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AGRICULTURE & INNOVATION

EIP-AGRI Focus Group

Forest Practices & Climate Change

MINIPAPER 2: Implementing adaptation strategies through economic incentives
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1. INTRODUCTION-MOTIVATION

What's the minipaper about?

This mini paper is one in a series of mini papers produced by the EIP-AGRI Focus Group 24 on *New forest practices and tools for adaptation and mitigation of climate change*. The scope of the focus group is elaborated in a starting paper (Lindner, M. 2017). *Implementing adaptation strategies through economic incentives* was identified as one of the key topics at the first meeting of the Focus Group held in Ljubljana, Slovenia, 20-21 June 2017.

The aim of this mini paper is on the one hand to provide an overview on existing economic incentives for implementing adaptation strategies and on the other how to develop and improve efficient incentives that promote the engagement of forest owners to forest adaptation practices.

Why is the minipaper needed?

Climate change represents a real challenge to European forests. Increased droughts and water stress, increased fire risk leading to more frequent and more intense fires and possibly an increased exposure to pests and diseases, as well as low productivity and loss of incomes, are some examples of the problems that we are already facing.

On the other hand there was a strong reduction of population in rural areas, as well as a significant change in their behaviour and social needs. This has brought about considerable changes in forest practices and use, and in people's attitudes and values toward forests. This is also a major societal challenge that must be taken into consideration in any adaptation strategy.

In many cases adaptation practices, or management actions that overlap climate change mitigation and climate change adaptation, will need economic incentives, especially in case of low economic returns or low added-value from forestry for the forest owner to carry out adaptive management or when you need adaptive management to protect ecosystems services and benefits ¹.

At the EU level there are a wide range of economic incentives existing that can support forest adaptation to climate change. Under the European Structural and Investment Funds, that includes the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), and the European Agricultural Fund for Rural Development (EAFRD) there are several opportunities. For example, the EAFRD funded Common Agricultural Policy (CAP) includes measures to support climate change mitigation and adaptation actions in forestry, through forest investments, forest-environment-climate support measures or knowledge transfer and information actions. However more has to be done to help forest owners to adapt to climate change.

In order to address the pressing challenges of climate change it is essential to ensure forest adaptation strategies through forest climate smart solutions that take into consideration the adequate economic incentives and the forest owners understanding and engagement towards adaptation.

Main issues:

- climate change adaptation options can affect forest economics and need adequate economic incentives (forest climate finance) to ensure the forest owners understanding and engagement towards adaptation
- identify the current economic incentives (forest climate finance), their problems, limitations and opportunities
- research gaps regarding the economic costs of climate change and costs and benefits of adaptation

¹ Climate Change in European Forests: How to Adapt. EFI Policy Brief 9, 2013

2. DISSERTATION

Description of key issue(s)

Why are economic incentives (forest climate finance) important to support climate mitigation and adaptation actions in forestry?

In general, climate change will affect the forest conditions (area, health and vitality and biodiversity), allowing increases in growth rates in some areas while endangering the survival of species and forest communities in others. Temperature, availability of water and changes in seasonality may all become limiting factors, depending on geographic area, original climatic conditions, species diversity and human activities. Most commonly, these changes will affect the frequency and intensity of fires and insect pests and diseases, as well as damage done by extreme weather conditions, such as droughts, torrential rains and hurricane winds. Provision of forest ecosystem services and goods will be altered by these changes, posing a number of new challenges to forest managers².

Ensuring climate mitigation and adaptation actions in forestry is dependent on several critical issues that can be structured into five main topics:

Awareness of climate change	<ul style="list-style-type: none"> - Lack or reduced awareness of the need to adapt by decision makers; - Rigidity and social, cultural or financial conflicts and aversion to change (existing or perceived as such); - Believe that there is a lot of time to start deciding on adaptation;
Available information and knowledge	<ul style="list-style-type: none"> - Limited knowledge of the nature and magnitude of current and/or future climate risks and vulnerabilities; - Lack of knowledge and precedents in the implementation of adaptation measures; - Lack of human skills and competencies;
Long term effect/return of the adaptation actions	<ul style="list-style-type: none"> - Decision-making and planning processes with a focus on the short-term; - Lack of ability to accept the apparent uncertainty of long-term change;
Existence of economic returns from forestry	<ul style="list-style-type: none"> - Prohibitive costs of the adaptation measures identified that limits the forest owner economic capacity to action; - Less attractive economic conditions (returns) of the adaptation measures proposed (shifting to a more resilient forest type but less profitable);
Policies and legislation	<ul style="list-style-type: none"> - Absence of policies, regulations, norms or guidelines that encourage the perpetuation of the status quo; - Existence of legal or regulatory restrictions that represent real impediments to the adoption of measures;

The literature review found that many forest managers do not recognize the possible effects that climate change has or may have on forest management, and of those that do, many may have general ideas of how to address actual or expected impacts but do not implement specific activities due to either lack of access to finance or access to knowledge and technical assistance. In spite of this, many forest managers implement strategies that address current threats to forest resources. Since in many cases, climate change impacts will not be new threats,

² Forests and Climate Change Working Paper 10: Forest Management and Climate Change: a literature review, FAO 2012.

but rather intensification of already existing threats, current measures taken may well address climate change effects (e.g. fire management, pest and disease control and management and many SFM practices³).

Economic incentives (forest climate finance) are important to support climate mitigation and adaptation actions in forestry because, in many cases, they will be necessary to ensure the forest owners understanding, engagement and action towards adaptation, surpassing limitations and barriers.

How can they trigger and promote adaptation?

Climate targets can be mainstreamed through Climate Smart Forestry. Sustainable adaptation and mitigation of climate change should be mainstreamed in forest policy and forest management in Europe, with specific attention paid to local circumstances, opportunities and challenges. The climate problem is important and urgent enough to require every sector to make its contribution. No sector can solve the problem on its own, or within a short time frame. Quick fixes should not be expected from any sector. With the right incentives and investments, however, a significant contribution can be expected from EU forests, forestry and the forest-based industries⁴

As such, economic incentives may be necessary to overcome some of these different critical issues (awareness, information and knowledge, long term effect, existence of economic returns from forestry) because they can act as precondition, condition, trigger or enabler on climate mitigation and adaptation actions in forestry. They may also be necessary due to the misalignment between the global climate change adaptation needs (society) and the individual capacity of each forest owner to ensure them (for example, the society is interested in reducing the wildfire risk and the forest owners, in order to address that common and global goal, would need better market price for biomass from thinning promoting active management and risk reduction).

Forest managers may be stimulated to respond to climate change through incentive schemes, such as PES (Payment for ecosystem services) or markets that require a certain level of socio-environmental responsibility of the producers and their immediate buyers.

Well-designed incentive schemes under the Rural Development Program can also be of outmost importance, providing awareness, technical assistance and economic support for some practices regarding adaptation with costs that are economically unfeasible due to low economic returns from forestry.

Particularly regarding the implications that arise from the uncertainties with the level of risk loss under climate scenarios impact (does the loss risk compensates forest changes in species or composition?) or to induce a better adaptation preparedness despite some uncertainties (e.g. supporting nurseries to start producing alternative seedlings in case large scale disturbances occur) economic incentives are very important to overcome the short-term focus.

Many of the recommendations for climate friendly mitigation and adaptation practices make sense on their own. However climate finance may have a pivotal role to foster large scale management changes⁵ as it can be used to:

- overcome non-financial barriers, e.g. training and capacity building to cover knowledge and information gaps;
- overcome resistance to innovation, e.g. provide an incentive to change practices that have been common in a certain region for extensive periods of time;
- finance external and specialized input into designing better and locally adapted practices;
- eliminate the resistance to change due to uncertainties with the level of risk loss under climate scenarios impact;

³ Forests and Climate Change Working Paper 10: Forest Management and Climate Change: a literature review, FAO 2012.

⁴ Gert-Jan Nabuurs, Philippe Delacote, David Ellison, Marc Hanewinkel, Marcus Lindner, Martin Nesbit, Markku Ollikainen and Annalisa Savaresi. 2015. A new role for forests and the forest sector in the EU post-2020 climate targets. From Science to Policy 2. European Forest Institute.

⁵ Canaveira, P., Manso S. and T. Valada (2015). Cork Oak Landscapes, Their Products and Climate Change. Terraprima Report, February 2015.

- provide financial viability to alternative practices, e.g. replacing “bad” (but short term profitable) practices with better adapted to climate change ones;
- cover losses associated with temporary restrictions to current practices, e.g. excluding grazing until soils or forest densities recover;
- finance the information and monitoring system to measure the costs and the climate benefits introduced by the measures.

What are the perceptions of forest stakeholders on climate change and what are the implications for forest adaptation?

FAO conducted in 2011 an online survey of forest stakeholders. The survey sought to assess their perceptions of the impacts of climate change on forests and the impediments that limit the ability of forest managers to prepare and respond to climate change. The most selected constraints were lack of finances or financial incentives (n=192), lack of technical knowledge (n=154). More than 60% of respondents felt that current and future climate change financial support mechanisms would have an impact on forest management. Following on from the constraints to implementing climate change measures, respondents were asked what assistance they would require to address climate change. The most selected options were policy and financial incentives to undertake adaptation (77%) and mitigation (74%) actions in forests. Most respondents from Europe and North America indicated that assistance with policy and financial incentives for adaptation actions would be most important⁶.

Results based on responses to a questionnaire among private forest owners in Sweden, Germany and Portugal, operating in a wide range of bio-climatic as well as economic-social-political structures in a latitudinal gradient across Europe provided evidence that the personal strength of belief and perception of local effects of climate change may highly significantly explain human responses to climate change⁷. Another survey studied how forest stakeholders in Belgium perceive the role of their forest management in the context of climate change and the impediments that limit their ability to prepare and respond to these changes. Respondents indicated strong awareness of the changing climate, with more than two-thirds (71%) expressing concern about the impacts of climate change on their forests. However, less than one-third of the respondents (32%) reported modifying their management practices motivated by climate change. Among the major constraints limiting their climate related actions, lack of information and technical assistance (64%) as major constraints⁸.

Different surveys shows evidence that forest owners perceptions on the local impact of climate change is critical to promote adaptation. They also highlight the importance of economic incentives, information and technical assistance. So, it is really important to evaluate and understand the forest owners, the kind of constraints they identify, what kind of solutions can induce a broader adaptation response, etc.

Therefore the perceptions of forest stakeholders on climate change, the comprehension of their needs and expectations have strong implications for forest adaptation, because they are essential for a suitable incentive schemes design and for the engagement on forest owners, particularly for long term forest change practices.

⁶ Forests and Climate Change Working Paper 11: Forest Management and Climate Change: stakeholder perceptions, FAO 2012.

⁷ Blenow K, Persson J, Tomé M, Hanewinkel M (2012) Climate change: believing and seeing implies adapting. PLoS One 7:e50182. doi:10.1371/journal.pone.0050182.

⁸ Sousa-Silva, Rita, Quentin Ponette, Kris Verheyen, Ann Van Herzele, and Bart Muys. 2016. “Adaptation of Forest Management to Climate Change as Perceived by Forest Owners and Managers in Belgium.” Forest Ecosystems 3 (1).

State of the art of research/ practice

What are the main existing economic incentives (forest climate finance) at the EU for climate mitigation and adaptation actions in forestry?

European Agricultural Fund for Rural Development

The EAFRD is the main source of EU direct forest funding through the co-financing of rural development forestry measures and forest management through the second pillar of the CAP⁹. It can support climate action that can be mainstreamed into the Member States' rural development programmes. Regardless the fact that each Member States are obliged to fulfil certain EU commitments, goals, etc. regarding climate change, they have the power to choose which rural development measures to apply regarding forest adaptation, their budget allocation, the way they are formulated, etc.

BOX 1 - Examples of how climate change mitigation and adaptation can be addressed by the EAFRD

Rural Development Measures	Examples for climate change mitigation and adaptation
Thematic sub-programmes	The Rural Development Programmes can structure their thematic sub-programmes around the Measures listed in the Regulation, giving emphasis to the importance of the needs to be addressed by allowing an increased EAFRD support percentage. Climate change is one of the topics explicitly mentioned. Climate change sub-programmes can, for example, be developed on prevention of damage from extreme events, heat stress, improved water management and improved soil management, forest management and risk management. Sub-programmes may also refer to climate change hotspots, such as the condition of organic soil matter, etc.
Knowledge transfer and information actions	Actions related to improving knowledge transfer and information on climate change risks and adaptation tools. Relevant actions can address both mitigation and adaptation.
Advisory services, farm management and farm relief services	Training/advisory services, guidance documents, thematic groups related to topics like those mentioned above. Relevant actions can address both mitigation and adaptation.
Investments in physical assets	Actions which reduce the exposure of holdings to climate change impacts, such as on-farm water storage installations for drought periods.
Restoring agricultural production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions	Actions preventing soil degradation and low tillage. Establishing agro-forestry systems can also provide synergies to improve soil management, including on soil carbon stock depletion.
Afforestation and creation of woodland	In general, all afforestation measures are beneficial to mitigation. Where possible, attention should be given to measures with an optimal input/output ratio (i.e. investments in relation to carbon capture) taking in account location, soil quality, rapidness of tree growth etc.

⁹ European Forest Governance: Issues at Stake and the Way Forward What Science Can Tell Us 2, 2013.

	Forest management actions to preserve and improve the ecosystem services provided by forests (e.g. reduction of flood risk, erosion protection and soil buffering/ filtering functions) may enhance climate resilience.
Establishment of agroforestry systems	Mixture of agriculture and forestry to improve soil protection, prevent erosion, improve water and soil quality, lessen water demand, and create shelter and shaded areas for livestock and crops.
Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events	Actions that prevent forest fires and mitigate impacts from fires and natural disasters. Protective infrastructure such as observation posts, forest roads, water reservoirs, fire resistant plants, forest maintenance and fire ecology infrastructure, remote sensing, post-fire protection installations (fascines) and forest protection belts.
Investments improving the resilience, and environmental value of forest ecosystems	In general, all investments improving the resilience of forest ecosystems are beneficial to mitigation. Emphasis can be given to management and investment options which maximise carbon sequestration in the long term e.g. on tree species composition which is likely to be better adapted to site and growing factors under changing climatic conditions. Actions related to the function of forests as carbon sinks. Investments improving the ability of the forest to regenerate itself (e.g. herding control, fences), introduction of alternative species, enhancement of fire-ecosystems, enhancement of the welfare and protective functions of forest ecosystems, including location management and accessibility
Agri-environment climate	Increase carbon sequestration in soils and biomass: e.g. through conservation- and zero-tillage systems, cover crops that add nutrients to the soil, minimisation of summer fallows and periods with no groundcover, application of compost and manure to increase nutrients in the soil, improvement of pastures, and rangelands through grazing, vegetation, and fire management to increase organic soil matter, cultivation of perennial grasses and restoration of agricultural wetlands.
Natura 2000 and Water Framework Directive payments	Particular attention and explicit referral to actions which reduce the impact of climate hazards, such as increasing natural water retention and storage or restoring riparian vegetation.
Payments to areas facing natural or other specific constraints	Designation of areas especially affected by temperature increase and stress, erosion, fires, floods, pests and diseases or areas where topography accentuates climate change impacts as areas 'facing specific constraints'.
Forest environmental and climate services and forest protection	Actions related to the ecosystem services of forests which help with climate resilience, such as flood risk management, erosion protection and shelter from heat through introduction of climate change adaptation elements in the required forest management plans.
Co-operation	Networks, exchanges and pilot projects on climate change.

Natural Capital Financing Facility

Under the Natural Capital Financing Facility (NCFF), the European Investment Bank (EIB) will provide loans and investments in funds to support projects which promote the preservation of natural capital, including adaptation to climate change.

Halting the loss of biodiversity and adapting to climate change requires increasing investment in natural capital that complements the more traditional grant-based funding. The main aim of the NCFE is to demonstrate that natural capital projects can generate revenues or save costs, whilst delivering on biodiversity and climate adaptation objectives.

The NCFE will support projects working on Payments for Ecosystem Services, Green Infrastructure, Innovative pro-biodiversity and adaptation investments and Biodiversity offsets (http://ec.europa.eu/environment/life/funding/financial_instruments/ncff.htm).

Voluntary carbon market finance

The European Union's Emission Trading Scheme (EU-ETS) is restricted to large energy and industrial companies and, therefore, does not currently accept forestry-based carbon offsets, so these are only transacted by European buyers on the voluntary market.

In the voluntary market, individuals, companies, or governments purchase carbon offsets to mitigate their own greenhouse gas emissions from transportation, electricity use, and other sources. Carbon offsets can be created by a broad array of project types, including forestry-based projects, but projects located in Europe still produced relatively few carbon offsets for the voluntary market.

European forestry-based offsets mainly originated in the UK and Italy. The UK has emerged as the main supplier of European forestry-based carbon offsets, thanks to its state-sanctioned Woodland Carbon Code (WCC), which provides national guidance and standards to develop domestic forest carbon projects. UK project developers transacted 259 KtCO₂e of forest carbon offsets in 2015. In contrast, several Italian provinces and project developers have initiated projects in the absence of national guidance. Two projects in Germany and the Netherlands also reported transacting small volumes in 2015.

Payment for Ecosystem Services (PES)

Payment for ecosystem services (PES) programs are being applied as an incentive mechanism to forest owners, paying them for the provision of ecosystem services. There are already some well known case studies, like Vittel (Nestlé Waters) that pays farmers in the watershed to adopt best practices in dairy farming.

PES have huge potential for promoting adaptive forest management, for example in areas with low profitability from forest but with high non marketed services, that can lead to rural abandonment, lack of forest management and increasing forest fire risk.

Insurance

Insurance can play a dual role in adaptation. On the one hand, insurance payouts reduce the financial impact of events like forest fire or storm damage. On the other hand, the cost of insurance premiums for properties with high exposure to climate risks can provide an incentive for adaptations which reduce the risk.

Forestry insurance can be an effective approach to close the protection gap, enabling the cover of the standing timber investments which, given the long rotation periods of forests, are exposed to fire and windstorm risks over several years at a time. It can be a good tool to promote the implementation of comprehensive risk management strategies with a long-term vision, under the adaptive forest management framework.

Identify major problems with current existing economic incentives and their implementation

Absence of a legally binding EU forest policy

Forestry is subject to a large set of EU forest-related policy. This fragmentation and absence of a legally binding EU forest policy or at least, legally binding goals regarding adaptive forest management, or budget allocation, etc., reflects on the way member states prioritize this issue and option (or not) to develop supporting measures addressing climate change mitigation and adaptation through sustainable forest management.

Available Budget

EU regulation (EAFRD) is the main budget source for forestry measures, for forest-environmental and climate services and forest conservation. Forest climate adaptation is dependent on the strong competition among the overall Rural Development measures and inside the forestry measures.

The absence of a legally binding minimal budget for adaptive forest management ("although not legally binding, it is suggested that Member States spend at least 30% of their EAFRD contribution 'on climate change mitigation and adaptation and environmental issues [...] through agrienvironment- climate and organic farming payments and payments to areas facing natural or other specific constraints, through payments for forestry, payments for Natura 2000 areas and climate and environment-related investment support.").

Complexity in the Governance Model

The application, administration and inspection processes are complex and full with bureaucratic requirements. There is also a strong need of simplification of procedures at the level of the eligibility criteria, analysis and decision process.

Complexity in the forest investment supports

Streamlining the investment in forest adaptation could be achieved through the definition of a mechanism that simplifies, effectively and operationally, the process of preparing the application and its analysis. This mechanism could be set up by means of a lump sum scheme for standardized and modular investments, representing the most common types of investment and priority in terms of forest adaptation. The process has to be simple (avoiding too complex multiple choices), with a reduced number of eligible operations.

These forest investment supports, that can include a very significant set of climate change adaptation actions to enhance forest resilience, are essential to ensure adaptive forest management in a territory with high susceptibility to desertification and to reverse growth the incidence of forest fires and pests and diseases. They will also be of recognized importance as a guarantee of the mitigating effect of forests on climate change.

Lack of attractiveness of payments

The proposed actions are out of order to the reality and to the commitments that each forest owners has to assumed.

Measures have to be attractive in order to encourage engagement of forest owners and promoting the changing management procedures in order to better respond to the forest adaptation challenges.

Existing best practices and tools

- Examples on successful economic incentives (forest climate finance) at the EU level
- Highlight replicable successful models

Box 1. UK's Woodland Carbon Code

The UK's Woodland Carbon Code the voluntary government-backed standard for woodland creation projects, was launched in 2011. It allows the project developer to quantify and account for the carbon dioxide sequestered by the project, using the best scientific knowledge provided by Forest Research. A third-party validation and verification process ensures that projects are initiated and managed to high quality carbon standards as well as sustainable forest management as set out in the UK Forestry Standard. The UK Forestry Commission has also developed a framework for outlining the wider social and environmental benefits of projects. All projects use the publicly available UK Woodland Carbon Registry, provided by Markit, which shows project documentation as well as tracks the issuance, ownership, transfer and use of carbon credits,

known as 'Woodland Carbon Units'. This provides transparency and clarity to the market and minimizes the possibility of double-selling.

By the end of 2016, 243 projects had registered with the Woodland Carbon Code. Altogether these projects are creating over 16,000 hectares of woodland and over their lifetime are predicted to sequester almost 6 MtCO_{2e}. Of these projects, 138 were validated. Validated projects have created almost 5 thousand hectares of woodland and are predicted to sequester 2.3 MtCO_{2e} over their lifetime. Projects have to be verified after year five and then every decade thereafter, so the first projects are just beginning to go through this process

The UK Government has set emissions reduction targets through the UK Climate Change Act to reduce greenhouse gas emissions 80% by 2050 compared to 1990 levels. Across the UK there are also targets for woodland creation. Projects meeting the Woodland Carbon Code help to meet both of these targets. The UK government's Environmental Reporting Guidelines³² set out how companies in the UK should report their gross and net emissions, and states that UK-generated Woodland Carbon Units can be used to compensate for gross emissions. The British Standards Institute's "PAS 2060: Carbon Neutrality" sets out what companies need to do to claim 'carbon neutral' status. UK-generated Woodland Carbon Units can be used to compensate for unavoidable emissions in claims of carbon neutrality (State of European Markets Voluntary Carbon, 2017).

Selling the rights to the carbon captured by Woodland Carbon Code certified woodlands can provide new income for landowners, potentially supplementing other income streams from timber, woodfuel and sporting activities.

<https://www.forestry.gov.uk/carboncode>

Box 2. Portuguese Carbon Fund

UNAC and TERRAPRIMA in partnership develop "Shrubland management as a tool to sequester carbon for agroforestry areas" (2011-2014), was the major national PES project funded by the Portuguese Carbon Fund under the framework of the strategies undertaken by Portugal to accomplish its Kyoto Protocol commitments through the optional Agriculture, Forestry and Other Land Uses (AFOLU) activities.

The project aimed to promote forest adaptation to climate change, ensuring soil protection through carbon sequestration compensation provided by changing the mechanical control system on the land. What was proposed is the replacement of harrowing with bush cutters and shredders. The forest owners were paid for the carbon sequestration and that payment helped to mitigate the extra cost of the shredders and chippers, while promoting forest adaptation to climate change through soil protection, combating erosion, improving water regulation. In addition, it reduces the incidence of damage to the roots of the trees, which in the case of the Montado agro-forestry systems is of particular importance.

That was a large scale practical experience (around 80.000 ha) of an implementation of a jointly forest adaptation new practice that also mitigate climate change.

The results clearly indicate, as expected, a significant increase in soil organic matter associated with the use of shredders. In terms of carbon sequestration in soil, this increase is equal to a sequestration of 3,6 tonCO₂.ha⁻¹.yr⁻¹ (Valada et al., 2012).

<http://www.terraprima.pt/en/projecto/1>

Box 3. Portugal RDP: Extensive Grazing - Support to the Maintenance of Agro-Silvo-Pastoral Systems

The Portuguese Rural Development Programme, has an agri-environment measure supporting farmers for adopting or preserving extensive grazing practices that ensure the maintenance of agro-silvo-pastoral systems. It has an additional support(payment bonus) for optional commitments for areas under natural regeneration and the use of bush cutters and shredders instead of harrowing for shrub vegetation management.

Under Mediterranean conditions the management actions to promote climate change mitigation and climate change adaptation are often overlapping, as they contribute both to increase resistance and resilience to climate change and to reduce emissions or to increase sequestration. This is clearly the case of management actions that promote soil protection against erosion and soil organic matter, which lead to soil carbon sequestration and to increased capacity to cope with droughts, or improvements in fire prevention measures, which reduce fire emissions and maintain the health and vitality of cork oak forests

<http://www.pdr-2020.pt/site/O-PDR2020/Arquitetura/Area-3-Ambiente-Eficiencia-no-Usos-Recursos-e-Clima/Medida-7-Agricultura-e-Recursos-Naturais/Acao-7.7-Pastoreio-Extensivo/Operacao-7.7.2-Pastoreio-Extensivo-Apoio-a-Manutencao-de-Sistemas-Agro-Silvo-Pastoris-sob-Montado>

Box 4. Payment for Ecosystem Services - Green Heart of Cork (GHOC) Project

The Green Heart of Cork (GHOC) Project aims to promote the conservation of the world's largest continuous patch of cork oak woodlands, spanning over half a million hectares, which is located in the Tejo and Sado river basins. This forest area harbors high levels of biodiversity and also coincides with the larger aquifer in the Iberian Peninsula, the T3-Aquifer. The project aims to compensate landowners practice sustainable forest management and contribute to the conservation of the key ecosystem services provided by cork oak woodlands, such as carbon storage, erosion prevention, water cycle regulation and aquifer recharge.

Forest landowners committed to maintain good forest management practices within the 16.000 ha FSC certified areas. FSC certification places a strong focus in criteria related to biodiversity conservation and watershed protection. Approximately 600 hectares (ha) were considered to be of critical importance for the conservation biodiversity and for recharging the aquifer T3 and therefore were considered High Conservation Value Areas.

Currently the GHOC Project is supported by three private companies, Coca-Cola Portugal (a beverage company), which is providing payments to forest producers who are contributing for the conservation of forest ecosystem services and Jerónimo Martins (a retailer) and Grupo Onyria (hotel company) who are financing the GHOC Project.

http://www.wwf.pt/o_que_fazemos/green_heart_of_cork22/

3. Conclusions

Summary: lessons learnt on the key issue

- Among the major constraints limiting climate related actions are lack of information and technical assistance and lack of financial incentives.
- Economic incentives (forest climate finance) can be designed and implemented for incentivising and supporting behavioural changes to adaptation.
- Improve the use of existing economic incentive, under the voluntary market or policy based (RDP);
- Promote and develop adequate RDP forest measures for forest adaptation given the available budget.

4. Research needs

Knowledge gaps to be cover by research

- Forest owners perceptions, driving forces and reasons for forest adaptation decisions (crucial to develop adequate economic incentives)
- Impact assessments, as well as mitigation and adaptation strategies, at the regional and local scales
- Economic costs of climate change in forests at the local scale
- Investigating the cost-effectiveness of forestry options for climate change mitigation
- Motivation for change and related incentive mechanisms
- Impact assessments on the forest incentives under RDP regarding forest adaptation
- Monetary valuation of forest goods and services
- Analysis of climate change adaptation options in relation to changing risks

Research needs from practice

- Climate change adaptation incentives should be user-oriented:
 - o Under which conditions (social, political, and economic) do forest owners initiate changes?
 - o What kind of incentives are there/are needed for different owners?

5. Ideas for Innovations

Ideas for innovative projects/ solutions

- Development of models for the quantification, valuation and mapping of ecosystem services as well as remuneration models.
- Communication and awareness raising campaigns developed to share best practices with all stakeholders and facilitate the exchange of information and make information accessible and understandable in different forms and to different.

Potential EIP operational groups

- Knowledge transfer is an essential condition for research to lead to innovation. Improving the communication and demonstration of possible solutions for climate change adaptation is therefore likely to be the most effective strategy for increasing their adoption.
- Assessment of the forest incentives under RDP regarding forest adaptation.

Further research needs coming from practice, ideas for EIP AGRI operational groups and other proposals for innovation can be found at the final report of the focus group, available at the FG webpage <https://ec.europa.eu/eip/agriculture/en/content/focus-groups/new-forest-practices-and-tools-adaptation-and>

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https://ec.europa.eu/clima/policies/budget/life_en#tab-0-1

(http://ec.europa.eu/environment/life/funding/financial_instruments/ncff.htm).

Potential for climate action - Examples of how to mainstream climate action and the potential for doing so EAFRD