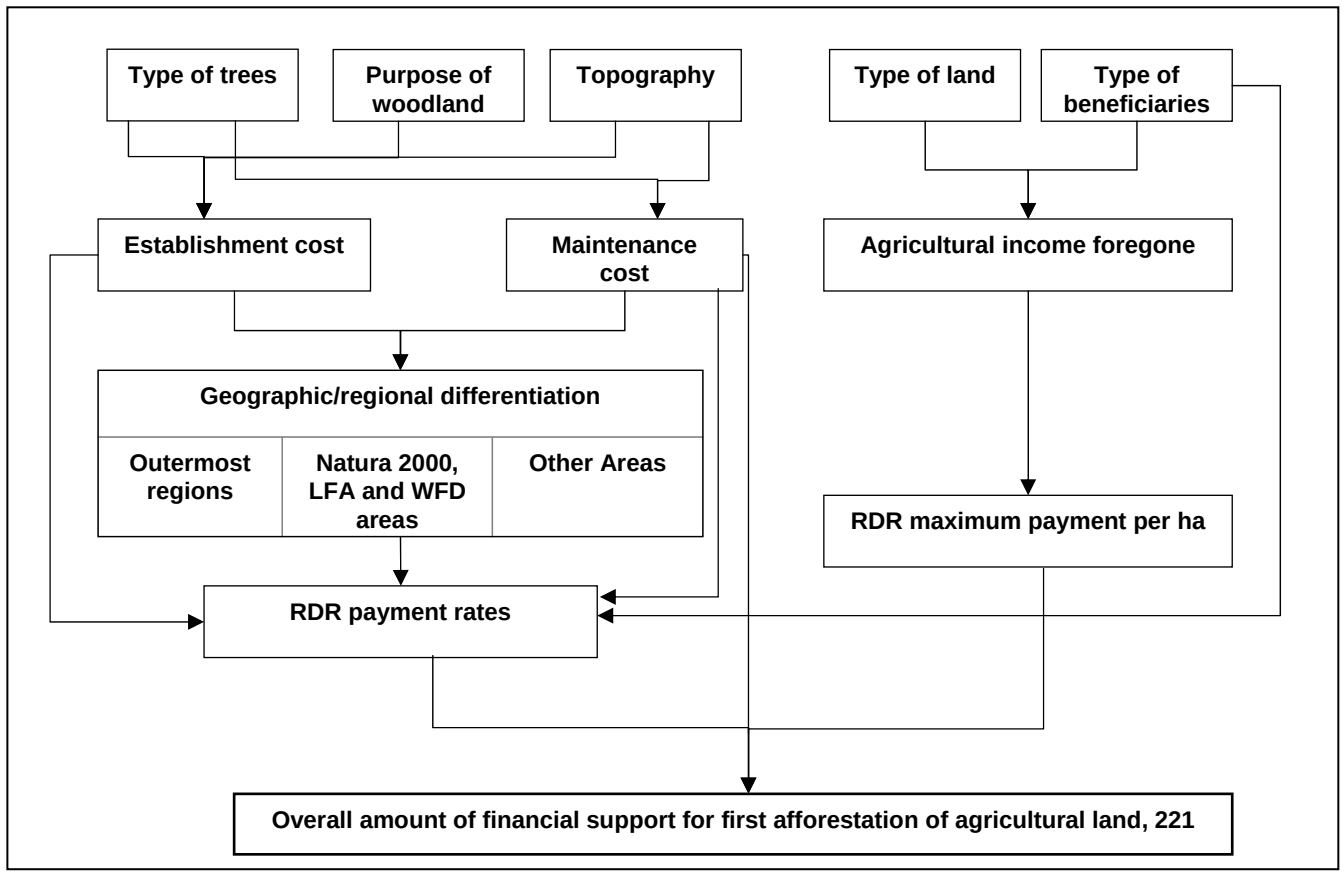
Introduction

- Coverage: Five different forestry measures as implemented in nine countries
- High degree of variation in the implementation of forestry measures across partner countries:
  - Range varies from countries such as Greece where all measures are implemented to Finland where no forestry measures are implemented.
  - Variations in budget allocations in the different countries and between different forestry measures within a country
  - Variations in implementation reflect differences in existing natural conditions and landscapes in partner countries.
  - First afforestation of agricultural land (221) and forest environment payments (225) are the most popular measures.

→ The presentation concentrates on a comparison of common aspects and differences in payment calculations and focuses on measures 221 and 225.

Payment differentiation (1/4)

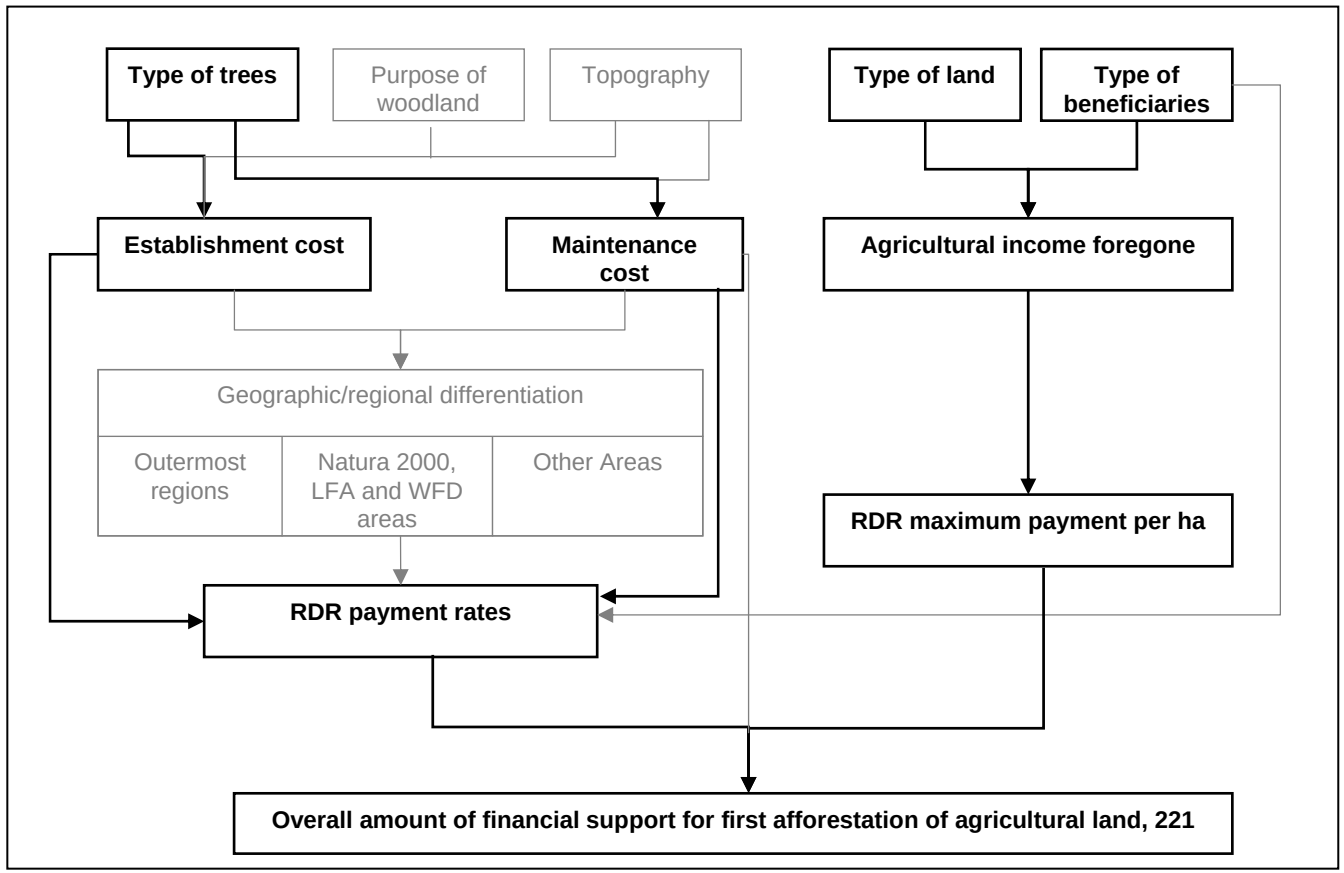
Schematic representation of payment differentiation in the afforestation measure 221 (& 223)



Source: AGRIGRID questionnaires

Payment differentiation (2/4)

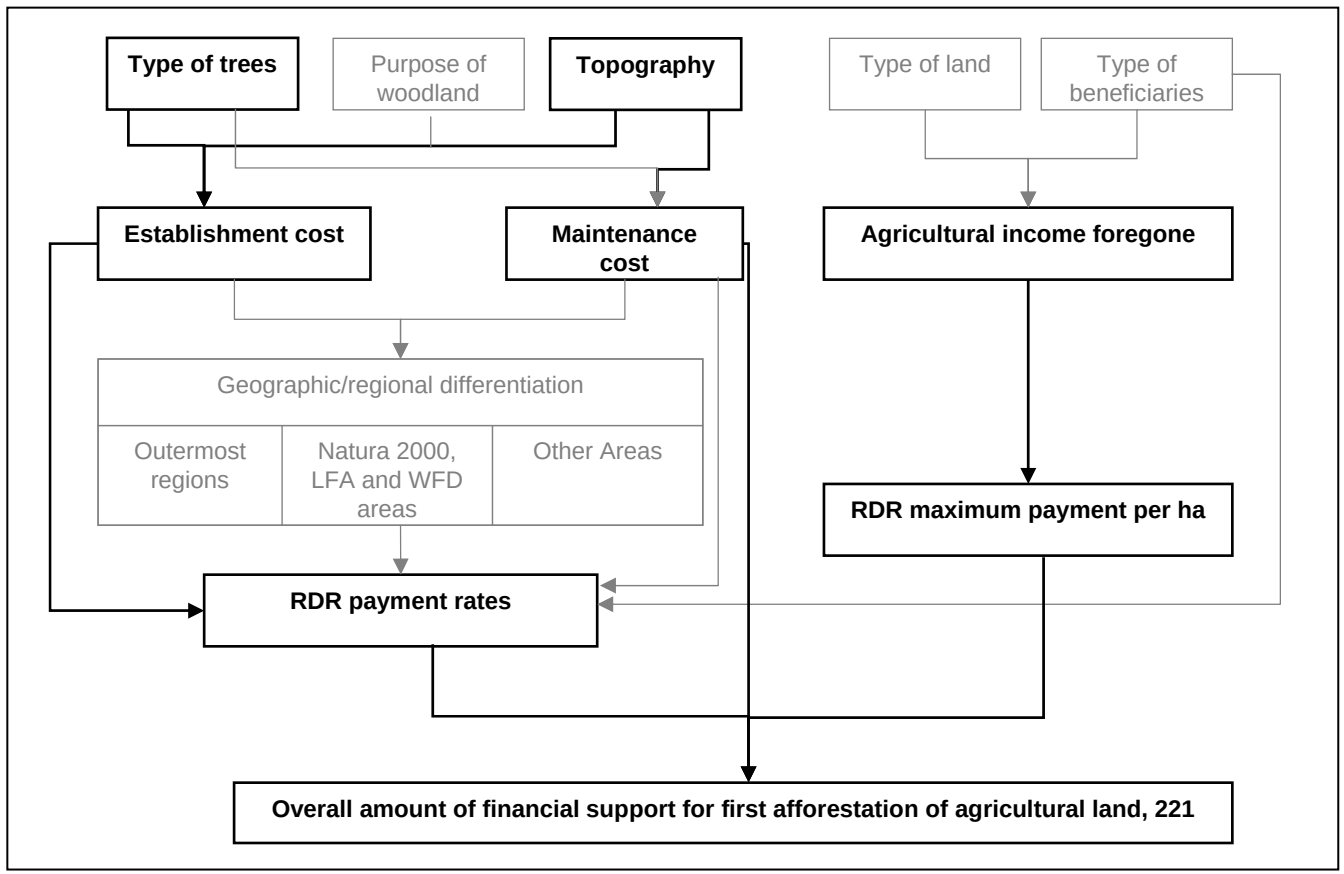
Afforestation 221 (& 223): The Scottish example



Source: AGRIGRID questionnaires

Payment differentiation (3/4)

Afforestation 221 (& 223): The Polish example



Source: AGRIGRID questionnaires

Payment differentiation (4/4)

Agroforestry, 222:

- Regional differentiation of payment rates following the RDR guidelines (GR, IT_{Umb})
- Type of agricultural land (IT_{Umb})
- Type of plants set (plants of small dimensions and striplings) (IT_{Umb})

Forest environment payment, 225:

- No payment differentiation (GR, LT and SCO)
- Type of forest (IT_{Umb}, ES)
- Proportion of specific wood species (CZ)

Restoring forestry potential and introducing prevention actions, 226:

- Payments are based on actual cost and are set on a project by project basis (CZ, LT, PL and ES)

Eligibility criteria (1/2)

Eligibility criteria are similar across partner countries within the same measures.

Afforestation of agricultural land, 221:

- Beneficiaries are owners or tenants of agricultural land (public authorities – establishment costs only)
- Does only apply on agricultural land including arable land and permanent meadows and grassland, including set-aside land.
- Variations in minimum areas
- No planting of Christmas trees

Agroforestry, 222:

- Establishment of silvoagricultural and silvopastoral systems combining agricultural activities with tree planting and management
- Minimum area of 0.5 - 1 hectare
- Christmas trees and fast-growing species for short-term cultivation not eligible

Eligibility criteria (2/2)

Afforestation of non-agricultural land, 223:

- Focus on afforestation for environmental reasons (IT_{Umb}, GR)
- Eligible areas include abandoned agricultural areas and areas with non agricultural use
- Beneficiaries include any physical or legal person owning eligible land
- No planting of Christmas trees and fast growing species

Forest environment payment, 225:

- Eligible beneficiaries range from private owners and occupiers of forested land (SCO) to including municipalities and communities owning and occupying forests (CZ, GR)
- Targeted towards designated areas (DE_{MWP})
- Additional eligibility criteria include forest age (CZ) and size (SCO)

Restoring forest potential and introducing preventive action, 226:

- Eligible area include forest and other wooded areas
- Beneficiaries vary between private owners and tenants of forests, legal persons representing private owners and all public forest administration authorities

Scheme commitments – contractual obligations (1/2)

Afforestation of agricultural land, 221:

- Standard commitments: Afforestation project plan, to be approved by relevant authorities, and maintaining the forest for 15 years
- In some countries additional commitments are defined in relation to tree species (IT, GR, PL), stocking density (ES, SCO), protection and other specific maintenance activities (GR, ES)

Agroforestry, 222:

- Only native tree species can be used (IT)

Afforestation of non-agricultural land, 223:

- Defined commitments are the same as listed under 221.

Scheme commitments – contractual obligations (2/2)

Forest environment payment, 225:

- Variations in the duration of commitments between partner countries
  (e.g. at least 20 years in CZ, 20 – 25 years in GR)
- Development of a forest plan (LT, SCO)
- In addition, commitments exist in relation to the required proportions of specific types of tree species (CZ) and existing conservation plans (DE)

Restoring forestry potential and introducing prevention actions, 226:

- The submitted project has to take into account fire protection regulations.
- No other general contractual obligations or commitments are mentioned, as this measure operates on a project by project basis.
- Support for maintaining forest firebreaks through agricultural activities shall not be granted for areas benefiting from agri-environment support (LT).

Cost components (1/5)

The synthesis of the cost components and their quantification focuses on measures 221 and 225:

- Measure 223 is similar to 221
- Measure 222 is only taken up in two countries
- Measure 226 does not employ the standard cost approach, instead actual costs are reimbursed.

→ The different cost components under each of these three cost categories in 221 are synthesised in the following slides

→ This is followed by a synthesis of the cost components in measure 225.

Cost components (2/5)

Establishment cost components in afforestation of agricultural land, 221

Cost component	CZ	ES	GR	IT_{Umb}	LT	PL	SCO
Preparation of the afforestation project plan	-	-	√	-	√	-	-
Establishment costs	√	√	√	√	√	√	√
Of which specified: Site preparation	√	√	-	-	√	√	√
Costs of seedlings	√	√	-	√	√	√	-
Labour costs for planting	√	√	-	-	√	√	-
Replacing seedlings	√	√	-	-	√	√	-
Protection of seedlings, including fencing costs	-	√	-	-	√	√	√
Transaction costs (design and expense allowances)	-	-	-	√	-	-	-

Source: AGRIGRID questionnaires

Cost components (3/5)

Maintenance cost components in afforestation of agricultural land, 221

Cost component	CZ	ES	GR	IT_{Umb}	LT	PL	SCO
Maintenance costs	√	√	√	√	√	√	√
Of which specified: Weed control	√	-	√	-	-	√	-
Pruning	-	√	√	-	-	-	-
Protection	√	-	-	-	√	√	√
Replacement of plants	-	-	√	-	√	-	-
Other works		√	√	-	-	√	-

Source: AGRIGRID questionnaires

Cost components (4/5)

Agricultural income foregone components in afforestation of agricultural land, 221

Cost component	CZ	ES	FI	GR	IT_{Umb}	LT	PL	SCO
Gross margin loss of agricultural activity	√	√	√	√	√	√	√	√
Loss of direct payments	-	-	√	-	-	-	√	-
Gross margin of productive forestry plantations	-	-	-	√	-	-	-	-

Source: AGRIGRID questionnaires

Differentiation of the calculation of (average) gross margins losses varies:

- Arable and grassland gross margins (CZ)
- Arable, improved and unimproved grassland (SCO)
- More diverse differentiation such as irrigated arable, vegetables, trees, vineyards, etc. (GR)

Cost components (5/5)

Cost components in forest environment payments, 225

Cost component	CZ	DE	ES	GR	IT_{Umb}	LT	SCO
Forest plan	-	-	-	√	-	√	√
Loss of income due to reduced forest exploitation	√	√	√	√	√	-	√
Additional forest management costs	√	-	√	√	√	-	√
Additional felling and skidding costs	√	-	-	-	-	-	-

Source: AGRIGRID questionnaires

The main cost components are:

- Costs in relation to the preparation of a forest plan
- Loss of income due to reduced forest exploitation
- Additional costs resulting from additional management requirements.

Additional management costs include, for example, specific protection measures such as preservation of ecological corridors (GR) and timber marking (IT_{Umb}).

Quantification of cost components (1/7)

Different approaches are applied to quantify standard costs for the establishment of first afforestations, 221:

- Expert studies
- National evaluation guidelines
- Modelling exercises of different planting models
- Planting models are differentiated by different tree species and composition
- Planting models include assumptions on stocking density, percentage species composition, and amount of labour
- Transaction cost defined by Ministry decree
- Shift from detailed standard cost lists for different activities to a tariff systems

In addition to the standard cost approach, some countries have chosen to reimburse a specific percentage (given by RD) of the actual costs of afforestation as approved in the project plan (GR)

Quantification of cost components (2/7)

A similar range of different approaches is applied to quantify standard costs for the maintenance of first afforestations, but in many cases fewer cost details are available.

The applied approaches include:

- Stakeholder evaluation, expert studies, national evaluation guidelines and planting models
- Planting models include assumptions on material and labour required for different activities such as weeding and protection, in some cases differentiated by tree species.
- Shift from detailed standard cost lists for different activities to a tariff systems

Again, some countries have chosen to reimburse a specific percentage of the actual costs of afforestation as approved in the project plan (GR)

Quantification of cost components (3/7)

Agricultural income foregone:

- Gross margin losses are calculated by using averages over a number of years (e.g. 3 years)
- The details of the calculation of gross margin losses vary from using standardised gross margin figures from expert studies (SCO) to more detailed calculations of reductions in revenue and variable costs (CZ)
- Expert estimates are used to determine prices for hay based on costs of hay production (afforestation of grassland)
- In some cases loss of direct payments is included in the calculation by using averages either over all production systems or all crop systems (PL, FI)

Gross margin gains from productive forestry systems:

This component is only included in the calculation in Greece by reducing the derived income foregone by 30% in cases of afforestation with walnuts or chestnuts

Establishment costs for productive broadleaf trees, SCO

Operation within Model	Current Standard Cost	Proposed Cost
85% of area planted with productive broadleaves	MB = £600/k = £1860/ha @ 3100 spacing	85% of £1860 = £1581.00 10% of £750 = £75.00 5% of £770 = £38.50 Total Cost of Planting Ops = £1694.50/ha (less 20% maintenance inclusion in SFGS) = **£1355.60**
10% internal unmapped open space	£750/ha	
5% native/amenity broadleaves	NBL = £700/k = £770/ha @ 1100 spacing	
Planting must be beat-up and weeded until established	Included in tree planting ops	
Area is protected from livestock and rabbits or deer: Tree Shelters, Vole guards and rabbit control.	Tree Shelters for NBL/MB = £1.60 for each 1.2m shelter. NBL = 5% of ha at 1100 = 55 shelters @ £1.60 = £88.00. MB = 85% of ha at 3100 = 2635 shelters @ £1.60 = £4216.00 Average numbers present in the example schemes. Model 100% = £691.05/ha	**£691.05/ha**
Site preparation	To be calculated from Average operations, occurrences and units for the example schemes. Model 100% = £205.33/ha	**£205.33/ha**
Total		**£2251.98/ha (Payment £1600 (70%))**

Source: Forestry Commission Scotland (2007)

Quantification of cost components (5/7)

- Generally, the forest environment payment is determined by calculating income foregone from reduced forest exploitation and higher management costs.
- Only a limited amount of information is available regarding the actual calculation process

→ More detailed examples in the Czech Republic and Germany

Quantification of cost components (6/7)

The calculation in the Czech Republic is based on the assumption of lower income due to lower average felling increment (AFI) in forests with a higher proportion of ameliorative and reinforcing wood species (ARWS).

The different calculation steps are as follows:

- Calculation of AFI for stands with minimal rate of ARWS per rotation
- Calculation of AFI for stands with increased share of ARWS per rotation
- Calculation of AFI difference for whole rotation (multiply by rotation of stands with minimal ARWS)
- Total income foregone divided by payment duration
- Payment = Weighted average across 6 forest model types

Quantification of cost components (7/7)

Example of the calculation of payments to maintain and develop ecological valuable forest biotopes in Mecklenburg West-Pomerania (Germany):

The main elements are:

- Foregone interest income due to renunciation of harvest
- Value loss due to non-usage of trees over a period of 20 years
- Incentive element of 1.1 (until 2006)

Calculation process:

- The calculation implements assumptions on interest rate, percentage value loss per year, fixed yield, net revenue and present value without exploitation costs.
- The sum of the interest and value losses is multiplied by the period of 20 years and discounted to the beginning of the period.
- A yearly annuity is calculated which gives the annual payment per tree.
- Taking into account the maximum payment per hectare, the maximum number of trees per hectare is determined.

Data types and sources

Forestry data:

- Expert studies, advisory services and stakeholder evaluations
- Forest inventory and national and regional regulations
- Economic forestry data such as value of standing timber and prices for firewood
- Methodological frameworks for the evaluation of forest values provided by national Ministries
- Academic literature

Agricultural data:

- FADN and national agricultural data sets to quantify gross margin losses
- Expert studies and stakeholder evaluation to quantify input requirements

Problems, solutions and remaining key issues (1/3)

Problems in relation to

Data availability:

- The most commonly cited problem was a lack of reliable economic and silvicultural data for forestry enterprises and existing data are not up-to-date.
- Difficulties to define economic assumptions in calculations, e.g. interest rate

Standard cost approaches and payment design:

- Standard costs do not take account of wide range of different circumstances and changes in economic data such as price fluctuations
- Discrepancies between five year payment and 20 year commitment period

Policy administrations:

- Lack of methodological experience of payment administrations

RDR requirements:

- Low amount of calculated payment does not provide sufficient incentives for forest owners and can not be increased through an incentive element anymore
- Minimum and maximum amount of forest environment payments does not provide an adequate range of financial support.

Problems, solutions and remaining key issues (2/3)

Solutions in relation to :

Data availability :

- Usage of scientific literature and surveys to obtain required data
- Simplified methods of calculation are applied which are less data intensive

Standard cost approaches and payment design:

- Establishment of Forestry Sustainable Management Plans specifically for the holding as obligatory for receiving the forestry payments

Policy administrations:

- Advice and knowledge has been used from other organisations, both at national and international level

Problems, solutions and remaining key issues (3/3)

Remaining key issues:

- Lack of data and missing opportunity to test the reliability of results remains an important issue.
- Lack of transparency in the calculation of standard costs
- Problems in relation to the applicability of standard costs in the “real world”
- Problems in relation to the applicability of RDR guidelines
- Testing of the efficiency of more differentiated approaches of calculating payments and their impact on over- and under-compensation
- Large variations in the implementation of forestry measures
- Large variations in the approaches used to calculate payments