AGRIGRID

Methodological grids for payment calculations in rural development measures in the EU

WP8
Milestone M8.4
Development of GRID Software

Gerald Schwarz, Keith Matthews, Kevin Buchan, Jane Morrice and Pernette Messager – The Macaulay Institute

Venice, 18-20 February 2008

Outline

- Summary of Milestone/Deliverables

- Guidelines for Grid Development

- Options for Software Platform

- Proposed Software Design:

  - Summary of Financial Support

  - Differentiation Datasets

  - Balance Sheet

  - Cost Components

  - Sub-mask

  - Production Components

  - Differentiation

- Issues for Discussion

From Implementation Plan

- "Following the mid-term workshop and the development of the methodological grids for the payment calculations in the different RD measures in WP2 – WP6, WP8 will then summarise the grid developments in WP2 – WP6 and transform the methodological grids and case study examples developed in WP7 into a software tool applicable by the Commission services and government agencies (milestone M8.4)"

- Outputs from this component – software, documentation and user guide (deliverable D12)

Some notes from the 'General Guidelines' report…

- "the software will be designed in a way that will give the user the possibility to select a cost/revenue from the proposed list or to add a new specific cost/revenue entry"

- "the software tool will be designed in a way that will allow the user to choose the items relevant for the calculation from a list of Statutory Management Requirements"

- "in the development of the software [grouping buttons] should allow the user to "hide" specific cost/revenue categories"

General guidelines for the development of methodological grids for payment calculation in RD measures

- INEA

Options for Software Platform

- From work package description: "It is suggested to use Excel and Visual Basic to transform the methodological grids and case study examples developed in WP2-WP6 and WP7 into a software tool applicable by Commission services and government agencies."

- It has also been suggested that we might develop a web-site based application

- However, I propose that we develop a stand-alone software application using Visual Studio (specifically C# .NET)

Why develop the software in Visual Studio?

- Deliver product with familiar look and feel of other Windows software

- Runs on any platform supported by Microsoft Windows

- Allows for more sophisticated user interface controls and advanced programming techniques compared with Excel/VBA scripting

- Visual Studio provides an excellent development environment (including a suite of editors, designers and debuggers) which encourages a professional and robust final product

- Runs without the need of internet connection (unlike on-line tool)

- No web-server maintenance overhead (unlike on-line tool)

- Setup file can be made available both on CD and on the AGRIGRID website

Proposed Software Design

- The following slides show a proposed mock-up design for how the software might look

- The concepts are based upon the Excel Grids

- Software will allow for the development of a grid per measure

- I have also tried to consider the issues raised in the 'General Guidelines' report and from discussions with team members

- Following this consultation I will refine the design

- Once we are happy with the design I will prepare a prototype in order to facilitate further discussion

Main Window – Summary of Financial Support

AGRIGRID - Main

Description of measure

221 - First afforestation of agricultural land

Differentiation datasets	Edit
RDR payment rates	Edit
Balance Sheet	Edit

Differentiation dataset: Scotland ▼

AGRIGRID is a software tool for developing methodological grids for the calculation of payments in rural development (RD) measures in EU member states.
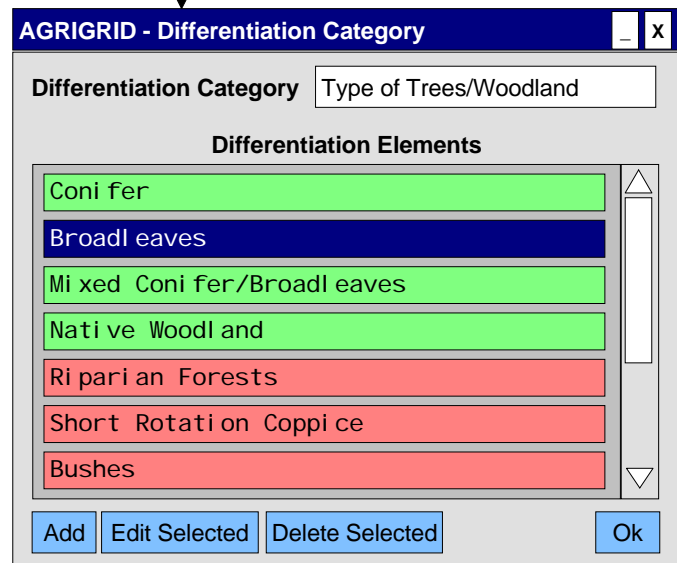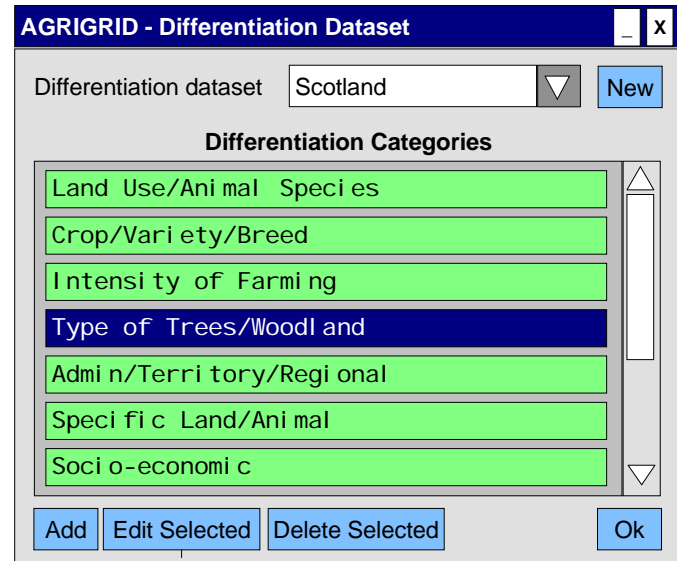
The development of the methodological grids focuses on agri-environment measures, compensatory allowances, Natura 2000 payments, forestry measures and animal welfare and meeting standard measures. These grids enable policy makers and government agencies in the EU and its member states to apply a new harmonised, but at the same time flexible, method for the calculation of payments in the different RD measures.

Agricultural income foregone (prod, subs)	70.00
RDR maximum payment per Ha	300.00
RDR minimum payment per Ha	100.00
Adjusted agricultural income foregone	100.00
Additional costs (costs, trans costs)	80.05
RDR payment rate	0.7
Adjusted additional costs	56.04
OVERALL FINANCIAL SUPPORT	156.04

- Description of the measure in question
- Top-level figures for income foregone and additional costs
- Detail of calculations hidden
- Option to select a differentiation dataset specific to a particular member state
- Options for editing differentiation datasets, RDR payment rates and balance sheet

Differentiation Datasets

- A library of Differentiation Datasets can be created (perhaps one per member state)

- Datasets are comprised of Categories (e.g. Type of Trees/Wood)

- Categories are comprised of Elements (e.g. Broadleaves, Conifer)

- Elements can be switched on/off depending whether they are relevant to the measure or member state

AGRIGRID - Differentiation Dataset _ X

Differentiation dataset   [Scotland ▼]   [New]

Differentiation Categories

- Land Use/Animal Species
- Crop/Variety/Breed
- Intensity of Farming
- Type of Trees/Woodland
- Admin/Territory/Regional
- Specific Land/Animal
- Socio-economic

[Add] [Edit Selected] [Delete Selected]   [Ok]

AGRIGRID - Differentiation Category _ X

Differentiation Category   [Type of Trees/Woodland]

Differentiation Elements

- Conifer
- Broadleaves
- Mixed Conifer/Broadleaves
- Native Woodland
- Riparian Forests
- Short Rotation Coppice
- Bushes

[Add] [Edit Selected] [Delete Selected]   [Ok]

AGRIGRID   *Venice, 18-20 February 2008*

SSPE-CT-2006-044403

THE MACAULAY INSTITUTE

Balance Sheet

- Totals and sub-totals for production, costs, etc (automatically calculated)
- Tabbed area shows the detail for each of the 'sub-totals'
- On/off switches allow items to be included or excluded from the calculations
- Edit buttons allow user to configure the detail of cost & production components

AGRIGRID - Balance Sheet   _ x

Production

SE131-Total Output	170.00	
SE135-Total output crops & products	70.00	ON
SE206-Total output livestock & prods	0.00	OFF
SE256-Other output	100.00	ON

Costs

SE270-Total Inputs	90.05	
SE281-Total specific costs	80.05	ON
SE336-Total farming overhead	0.00	OFF
SE365-Total external factors	10.00	ON

Income

SE410-Gross Farm Income	79.95	

Subsidies

SE605-Total subsidies	0.00	
SE610-Total subsidies on crops	0.00	OFF
SE615-Total subsidies on livestock	0.00	OFF
SE620-Other subsidies	0.00	OFF
SE625-Subsidies on intermediate consum	0.00	OFF
SE626-Subsidies on external factors	0.00	OFF
SE630-Decoupled payment	0.00	OFF

Transaction Costs

...

Cost shown are EUR/Ha

The section on the left contains the totals for production, costs, income, subsidies and transaction costs. The tabbed area shows the detail for each of the sections shown on the left. Switching items on/off on the left will determine whether they are incuded in the calculation of additional costs and income foregone.

| SE135 | SE206 | SE256 | SE281 | SE336 | SE365 | SE610 | ▷ |

SE285-seeds & plants	0.00	OFF	Edit
SE295-fertilisers	0.00	OFF	Edit
SE300-crop production	0.00	OFF	Edit
SE305-other crop specific costs	0.00	OFF	Edit
SE310-feed for grazing livestock	0.00	OFF	Edit
SE320-feed for pigs & poultry	0.00	OFF	Edit
SE330-other livestock specific costs	0.00	OFF	Edit
SE331-forestry specific costs	80.05	ON	Edit

Save   Load

Cost Components

- Create and edit Cost Components
- Example shows how the forestry specific costs might be configured
- Switch Components on/off as appropriate to the measure or member state
- Set a baseline figure
- Choice to specify a single value, a sub-mask or a select differentiation options
- The example on the next slide shows usage of sub-mask

AGRIGRID - Set of Components   _ X

Description: SE331-forestry specific costs

Components

Afforestation project plan	OFF	
Site Preparation	ON	30.05
Cost of seedlings	OFF	
Labour costs for planting	OFF	
Replace seedlings	OFF	
Protection of seedlings	ON	15.00
Transaction costs	OFF	
Weed control	OFF	
Pruning	OFF	
Protection	ON	25.00

Add | Edit Selected | Delete Selected | △ ▽ | Ok

AGRIGRID - Cost Component   _ X

Description: Afforestation project plan   ON

Baseline: 20.00   Please specify the value directly (i), by using a sub-mask (ii) or by differentiation category (iii)

i. Value: 50.05

ii. Submask: (143.00 * 10.50) / 30.00   Edit

iii. Differentiation: -   Edit

Value above baseline: 30.05   Ok

Sub-mask

- Software to provide ability to:
  - Build a formula
  - Specify the elements of the formula
  - Specify the values for these elements
- Value in Cost Component calculated automatically from the sub-mask specification

AGRIGRID - Cost Component _ x

Description	Afforestation project plan	ON

Baseline — 20.00

Please specify the value directly (i), by using a sub-mask (ii) or by differentiation category (iii)

i. Value — 50.05

ii. Submask — (143.00 * 10.50) / 30.00 — Edit

iii. Differentiation — - — Edit

Value above baseline — 30.05 — Ok

AGRIGRID - Sub-mask _ x

Equation — (A * B) / C — Ok

Elements of Equation

A	Labour (hr)	143.00
B	Wage (EUR/Hr)	10.50
C	Avg Area (Ha)	30.00
D		0.00
E		0.00

Production Components

AGRIGRID - Production Component _ x

Description | Scots Pine | ON

Yield

Baseline	13.00	Please specify the value directly (i), by using a sub-mask (ii) or by differentiation category (iii)
i. Value	11.00	
ii. Submask	-	Edit
iii. Differentiation	-	Edit
Value above baseline	-2.0	

Price

Baseline	180.00	Please specify the value directly (i), by using a sub-mask (ii) or by differentiation category (iii)
i. Value	180.00	
ii. Submask	-	Edit
iii. Differentiation	(0.70 * 300.00) - 30.00	Edit
Value above baseline	0.00	

Production (Yield * Price)

Baseline	2340.00
Value	1980.00
Value above baseline	-360.00

Ok

- Production Component similar to Cost Component window but instead of single figure we must specify a Yield and Price

- Again, we have baseline option and we can specify a sub-mask or Differentiation option

- Example on next slide shows a possible usage of Differentiation options

Differentiation

AGRIGRID - Differentiation for Component

Available Differentiation Categories
Please select those that apply to this component

- Land Use/Animal Species
- Crop/Variety/Breed
- Intensity of Farming
- Type of Trees/Woodland
- Admin/Territory/Regional
- Specific Land/Animal
- Socio-economic

Selected Differentiation Elements
Please select an element from each

| A: Type of Tree | B: Socio-econo | C: Admin/Territ |

Conifer	0.90
Broadleaves	0.70
Mixed Conifer/Broadleaves	0.80
Native Woodland	0.95

Usage
Define how the elements should be applied.

| (A * B) + C | = | (0.70 * 300.00) - 30.00 | = | 180.00 | Ok |

- Consideration should also be given to Luca's suggestion that the software could represent the differentiation categories as a tree structure…

Discussion

- Issues with proposed software design
  - Is the representation of the baseline adequate?
  - Is the representation of the sub-mask adequate?
  - Differentiation categories – should the 'value' derived from the differentiation selections be treated as a multiplier or should we use the value directly, or do we need both options?
  - Are there any measure or regional specifics not handled within the proposed design?
  - Do we need to add option to choose between 'production process' or 'profit-and-loss' approach?