EXECUTIVE SUMMARY

STUDY ON HNV INDICATORS FOR EVALUATION

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The Executive Summary for the 'HNV Indicators for Evaluation' study for DG Agriculture has been prepared by Tamsin Cooper, Kathryn Arblaster and David Baldock (IEEP), and Guy Beaufoy (EFNCP).

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1 THE HIGH NATURE VALUE CONCEPT

The High Nature Value (HNV) concept first emerged in 1993 and recognises the causality between certain types of farming activity and 'natural values' (Baldock *et al*., 1993). Typically, HNV farming systems are low intensity, low input systems, frequently with high structural diversity. In addition, the utilisation of semi natural vegetation by livestock, often in combination with the presence of other semi natural features, is a key characteristic of these systems. These systems and their associated features are beneficial to biodiversity, and support the presence of species and habitats of European, and/or national, and/or regional conservation concern.

Recently, the high nature value concept has been applied to forestry. On account of a combination of structural, compositional and functional characteristics, all natural, and a majority of semi-natural forests, when coupled with an ecologically sympathetic management regime (historical and present), can support high levels of biodiversity and thus can be considered HNV forests.

2 HNV INDICATORS IN THE CMEF

Under the EAFRD (Council Regulation 1698/2005), Member States receive Community support for agreed rural development programmes which should meet the Community's strategic objectives. The objective relating to High Nature Value Farming and Forestry is:

> "To protect and enhance the EU's natural resources and landscapes in rural areas, the resources devoted to axis 2 should contribute to three EU-level priority areas: biodiversity and the preservation and development of high nature value farming and forestry systems and traditional agricultural landscapes; water; and climate change." (Council Decision 2006/144/EC, OJ L 55/20, emphasis added).

Rural development programmes will be subject to a mid term and ex post evaluation in 2010 and 2015, respectively, to assess both the efficiency and effectiveness of rural development measures and the extent to which the objectives of the programme have been achieved. The Common Monitoring and Evaluation Framework (CMEF) provides a single framework for the monitoring and evaluation of all rural development interventions through the application of five sets of indicators.

There is a suite of indicators designed to measure whether the High Nature Value resource of a Member State is being preserved and maintained which are also enshrined in the Implementing Regulation (Commission Regulation 1974/2006).

Baseline Indicator 18: Biodiversity: High nature value Farmland and Forestry, measured as UAA of HNV Farmland, in hectares.

Result Indicator 6: Area under successful management contributing to biodiversity and HNV Farming / Forestry, measured as the total area of HNV Farmland and Forestry under successful land management, in hectares.

Impact Indicator 5: Maintenance of HNV Farming and Forestry, measured as changes in High Nature Value areas and defined in terms of quantitative and qualitative changes.

3 IMPLICIT OBLIGATIONS ON MEMBER STATES

In order to meet the objective to preserve and enhance HNV Farming and Forestry systems and to conduct effective monitoring, there are a number of implicit obligations on Member States, including:

- Have measures in place to maintain their HNV Farming and Forests and Traditional Agricultural Landscapes;
- Apply Baseline Indicator 18 at the start of the rural development programme;
- Introduce indicators to measure the extent and quality of their HNV Farmland and Forests annually, from 2010, to the end of the rural development programme. These indicators will be a modified version of the Baseline Indicator, and will relate to Impact Indicator 5 so that changes may be detected over time;
- Apply indicators to monitor the extent and quality of their HNV Farmland and Forests at the end of the rural development programme (Impact Indicator 5);
- Where appropriate, measure the extent (in hectares) of their Traditional Agricultural Landscapes over the period of the current rural programme;
- Appoint programme evaluators to evaluate the extent to which the programme objectives have been achieved.

4 DEFINITIONS OF KEY TERMS

Within the study, a range of associated terms relating to the overarching HNV farming concept is used, reflecting the diversity of terms in the literature. HNV farming is presented as the umbrella concept and can refer both to HNV farmland areas and HNV farming systems. HNV farmland areas and HNV farming systems are not interchangeable concepts. The distinction broadly reflects differences in approach to their characterisation, and the indicators and data used in their identification. HNV farmland areas are defined with reference to the HNV state, as such, delimiting fairly static areas of farmland, whereas HNV farming systems are characterised, in part, in terms of the driving forces for the HNV state, which are dynamic and change over time. This study sets out an approach to identifying HNV farming systems. Whilst the indicators presented relate to the characteristics that typify an HNV farming system, they refer to land use, and as such, are termed HNV farmland indicators.

HNV Farmland Areas and Farming

A definition of HNV farmland at the European scale has been developed under the IRENA operation (EEA Report No. 6/2005, drawing on the work of Andersen *et al*., 2003). For the purpose of developing the CMEF Impact Indicator, the definition first developed by Andersen *et al*., (2003) has been modified within this study to take account of the national and/or regional scale.

> "High Nature Value farmland comprises those areas in Europe where agriculture is a major (usually the dominant) land use and where that agriculture supports or is associated with either a high species and habitat diversity, or the presence of species of European, and/or national, and/or regional conservation concern, or both."

It must be noted, however, that not all HNV farmland makes the same contribution in conservation terms. The highest grade of HNV farmland is that which supports the presence of species of European conservation concern, and the lowest grade is that which supports species of regional conservation concern.

HNV Farmland Features

> "An HNV farmland feature supports the presence of habitats and species of European, and/or national, and/or regional conservation concern whose survival depends on the maintenance or continued existence of the feature."

HNV Forests

> "High Nature Value forests are all natural forests and those semi-natural forests in Europe where the management (historical or present) supports a high diversity of native species and habitats, and/or those forests which support the presence of species of European, and/or national, and/or regional conservation concern."

Traditional Agricultural Landscapes

> "Traditional Agricultural Landscapes in Europe are typically derived from historic - frequently family and/or subsistence-style - farming methods where the dominant cultural landscape characteristics are the result of a traditional or locally adapted approach to management. In general, these farming systems are characterised by the presence of farmland features, whose distribution will be regionally and/or locally specific, which contribute to the landscape's aesthetic qualities as well as to supporting its ecological integrity."

5 MONITORING CHANGES IN THE EXTENT AND QUALITY OF HNV FARMLAND AND FORESTS

Data exist on the approximate extent of potential HNV farmland areas in 26 Member States of the EU at the present time (excluding Malta)[1]. The JRC/EEA have mapped the distribution of HNV farmland areas drawing on CORINE land cover data, trends in bird and butterfly populations, Natura 2000 data and some national data, including grassland surveys. These maps are useful in providing a preliminary indication of the location of HNV farmland areas, however, this measure of the extent of HNV farmland areas is not sensitive enough to inform the monitoring of the impact of policy over the reasonably short time frame of a rural development programme.

As a result, a complementary approach has been developed for the purposes of monitoring and evaluating rural development programmes and is described below. This approach involves 1) characterising potential HNV farming systems and forests and identifying the nature values - including the species and habitats of European and/or national, and/or regional conservation concern - associated with them; and 2) selecting indicators to identify and measure the extent and quality of HNV farmland and forests, within the period of the current rural development programmes.

Member States also have the option of measuring the extent of their Traditional Agricultural Landscapes. This would involve characterising these landscapes on the basis of three criteria defined in chapter one of the report and the development of nationally specific indicators to measure the extent of TAL.

6 CHARACTERISING HNV FARMING AND FORESTS, AND TRADITIONAL AGRICULTURAL LANDSCAPES

Characterising and Identifying HNV Farming Systems

A typology of livestock, arable and permanent crop systems in the EU-27 is presented in chapter three of the report. It identifies generic characteristics which distinguish systems which are most likely to be HNV from non-HNV systems. The broad potential HNV farming systems identified through the European typology can be observed in national and regional sub-types and under the approach presented here, Member States would be encouraged to identify their sub-types.

Once likely HNV farming systems are identified, their key characteristics would be described, drawing on expert knowledge and relevant literature. Characterisations would be structured around three criteria derived from the definition of HNV farming systems:

[1] For further information on the work of the EEA and the JRC see http//eea.eionet.europa.eu/Public/irc/envirowindows/hnv/library).

1) Intensity of land use;

2) The presence of semi-natural features; and

3) The presence of a land use mosaic.

The characterisation of the system would include providing information on the physical characteristics of the region; the production characteristics of the system; management practices; semi-natural features; the scale and diversity of land cover; the biodiversity supported by the system, including the species and habitats of European, national and/or regional conservation concern, and Natura 2000 habitats and species. It is critical that the relationship between the intensity of use, the presence of semi-natural features, the presence of a land use mosaic and the nature values - the conservation needs of habitats and species - are specified.

Characterising and Identifying HNV Farmland Features

Semi-natural features are an integral part of HNV farming systems. In addition, HNV features can be found in more intensive agricultural landscapes. Although these HNV features would contribute an HNV presence to the intensive agricultural land, they are not part of an HNV farming system.

To identify likely HNV farmland features, Member States would need to identify which features are of a high enough habitat quality to support the presence or likely reintroduction of species of conservation concern. This would be ascertained through the identification of selected species of European, and/or national, and/or regional conservation concern, which depend on the maintenance or continued existence of farmland features for their survival. For the species selected, a description would be provided of their relationship with, and dependence upon features in the agricultural landscape, with attention paid to the size, density and condition of the feature, and its spatial pattern in the landscape.

Characterising and Identifying HNV Forests

To identify potential HNV forests at either the national or regional scale involves first classifying forests as ‘naturally dynamic’, ‘semi natural’ or ‘plantation’. This schema is based on the three categories used to assess the degree of forest naturalness under the MCPFE Indicator 4.3 (EEA, 2006). All naturally dynamic forests are HNV; all semi natural forests have the potential to be HNV, although some will not be; and plantation forests are not HNV forests in their current state (see chapter five for a European typology of potential HNV forests).

The HNV status of a semi-natural forest is a function of its state and the present day and/or historical management regime. Management may mimic natural processes, or comprise cultural practises that were typical in pre-industrial woodland and which are known to promote biodiversity. Member States with more widespread natural forest may be more selective about which semi-natural forests may qualify.

To determine whether a semi-natural forest is HNV or not, one, or a combination of the criteria listed below may be applied at the scale most appropriate to national conditions. The first is the core criterion and will eliminate most semi-natural forests that are not HNV. One, or a combination of criteria two to four need only be applied where there is some uncertainty over whether a forest is HNV or not. For each criterion, a threshold is set at which a forest is classified as HNV, providing a justification based on the ecology of the forest. The four criteria are:

1. Proportion of native tree species (measured as the percentage of native species per given area).

2. Volume of standing and lying deadwood in the forest (measured in metres^3 / hectare).

3. Density of large trees in the forest (measured as the number of trees per given area).

4. The proportion of the area of a forest which is made up of stands older than the age of economic maturity (measured as the percentage of old trees per given area).

Characterising and Identifying Traditional Agricultural Landscapes

If appropriate, Member States could identify and characterise TAL on the basis of the following three criteria:

1. The existence of high aesthetic and cultural values;

2. The pursuit of a broadly traditional or locally adapted approach to management;

3. The presence of features, whose distribution is regionally and/or locally specific, which contribute to its aesthetic qualities and to its ecological integrity.

7 INDICATORS TO MEASURE THE EXTENT AND QUALITY OF HNV FARMLAND AND FORESTS

Indicators to Measure Changes to the Extent of HNV Farmland and Forestry

Having identified and characterised their HNV farming and forestry, and TAL, a selection of indicators may be applied with the aim of determining what is HNV farmland and forestry in order to measure:

- Changes in the extent of HNV farmland and forests.

- Changes in the nature values associated with HNV farmland and forests to provide an indication of changes in the quality of the HNV resource.

In the case of HNV farming, it is not feasible to use indicators common to all agricultural land uses and so indicators have been developed which are specific to different categories of land use, including semi-natural forage land, arable and improved grassland, and permanent cropland. In order to determine whether a specific area of farmland is HNV or not, indicators would be applied which capture the three criteria characterising HNV farming: intensity of land use; presence of semi-natural features; and the presence of a land use mosaic.

The minimum number of indicators applied would need to be one indicator relating to the intensity of land use, and one indicator relating to the presence of semi-natural features. Indicators relating to the presence of a land use mosaic will be applied in addition to the other two under appropriate conditions. The full list of indicators is provided in chapter six of the report which discusses the way in which they may be applied along with potential data sources.

Indicators to Measure Changes in the Quality of HNV Farmland and Forestry

Changes in the ecological condition or quality of HNV farmland and HNV forestry can be assessed using a combination of biodiversity indicators to provide broad contextual trends at the regional or national scales. Changes in ecological quality can either be captured in terms of trends in the abundance of selected species of conservation concern.

Species of conservation concern associated with HNV farming systems and forests would need to be identified, including plant species; vertebrates, including birds; invertebrates, including butterflies; and fungi, depending on data availability. The species selected may be of European, national and regional conservation concern, although the choice should not be limited to the most threatened or emblematic species, but rather to suites of plant and animal species that are considered to be indicators of habitat quality. Changes in the abundance of these species over time provide a measure of the nature value of HNV farmland and forests within a Member State. Existing systems for measuring the abundance of populations at the national level, or through regional case studies, could be utilised or new systems established.

8 ASSESSING THE IMPACT OF RURAL DEVELOPMENT PROGRAMMES

Over the period of the 2007 – 2013 rural development programmes, indicators measuring the extent and quality of the HNV resource could reveal various changes in state. The area of HNV farmland and forests could increase, remain stable, or decline which would be coupled with changes to the quality of the resource. In some cases, this change in state would indicate an improvement, in others a deterioration, and in still others, conflicting trends may emerge. The aggregation and weighting of trends at the national level must, however, be conducted with sensitivity as trends may vary significantly between regions, farming systems and forests, for example. Judgements on the part of programme evaluators will need to be made in this regard.

The indicators reflect changes in the environment arising from a variety of driving forces and decisions by different actors. The extent to which the changes observed can be attributable to rural development programmes will need to be inferred by programme evaluators on the basis of evidence available to them.