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AGRICULTURE & INNOVATION



EIP-AGRI Focus Group High Nature Value (HNV) farming profitability

STARTING PAPER - prepared for the first Focus Group meeting in Madrid, Spain (12-13 June 2014)

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1. Introduction

Welcome to the starting paper supporting the first meeting of the EIP-AGRI Focus Group on “High Nature Value (HNV) farming profitability – how to make HNV farming more profitable without losing the HNV characteristics?”

The purpose of this starting paper is to:

1. Establish a common understanding about the purpose and scope of the Focus Group;
2. Identify some preliminary points of discussion for the first meeting of the Focus Group meeting, including:
 - function of HNV farmland within the “farming business”
 - the basic concept of profitable HNV farming
 - potential pathways / strategies for more profitable HNV farming
 - ‘fail factors’ that may limit / constrain more profitable HNV farming
 - examples of innovative actions for more profitable HNV farming;
3. Begin drawing together some relevant thoughts / materials as a preliminary basis for the Focus Group Final Report.

1.1 Purpose and scope of the Focus Group

Agricultural production systems that provide environmental public goods, such as High Nature Value (HNV) farming, are in decline in most EU Member States. The principal drivers of this decline are various socio-economic forces that originate from both within the agricultural sector and the wider rural economy. These pressures are likely to intensify and it is generally acknowledged that wider society should offer some support to these farming systems in recognition i) of the environmental services they are providing and ii) the fact that they are not currently rewarded by the market.

During the last 10-15 years considerable effort has especially been put into discussing and resolving a range of policy issues related to building an effective public support system for HNV farming across the EU. Significant progress has been made, although more policy-related work needs to be done. But at the same time, these farming systems are not static. They are evolving and many are looking to “modernise” and adapt to the demands and pressures of the 21st century. There is an expectation / hope for HNV farming to generate more realistic household incomes, to offer better returns for family labour and to be economically attractive for younger generations.

This will not be easy, especially in poorer regions with high unemployment and ageing farming populations where other economic opportunities are pulling people off the land and out of rural communities into urban areas or work abroad. More innovative approaches for strengthening the economic and social viability of HNV farming are therefore needed to overcome these negative trends. However, some significant “knowledge gaps” exist in our understanding of the agronomic and socio-economic dynamics of HNV farming. Compared to more modern, high intensity farming systems relatively little research has, for example, been undertaken on improving the performance of the low intensity farming systems that prevail in HNV farming - and certainly very little attention has been given to the fostering of innovation as a process to enhance their productivity, profitability and sustainability.

Another extremely interesting (and closely related) issue about which very little is known or understood is the motivation and behaviour of HNV farmers – why do they keep doing what they do?

This Focus Group is about exploring the potential for making effective use of a new policy instrument – the [European Innovation Partnership for Agricultural Productivity and Sustainability \(EIP-AGRI\)](#) – for **building a bridge between farmers and researchers in order to stimulate innovation and seek practical down-to-earth solutions** that work both to:

- a) improve the economic viability of HNV farming and therefore stop / reverse the decline in HNV farming systems and HNV farmland, and;
- b) secure long-term biodiversity benefits by not compromising the HNV characteristics of these farming systems whilst in the process of improving their economic viability.

Or put more simply, how can farmers and researchers work together to make HNV farming more profitable without losing the HNV characteristics?

The specific objectives of the Focus Group are to:

- Clarify (using examples) the **main socio-economic threats** to the continued existence of HNV farming and the main opportunities to improve profitability;
- Take stock of **existing 'state-of-the-art' projects / good practice** and **relevant research** regarding the improved profitability of HNV farming – with particular emphasis upon those that address the need to balance increased economic viability with the maintenance of natural values;
- Explore the **role of innovation and knowledge transfer** in supporting the improved profitability of HNV farming, including identification of some specific **fail factors** that limit the fostering and uptake of innovation amongst HNV farmers;
- Propose **directions for future research work** to address the needs of profitable and sustainable HNV farming;
- Propose **priorities for relevant innovative actions**, including practical ideas for potential Operational Groups¹ to test and disseminate solutions and opportunities.

There are various definitions of innovation which may provide useful reference for discussion in the Focus Group, but the EIP-AGRI follows some broad and simple concepts whereby innovation:

- is considered simply as "*an idea put into practice with success*"; and;
- may be technological, non-technological, or social, and may be based on new or traditional practices. This might include, for example, the use of specific machinery, alternative crops and livestock species, developing special products, small-scale food processing facilities, innovative marketing, new business models, diversification into non-agricultural activities, etc.

Overall, the members of the Focus Group are expected to favour / encourage out-of-the-box thinking in which new solutions, inter-linkages and approaches can flourish. This may include tacit knowledge, rediscovering and exchanging information on old and traditional solutions while at the same time developing innovative ways of keeping these valuable traditional systems alive.

And finally, it must be stressed that it is **not** the purpose of this Focus Group to contribute to further work on the characterisation, mapping or monitoring of HNV farming systems, nor to inform on-going discussions about CAP reform and the design of EU or national / regional policy support mechanisms for HNV farming.

¹ For more information on EIP-AGRI Operational Groups see the Factsheet here: http://ec.europa.eu/agriculture/eip/pdf/fact-sheet-operational-groups_en.pdf

2. What is HNV farming?

High Nature Value (HNV) farming is a relatively new concept that has developed since the early 1990s to describe those farming systems in Europe which are of greatest biodiversity value. The concept brings an alternative and complementary approach to conventional nature conservation. Instead of focusing only upon the maintenance of rare or endangered species and habitats on protected sites, the concept recognises that the conservation of biodiversity in the EU depends to a great extent upon the continuation of specific farming practices across much wider areas of the countryside.

HNV farming has created and maintains habitats that are amongst the most important for biodiversity in Europe. These include a wide range of semi-natural habitats (typically with high species diversity and unique species communities), as well as habitats that are less natural but nevertheless provide important refuge for a significant number of farmland species. Many of these habitats and species are scarce and/or declining and, as a result, are the focus of conservation measures under the EU Birds and Habitats Directives. Unfortunately, various economic and social factors have caused, and continue to threaten, the abandonment (and in some cases intensification) of large areas of HNV farmland, with irreversible loss of the associated habitats and species.

The diagram here presents the simple relationship between 3 terms which are commonly used (including in this paper), but which are not interchangeable:

- HNV farming,
- HNV farming systems, and
- HNV farmland.

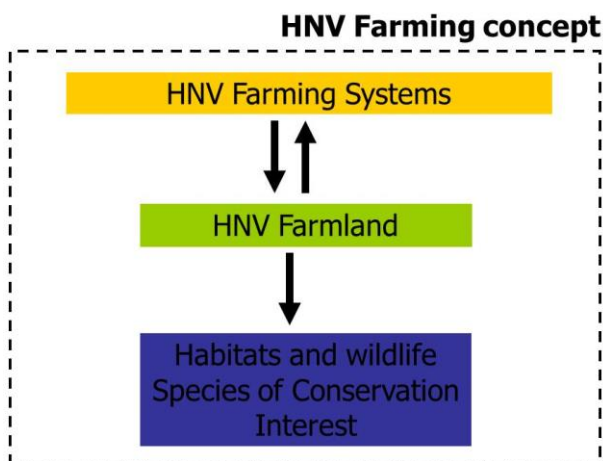
HNV Farming – this is the ‘umbrella’ concept that links HNV farming systems, HNV farmland and nature conservation issues together. HNV farming is commonly defined² as occurring where:

- agriculture is the dominant land use;
- agriculture supports (or is associated with) a high diversity of wildlife species and habitats and/or the presence of species of European/national/regional conservation concern, and;
- the conservation of these wildlife habitats and species is dependent upon the continuation of specific agricultural practices.

HNV Farming Systems – these are the farming systems in which farmland of high nature value has both been created and continues to be maintained.

HNV farming systems vary greatly in different Member States reflecting the very different farming and environmental conditions across the EU. However, the majority of HNV farming systems are characterised by long-established, predominantly low-intensity and often complex production systems that commonly retain a certain amount of semi-natural vegetation (e.g. unimproved grasslands) and apply very few fertilizers and pesticides; use mainly labour intensive practices, and; keep traditional livestock breeds and crop types that are highly adapted to local soils, vegetation and climate.

The reason that these farming systems are still in place is because they are located in the more marginal areas of Europe where i) agricultural productivity is constrained by physical factors such as poor soils, steep slopes, high altitude, low rainfall etc, and/or; ii) socio-economic conditions have



² Based upon a definition first developed by Andersen *et al.* (2003).

prevented or in some cases (such Bulgaria and Romania) reversed the intensification process in recent years.

Four broad types of HNV farming system have been identified³:

- *Livestock dominated production systems* – by far the most common type of HNV farming system and encompassing many different forms of low intensity livestock production systems using semi-natural vegetation for grazing and hay-making
- *Arable dominated production systems* – relatively rare at EU level, but extensive dryland cereal cropping systems with fallow are still found on a large-scale in Spain and Portugal
- *Permanent crop dominated production systems* – traditional orchards of fruits and nuts, plus traditional vineyards and low intensity olive and carob groves, are very significant in some Member States, particularly in the Mediterranean region and south-east Europe
- *Mixed production systems and mosaic HNV landscapes* – these are regionally important in many Member States, but uncommon in some others

Annex 1 contains examples of key farming practices (with both positive and negative impacts) for each of these different HNV farming systems.

HNV Farmland – this is the main component of the HNV farming system which is of interest for nature conservation since it encompasses the habitats where the abundance and diversity of wildlife species is actually found. In some cases HNV farmland dominates the agricultural landscape – in other cases it survives as smaller fragments within more intensively farmed or forested landscapes.

The extent and quality of HNV farmland habitats is greatly influenced by the overall functioning of the HNV farming system and the day-to-day management decisions taken by farmers. Changes in the HNV farming system (such as changing the land use, intensification of production or abandonment of land) will impact upon the biodiversity value of the HNV farmland, including the risk of significant biodiversity loss.

Three types⁴ of HNV farmland are commonly identified⁴:

- Type 1 Farmland with a high proportion of semi-natural vegetation, such as species-rich grassland.
- Type 2 Farmland with a mosaic of low intensity agriculture and semi-natural and structural elements, such as field margins, hedgerows, stone walls, patches of woodland or scrub, small rivers etc.
- Type 3 Farmland (including intensively managed crops and grassland) supporting rare species or a high proportion of European or World populations.

Of course, the concept of **HNV farming does not end with HNV farmland and HNV farming systems**. Keeping HNV farmers on the land delivering biodiversity benefits that are appreciated and valued involves recognising that **HNV farmers and their families are part of a wider community that has needs for various services and infra-structure that other sectors of society take for granted**. As a minimum, this implies an integrated approach to rural development which not only strengthens and diversifies the opportunity for a safe and secure living from HNV farming, but also improves the quality of life for the HNV farmers and their families.

³ Usefully summarised by Keenleyside *et al.* (2014)

⁴ This typology was first proposed by Anderson *et al.* (2003), with further discussion and modification by EEA/UNEP (2004) and Paracchini *et al.* (2008)

3. What is “more profitable” HNV farming?

3.1 Function of HNV farmland within the “farming business”

In order to begin addressing the question of how to make HNV farming more profitable, it is important to first consider the function of HNV farmland within the “farming business” – where the “farming business” is defined as the economic activity undertaken on a single coherent and identifiable unit of farmland whether or not this land is currently in productive use, in a contiguous blocks, under the same ownership or available throughout the year.

This approach draws upon the work⁵ undertaken recently by the Institute of European Environmental Policy on behalf of DG Environment. The authors of the report describe three different relationships between HNV farmland and the whole area of land managed by a farming business. They stress that these relationships should be seen as points of a continuum along which an infinite variety of relationships exist.

The three points on this continuum are described as:

1. **Whole farm HNV system** - farms where all land forming the “farming business” is HNV farmland and the whole “farming business” is managed as a low-intensity HNV farming system. Farms in this category range in size from very small to very large and are predominantly livestock based with some cropping (vegetables, fodder, arable and permanent crops). Many of these farms have survived because they occupy marginal agricultural land of low productive capacity where intensification is not cost-effective. However, they remain highly vulnerable because they have few options to adjust their production systems

For example: **Traditional pastoralism in Romania** – mainly sheep and cattle rearing on subsistence, semi-subsistence and small family farms. Commonly involves two closely inter-connected farming systems – i) extensively-managed mixed small-holdings with small parcels of private meadow and cultivated land, plus a few animals, and ii) very low intensity summer grazing of semi-natural pastures (often in the mountains) with communal herds / flocks gathered by local shepherds from the small-holdings

Low intensity silvo-pastoral grazing systems in Spain – mixed livestock production with cattle, sheep, goats and pigs on semi-natural pasture under an open tree canopy (*dehesa*), usually of evergreen oaks. Generally large holdings in private ownership. Some local transhumance to summer grazing in mountains

2. **Partial HNV system** - farms where the “farming business” utilises some low-intensity HNV (often semi-natural forage areas) alongside more intensively-managed and/or improved agricultural land. For example, the two types of farmland might be used for different types of livestock (e.g. sheep and dairy cows) or at different times of the year (e.g. summer grazing on semi-natural upland pastures)

For example: **Upland livestock production in the UK** – mainly sheep and suckler beef production on farms combining improved / semi-improved grasslands (cut for silage) in the lowlands with large areas of semi-natural upland vegetation (heathland, permanent grassland and blanket bog) used for summer grazing

⁵ See Keenleyside, C. *et al.* (2014).

Upland mixed farms in the Czech Republic – large mixed farms with intensive arable production on parcels of better land, plus extensive beef and sheep production on upland semi-natural grasslands

3. **Remnant HNV system** - farms where there are some remaining parcels of HNV farmland, but its land management is irrelevant to the main “farm business” which is based on intensive agricultural production

For example: **Wooded pastures and meadows in Estonia** – small patches of semi-natural habitat which are no longer relevant to commercial livestock production

Semi-natural grasslands on arable farms with no livestock in Finland – commonly mown under agri-environment agreements, but otherwise ungrazed (unless by cattle belonging to other farmers)

These distinctions are important in the context of this Focus Group since **the overall profitability of the so-called HNV farm is not only influenced by the intrinsic productivity of HNV farmland, but also by the proportion of HNV farmland on the farm.**

On the one hand, there are farming businesses which run entirely as low-intensity HNV farming systems (often as part of a landscape of similar farms) with all production (and maybe even some income) coming from the HNV farmland. Whereas at the other extreme there are farms with only small remnants of HNV farmland which make an insignificant contribution to the main farm business of intensive crop or livestock production on non-HNV farmland.

In between are many partial HNV farming systems where HNV land is a functional part of a bigger production system, but it is actually the intensive agricultural production on non-HNV farmland that provides the great majority of farm business income.

3.2 The basic concept of profitable farming

The word profit arouses strong emotions and is linked to much potential misunderstanding so it is important to establish some basic understanding of the concept of farm profitability before going further with discussions in the Focus Group.

There is no strict definition in the English language of the word “profitable”. Most dictionaries refer both to the ability or capacity to 1) “generate a financial gain / economic return” and 2) “produce an advantage or good benefit” (in other words, some form of utility).

Both definitions have relevance in the diverse context of HNV farming in the EU. There are some relatively prosperous HNV farmers whose farming activities are generating financial gain and there are very poor HNV farmers whose farming activities generate no financial gain, but provide important utilities such as food production for home consumption (which does of course also have a significant economic value to the household⁶). And there are many other HNV farmers somewhere in between these two extremes!

For the purpose of this Focus Group it would be easy to make the following working assumptions:

- That the terms “profit”, “profitable” and “profitability” are used primarily in connection with generating financial gain / economic return from the farm;

⁶ According to Davidova and Bailey (2014), “after measuring the contribution of unsold output, valued at market prices, to total household incomes, it appears that subsistence production has the potential to lift people out of the risk of poverty”

- That the most common measure of farm profitability is “net farm income (NFI)” which is derived from a detailed analysis of the farm business in the form of i) the gross margins (financial outputs less variable costs) for each individual enterprise on the farm and ii) the fixed costs that cannot be allocated to individual enterprises.
- That in accordance with classical agricultural economics⁷, all farmers act in such a way as to maximise their profits and will therefore use increased inputs etc. to increase production to the point that the “marginal increase in the cost of production becomes greater than the marginal increase in returns”.

However, in reality:

1. It is debatable how many farmers, especially HNV farmers, pursue maximum financial gain. It is probably more reasonable to assume that the motivation of most farmers (including HNV farmers) is to increase the profitability of their farming activities to the point that they generate sufficient economic return to i) cover all production costs, including the costs of borrowing capital and ensuring a reasonable return for the labour of the farmer and his family; ii) allow the necessary on-going investment to maintain the farm’s productive assets, and; iii) generate some surplus for additional investment to increase long-term productivity of the farm (e.g. expansion and modernisation).
2. Calculations of enterprise gross margin and overall net farm income are clearly very important tools and will undoubtedly be used / referred by the Focus Group. However, the issue of “advantage or good benefit” (utility) as a form of profit cannot be overlooked, especially in the context of the millions of subsistence and semi-subsistence farms that persist in central and south-eastern Europe. The majority of these are clearly **not** profitable from a farm business perspective, but are a way of living / surviving that is deeply rooted in a number of factors.

In many cases, family small-holdings continue to provide the main source of income for many rural households and act as a ‘social safety-net’ by contributing to family food security in times of economic shock or uncertainty. But there are concerns that this role of safety-net also condemns such small-scale farming to stagnation, low performance and limited profitability and risks perpetuating the growth of rural poverty in some areas. Such concerns are clearly valid, but on the other hand, it is also observed that subsistence / semi-subsistence farming is actually chosen by many people due to a preference for the lifestyle, consumption of own food etc. - this is an important behavioural pattern amongst small farmers that remains unexplored and poorly understood⁸.

3. Farmers are not homogenous, but they have a huge range of different motivations, including towards the continued management of HNV farmland. For example, the Land Life project in Austria⁹ showed the how varied the attitudes of farmers are, and how their mentality affects how land is used. The study identified 8 different types of farmer in Austria, of which they considered 4 were particularly relevant for HNV farmland:

The Traditionalist – older and part-time farmers that continue to practice agriculture in order to keep their families traditions alive. Their way of working often involves considerable effort for minimal profit.

⁷ One of the classic economics textbooks for agricultural students is Ritson (1977)

⁸ This interesting perspective on the motivation for subsistence farming has been raised by several authors in recent years, including Davidova (2011)

⁹ See Wrбка *et al.* (2002) cited in Chapter 4.2 of Oppermann *et al.* (2012)

The Idealist – small-scale farms where ethical or aesthetic considerations (e.g. the importance of “healthy food and farming”) influence management decisions. Profits are limited and farming families live a modest life by choice.

The Subsidy Optimiser – large farms under extensive management with majority of income derived from public funds. Farm management focuses on minimising costs whilst fulfilling the conditions of relevant support programmes.

The Innovator – has very close relationship with his / her land and associates with the culture of farming, but views agriculture primarily as an income source and is open to new developments / ideas to increase income whilst preserving the quality of their own living environment. Production of quality food is an essential part of their identity and commonly involved with direct selling, agri-tourism, etc.

3.3 Potential pathways / strategies for more profitable HNV farming

There is no single pathway towards more profitable HNV farming - HNV farmers are very diverse operating in a broad range of different contexts and facing a variety of specific constraints.

For example, consider a low-intensity HNV livestock system in the north-west of Scotland where farming conditions are particularly extreme and difficult, distances to market are long and local markets are extremely small¹⁰. Productivity and profitability under these circumstances are exceptionally low and many farms – especially ‘whole HNV farm systems’ – operate at a loss with significantly more than 100% of farm income derived from CAP support payments. In the short-term these businesses are effectively maintained by many years of tacit acceptance of hard work and low incomes, combined with some cross-subsidy from non-farm income (e.g. partners job, state pension or other social payments) which makes them extremely vulnerable to disruption, especially when the business is due to be handed from one generation to the next.

In this situation it has been suggested that farmers have two basic options for improving their farm’s financial situation:

1. Reduce the scale of the livestock enterprise and therefore i) reduce the loss and ii) minimise exposure to risk since small market changes in the sale price of animals or the cost of inputs (feed) can have a large effect upon the farm’s business performance.
2. Stop livestock farming altogether, but continue the minimum level of land management required to claim CAP support, thereby leaving the farmer free to search for alternative sources of income.

Neither option is particularly innovative and unlikely to be optimal for biodiversity, but they are both reasonable decisions (assuming on-going CAP support remains available) and considerably more acceptable than simply abandoning the land...or selling it for planting with fast-growing conifers!

But are there other options? Are there out-of-the-box solutions for the extremes of HNV farming in the wild isolation of the Scottish Highlands and Islands?

The climate and productive capacity in Southern Transylvania, Romania, is significantly better than north-west Scotland. Low-intensity mixed (livestock and cropping) HNV systems dominate the hilly and mountainous landscape and the socio-economic context is very different. There is an abundance of rural communities populated by thousands of small-scale subsistence and semi-subsistence farming households with many potential linkages to local and regional markets available to them if they have the means / capacity to exploit them.

¹⁰ This example is nicely elaborated in Keenleyside *et al.* (2014)

Two broad pathways of development have been suggested¹¹ for farms such as these:

1. Transformation into small family / commercial farms via greater market integration with increased efficiency of production (e.g. new technologies) and more farm output sales. This is the main pathway favoured by EU rural development policy.
2. Continuation of small-scale production through i) diversification with on/off-farm alternative economic activities, including adding value to local products etc; ii) increased levels of part-time farming and non-agricultural income, iii) continued succession as future family generations simply take over the holdings due to necessity or choice, and slowly adapt / evolve their lifestyles and technologies.

Both pathways could clearly benefit from a range of innovative actions supporting the commercialisation of small-scale production and/or the diversification of household income. This could include a range of innovations related to institutional support, advisory services, new technologies, information systems, micro-credit and other financial facilities – as well the facilitation of economies of scale through co-operation in inputs and outputs etc.

But will these farms still deliver the same public benefits if they are no longer small-scale or subsistence? How large can individual farms become before unacceptable losses occur in the diversity and associated nature conservation value? For example, will the commercialisation and/or diversification of subsistence small-holdings continue to deliver the same "*idiosyncratic management*" of farmland¹² that is so highly valued for biodiversity conservation in southern Transylvania? Will simple technological innovations such as mechanical mowing for hay-making have a positive or negative impact upon grassland biodiversity?

3.4 'Fail factors' that may limit / constrain pathways to more profitable HNV farming

HNV farming systems are found in a variety of different agronomic, economic, social and environmental contexts, but (as discussed) are generally concentrated in the more marginal areas of rural Europe where i) baseline agricultural productivity is most constrained by factors such as poor soils, steep slopes, high altitude, low rainfall, rocky outcrops, etc. and ii) where there is least potential to intensify production, increase outputs and produce a better economic return.

But these natural constraints upon productivity and the potential for intensification are not the only factors limiting the profitability of HNV farming. In some cases, natural conditions are less constraining and the physical potential exists to intensify production and increase economic returns. However, a number of other factors may limit / constrain the capacity of local farmers to respond to take advantage of this potential¹³. In the context of this Focus Group these factors are referred to as 'fail factors' that limit the possibilities for innovative action and therefore need to be overcome.

Typical constraints on making more profitable use of HNV farmland are:

- **Historical** – for example, farmers may be reluctant to invest in improving the productivity of land if there are long-standing rights for common access to land (notably for grazing)

¹¹ See the recent article by Davidova (2014) and the associated list of further reading

¹² Huband (2008) eloquently explains the biodiversity benefits arising from the subtle day-to-day differences in the low-intensity management (including mowing date, applications rates of manure and timing and intensity of early/late season grazing) of semi-natural grasslands by the huge numbers of small-scale subsistence farmers found in southern Transylvania

¹³ See Jones and Poux (2012) for some useful discussion of these factors

- **Economic** - farmers that are inherently poor do not have access to the necessary financial resources to invest in improving the productivity of their farming systems
- **Geographical** - farming communities that are geographically remote commonly suffer from lack of information and limited basic rural services
- **Social** – various social factors can impact upon the innovation potential of rural communities, including low educational standards, lack of social, poor local governance etc.
- **Policy** – where there is a lack of access to available support measures (e.g. ineligibility due to the economic size of the farm)
- **Cultural** – for example, long-standing resistance to co-operation
- **Demographic** – where the farming population is aging and there is an increasing predominance of pensioners
- **Regulatory** – inappropriate interpretation and implementation of food hygiene and safety legislation can be a major constraint upon the development of new food products and processes
- **Structural** - fragmentation of agricultural holdings, as well as poor infrastructure that limits access to local markets
- **Market-related** - loss of traditional markets due to cheap imports and tighter regulations on informal sale of smallholder produce
- **Labour supply** - the increasing difficulty of finding and hiring skilled labour determines the future of many traditional livestock production systems
- **Knowledge** – lack of training and advisory support

These and other 'fail factors' that may limit the fostering and uptake of innovation amongst HNV farmers will be examined by the Focus Group.

4. Sources of inspiration for innovative actions

We anticipate that there are numerous state-of-the-art' examples of projects, good practice and relevant research regarding innovations to improve the profitability of HNV farming, and taking stock of these will be an important part of the Focus Group's work.

Two existing sources of inspiration that have been showcased in recent [regional workshops](#) organised by DG AGRI / the EIP-AGRI Service Point are the **BurrenLIFE project in Ireland** and the work of **Fundatia ADEPT in Romania**. Both examples contain project activities / approaches which are similar to the potential structure and functioning of the EIP-AGRI Operational Groups that are eligible under 2014-2020 rural development policy. In accordance with Article 36 of the new EAFRD Regulation 1305/2013, Operational Groups bring multiple actors together to pursue "the development of new products, practices, processes and technologies in the agriculture, food and forestry sectors". Further possible areas of action include joint work processes, short supply chains, joint climate change actions, collective environmental projects etc.

4.1 BurrenLIFE Project, Ireland



The Burren is an area of limestone karst of over 72,000 ha located on the Atlantic coast of mid-west Ireland. It is an outstanding HNV farmed landscape shaped by a unique combination of natural forces and 6,000 years of agriculture to create a place of great beauty and historical / cultural significance, as well as one of Ireland's most important regions for flora and fauna. There are three main SACs

(Special Areas for Conservation) in the region covering an area of 30,400 ha and incorporating 16 habitat types listed in Annex 1 of the EU Habitats Directive.

The diversity and range of plant communities in the SACs are dependent upon the maintenance of extensive farming practices, but in recent years these farming practices have changed for a number of reasons (an easy-to-read description of farming and nature conservation in the Burren can be found [here](#)). The BurrenLIFE project was therefore initiated in 2004 with the objective of developing a new model for sustainable agriculture in the region through which farmers could i) earn a decent living from the land and ii) continue their long-standing role as managers of the natural environment.

The first (pilot) phase of the project (2005-2009) was 75% financed by the EU LIFE-Nature programme and built a strong partnership between 20 local (pilot) farmers, researchers and nature conservation organisations. Numerous [simple conservation measures](#) were developed based on traditional management practices that are beneficial to both the habitats and farmers. All of the locally-developed management practices were tried and tested by the 20 pilot farmers, accurately costed and then disseminated more widely via a series of best practice guides on [grazing](#), [feeding](#) (including the BurrenLIFE concentrate feeding system), [scrub control](#) and [farming for conservation](#).

The second phase of the project (2010-2014) was financed under Pillar 1 of the CAP¹⁴ and aimed to build on the lessons of the pilot project. An enlarged scheme ([Burren Farming for Conservation](#)) attracted 350 applicants in May 2010 and by November 2012 had signed-up a total of 158 farmers.

4.2 Fundatia ADEPT Transilvania, Romania



[Fundatia ADEPT](#) has been working for 10 years to protect the nature-rich, farmed landscapes of Transylvania, and to support the traditional farming communities who have created them over centuries and who maintain them today.

ADEPT's most important activities are in the Târnava Mare of southern Transylvania - a lowland area of high biodiversity, with 85,000 ha farmed by 5,000 families in 24 small-scale farming communities. The extensive mixed farming carried out in this region for over 800 years has created one of Europe's finest remaining lowland HNV farmed landscapes. Agriculture in the region remains largely traditional with individual households having a mixture of strips of arable land in different areas that are good for various crops, combined with larger parcels (typically 5-10 ha) of hay meadows.

Much of the area is designated under the Habitats Directive, including about 8% of the area as dry grassland on limestone or other calcareous substrates with important orchid sites (6210) and 4% of the area as Sub-Pannonian steppe grasslands (6240). Improvement in the conservation status of these habitats was targeted by a [LIFE+ project](#) in 2010-2013 involving a comprehensive partnership of local farmers, researchers, NGOs, private sector companies and governmental institutions.

¹⁴ Using Article 68(1)(a)(i) of EU Regulation No. 73/2009 which amongst other things allows Member States to pay for specific types of farming which are important for the environment

Working with different combinations of partners, the project implemented a number of important innovations:

1. Developing an innovative database and 3D mapping system to predict the presence of important grassland habitats – especially those on slopes and in most danger of under-use / abandonment and scrub invasion;
2. Development of an innovative and modern walk-behind mechanical mower capable of mowing hay and clearing scrub on steep slopes – thereby helping maintain vulnerable grassland habitats under traditional management and in good conservation status;
3. Development of several new agri-environment measures for the Târnava Mare area which when implemented at national level actually made a further 200,000 ha of damp meadow and 150,000 ha of mown/grazed orchards eligible for support;
4. Linking with 8 schools in the area to raise awareness of the local landscape and wildlife. Nature classes were delivered to over 280 children per year and teachers were left with teaching materials – including slide presentations, booklets for identification – and the skills to carry out future monitoring of wildlife in their local grasslands.
5. Integration of the all above innovations with the broader on-going activities of Fundatia ADEPT that are focused upon increasing the socio-economic viability of small-scale farms in the Târnava Mare area. These activities include:
 - formation of “Farmer Information Groups” for channelling information on a wide range of topics to farmers (including an SMS information system on mobile phones)
 - training of individual farmers and farmer associations to build their capacity and confidence to carry out individual and joint actions
 - innovative processing facilities (e.g. solar drying machines) for micro-processors of local artisan products
 - new marketing initiatives linking traditional products with modern branding and packaging
 - imaginative diversification activities, such as new mountain bike trails that link networks of local guesthouses and attract visitors / income to the area.

5. Conclusions

HNV farming is based on traditional principles with a wealth of (often underrated) local know-how and good practices. There is huge scope for re-interpreting, enhancing and complementing these principles and practices with contemporary knowledge and new perspectives. Linking HNV farmers with applied researchers (and appropriate funding) to define “real-life” research problems and find practical solutions could lead the way in blend traditional farming practices with novel technologies and approaches to develop new and cost-effective ways to combine productive agriculture with nature conservation objectives.

This Focus Group aims to take an important step forward in promoting this approach. There will be clearly some important issues to discuss and resolve during the first meeting, including a common understanding of the scope of the term “more profitable HNV farming”. But we look forward to the main body of the meeting focussing upon three key issues:

- What are the main pathways to improving the economic viability of HNV farming?
- What are the ‘fail factors’ that may limit / constrain these pathways?
- How can we overcome these ‘fail factors’ through more innovative actions / approaches without losing the HNV characteristics of the farming systems?

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Annex 1: Examples of farming practices found in different HNV farming systems

The following table is reproduced with from Keenleyside *et al.* (2014).

Regular, annual management practices on HNV farmland	Less frequent maintenance / restoration management on HNV farmland	Harmful practices which threaten HNV farmland
Livestock dominated production systems		
<ul style="list-style-type: none"> • grazing with (mix of) stock types including local breeds appropriate to maintain habitat • seasonal grazing (dates vary) • grazing intensity appropriate to habitat, maintaining structural and floristic diversity, including shrubs and trees where present • shepherding on open grazing, and folding where appropriate • encourage regeneration of characteristic native tree and shrub species <p><i>Some grassland types only:</i></p> <ul style="list-style-type: none"> • fertilisers and lime not used or only in limited quantities • meadows mown after flowering period, normally one cut only, different parcels on different dates • manual mowing 	<ul style="list-style-type: none"> • removal of invasive species • control of scrub if required to restore grazing to recently abandoned land • restoration or maintenance of infrastructure for livestock management (walls, fences, drinking water, drove roads) 	<ul style="list-style-type: none"> • large scale temporary grasslands • new drainage • increased fertiliser use • use of plant-protection products
Arable dominated production systems		
<ul style="list-style-type: none"> • low-intensity management of dryland crops • fertiliser limited to animal manure on farm • fallow with spontaneous vegetation • diversity of crops in small plots • spring sowing of crops • grazing after harvest • mechanical weed control 	<ul style="list-style-type: none"> • maintenance and restoration of traditional irrigation systems (eg water meadows, gravity fed mountain systems) 	<ul style="list-style-type: none"> • increased fertiliser use • reduction of fallow area • use of plant-protection products • new irrigation

Regular, annual management practices on HNV farmland	Less frequent maintenance / restoration management on HNV farmland	Harmful practices which threaten HNV farmland
Permanent crop dominated production systems		
<ul style="list-style-type: none"> • low-intensity small-scale production • crops grown on terraces • mixed crops, local varieties, old trees • grazed semi-natural vegetation under and between trees • low input of manufactured fertilisers and biocides 	<ul style="list-style-type: none"> • maintenance of terraces and walls • appropriate pruning of trees to maintain longevity • replacements using traditional varieties 	<ul style="list-style-type: none"> • intensive understory control through repeated tillage or herbicides • intensive use of plant-protection products • irrigation
Mixed production systems and mosaic HNV landscapes		
<p>Above practices, plus:</p> <ul style="list-style-type: none"> • low intensity environmentally sensitive maintenance techniques (cutting reeds, hedges, cleaning ditches etc) • protection from harmful browsing and trampling, and from damage by machinery 	<p>Above practices, plus:</p> <ul style="list-style-type: none"> • regular maintenance of stone walls, terraces and other built structures, using appropriate local techniques and materials • pruning and replanting woody features using local techniques/species 	<p>Above practices, plus:</p> <ul style="list-style-type: none"> • removal of field boundaries, • quarrying (for stone walls and buildings) • drainage of ponds, wet areas, water courses