



Paper 1 of the 'CAP Unchained Series'

WHAT DO WE NEED FROM EU RURAL LAND?

IEEP background paper
July 2020

Ben Allen

Citation: Allen, B (2020) What do we need from EU rural land? Paper 1 of the CAP unchained series. Institute for European Environmental Policy, AISBL

Acknowledgements: The author would like to thank Thomas Legge and Pete Harrison for their comments and support in the drafting of this paper.

About the author: Ben is Head of the Agriculture and Land Management, and the Biodiversity and Ecosystems Programmes at IEEP. He has spent the past 15 years working on EU land use, bioenergy, agriculture, climate and land management policy in both the public and private sector. Ben's particular skills relate to the understanding and interpretation of the dynamics between different land uses and their drivers, including sectoral policies such as climate and energy, agriculture, forestry and transport policy, having played a central role in a range of studies in this area. A key focus of his work is the development of EU land use policy, particularly in relation to climate action and the bioeconomy, looking at mechanisms and policies to promote the better management of rural land in the EU and deliver against EU and international targets.

Contact: Ben Allen, ballen@ieep.eu

This report was commissioned by the European Climate Foundation.



About IEEP

The Institute for European Environmental Policy (IEEP) is a sustainability think tank. Working with stakeholders across EU institutions, international bodies, academia, civil society and industry, our team of policy professionals composed of economists, scientists and lawyers produces evidence-based research and policy insights.

Our work spans nine research areas and covers both short-term policy issues and long-term strategic studies. As a not-for-profit organisation with over 40 years of experience, we are committed to advancing impact-driven sustainability policy across the EU and the world.

For more information about IEEP, visit www.ieep.eu or follow us on Twitter @IEEP_eu and LinkedIn.

Contents

Summary	4
Introduction	6
Box 1: Rural land in the EU	8
What does society need from land?	9
A needs hierarchy	11
Figure 1: Maslow's hierarchy of needs as related to land	11
Figure 2: Societal needs from land underpinned by societal needs for land	13
What should public money pay for?	13
Are our basic needs being met?	15
Box 2: Contribution of the land using sectors to climate mitigation	17
Should our basic needs be incentivised from EU land?	18
Incentivising delivery	19
Conclusions and an uncomfortable truth	21

Summary

What does society need from rural land in the EU, what can that land supply and how could it be incentivised through a public budget equivalent to that of the current Common Agricultural Policy (CAP)?

This paper is the first in a series of three, that looks to set out a rationale for what we need from rural land, before subsequent papers explore what a new and different policy would look like to achieve such a vision, and a transition pathway to enable systemic change.

Rural land (which excludes urban and industrial areas) covers around 95% of the EU's land surface. It a multi-functional resource that delivers and has the potential to deliver a wide range of productive, regulating and cultural services to society (for example, food, water retention, landscapes) – so-called Ecosystem Services.

The areas of rural land are generally declining, becoming more fragmented as a result of urban and infrastructure expansion, and their condition is deteriorating. The European Environment Agency's recent 2020 outlook report paints a stark picture of the condition of rural land and the ecosystems associated with it. Only one of the indicators of the environment (area of protected sites) is on target to reach its 2020 goals, the remaining nine indicators covering land, soils, water, biodiversity and ecosystems show declining or mixed outlooks, and none are on track to meet 2020 or 2050 targets.

As humans, we have basic primary needs – such as food, air, water and shelter, with a series of secondary and tertiary needs that lead to self-fulfilment. Many of society's needs are provided by land, yet they are not equal either in their importance or in their priority for public support. Private needs, such as food, are generally satisfied by markets and are traded globally. Yet there are common or public needs (such as biodiversity or cultural landscapes) that can only be enjoyed locally, suffer from undersupply and require public interventions to ensure they are delivered.

The needs we have as a society *from* land are different from the needs that society has *for* the land. Whilst we need food, water, shelter, etc., *from* land, prioritising any of these may lead to the exclusion of others. What is needed is for land to be in a position to provide all of these needs indefinitely. This draws attention towards a primary and overarching need *for* land, which is to

have healthy and functioning ecosystems, biodiversity and a stable climate from which all other needs *from* land can be derived.

It is, therefore, essential to bring ecosystems back into equilibrium as a baseline condition if we stand any chance of meeting societal needs, goals and targets, such as curbing global temperature rise or allowing future generations the ability to produce food in a more sustainable way that is compatible with the environment from which it is derived.

Public incentives for land-based goods and services must, therefore, be oriented towards delivering these common goods.

Focussing public incentives in this way requires a fundamental rethink of the policies that influence land. Future policy will need to address the wider scope of rural land and the use of commodities or products (bioresources) obtained from land, to provide coherence between the drivers and use and management of land. There should be a guiding framework for land under which all other relevant policies are developed. This would need to be supported by allied policies and tools addressing trade and export.

Such a change in focus from what is needed from EU land and what should be incentivised has urgency, yet there is an inherent need for transitional support as land managers re-orientate and re-tool. A roadmap for systemic change will be essential.

Introduction

What does society need from rural land in the EU, what can that land supply and how could it be incentivised through a public budget equivalent to that of the current CAP? This paper is the first of three, that looks to set out a rationale for what we need from rural land, before later papers explore what a new and different policy would look like to achieve this vision, and a transition pathway to enable systemic change.

This paper focusses on the rationale for the prioritisation of environment and climate goods and services from EU rural land, and gives some insight into how they might be incentivised. It argues that these goods and services are not only important in their own right, but essential to underpin the provision of other societal needs such as food, energy and recreation¹.

Rural land (Box 1) is a multi-functional resource that delivers and has the potential to deliver a wide range of productive, regulating and cultural services to society (for example, food, water retention, aesthetic landscapes). Whilst agricultural land typifies many rural areas in the EU, it is not a natural landscape, in fact, quite the opposite. It has resulted from a continual modification of natural systems to focus on the production of food, feed and fibre for society over millennia.

This is not to malign agriculture or this focus of production; food is what a growing population demands and in our civilized ingenuity we have become very effective at meeting that demand. No, agriculture, as practiced in the EU, is focussed, purposeful and multifunctional. The specialisation is constraining multi-functionality and we are losing the essence of productive land. Pushing natural systems to a point where they can no longer replenish nutrients, soils and vegetation, has led to a climate crisis and major extinction events across the globe. This, in turn, is undermining our ability to deliver sustainable food production.

Focussing on one set of services that land can provide (food, for example) becomes to the detriment of other services, and it is necessary to work

¹ The paper deliberately avoids the question of whether what society demands from land is proportionate to societal needs, so as not to become too abstract, but it does consider where land-based goods and services should be provided.

within planetary boundaries and ecological limits to enable land using sectors contribute to the active regeneration of natural capital and resources.

The current subsidy system and lack of coherent approach to the use and management of land and bioresources in the EU, has led to chronic under-delivery and the widespread undermining of lands potential to provide a range of services both now and in the future. Public support to agriculture through the CAP is approximately 37.8% of the EU budget (2014-2020) (annual figures in 2020, 34.5% or €58.12bn), distributed across a similar proportion of the EU's land area (39% / ~173mha). Proposals for the CAP's share of the new EU budget would see this figure decrease by 9% from €382.5 bn (excluding the UK) to €348.3 bn in constant 2018 prices.

Whilst lower than the current CAP budget, these figures are higher than initial proposals as a result of the Next Generation EU recovery fund, as a response to the COVID-19 pandemic. This sees an additional €15bn allocated to Rural Development funds. Despite the pressing need for change and a boost in budget, the legacy of supported farming has prevailed since the 1960s with direct support to farmers still representing the greatest share (~75% or €258.3bn) of the new CAP budget with limited environmental conditionality. Rural development, whilst benefiting from the green recovery fund, remains modest in comparison at only €90bn (~25% of the CAP).

Future land use must be different from that of today, sufficiently transformed to enable its contribution to combating climate change and the delivery of net-zero emissions, while providing adequate nutrition, biomaterials, space for nature, health and wellbeing, and other ecosystem services to an increasingly global society.

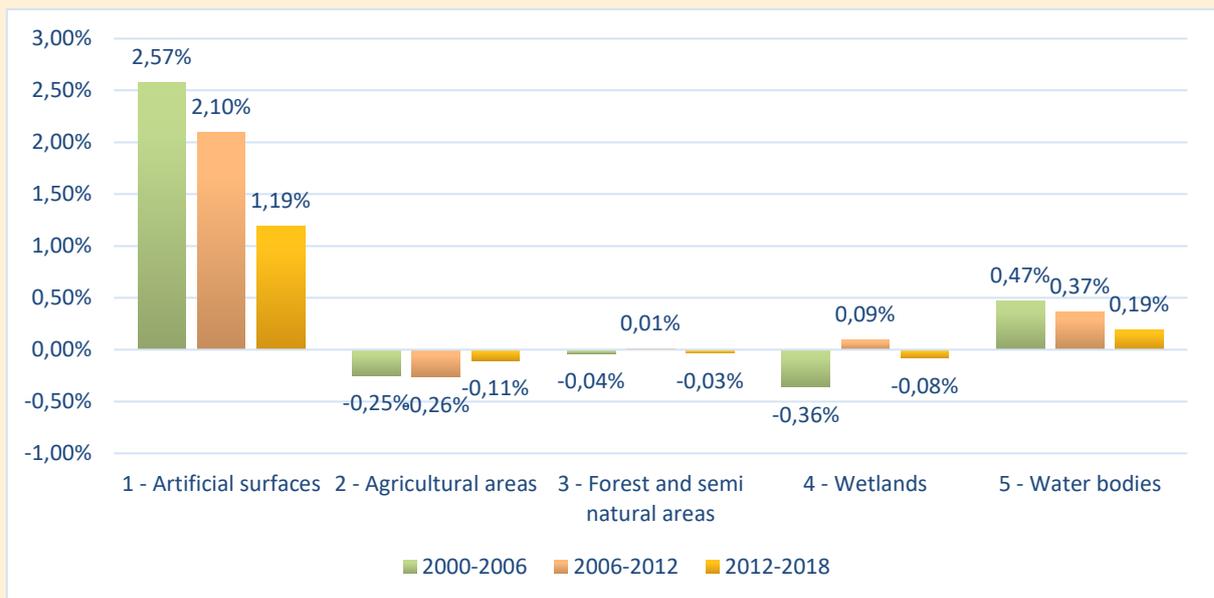
To achieve this requires a fundamental shift in the way the ~€350bn share of the EU's seven-year budget is distributed. Focussing public funding towards the environment and climate goals, and moving away from direct support, would still see farmers and land managers benefit, but could more than triple the expenditure focussed on addressing these objectives and provide the support for the systemic change needed in our food and land-use systems in the EU, with consequences for consumption, health and trade. Yet redistribution requires a clear understanding of the priorities for this support, and thus what society needs land to provide.

BOX 1: RURAL LAND IN THE EU

Rural land comprises those areas that are not urban or industrial areas. It is primarily covered with some form of vegetation, except for areas of water (rivers or lakes) or bare rock (such as high alpine areas).

By this definition, approximately 95% of the EU's land surface is rural. Agricultural areas cover 45% (1.99m km²) of the EU's* land surface, with a similar area for forest and semi-natural land (44%; 1.95m Km²). Wetlands and water bodies cover 2.5 and 2.7% respectively.

The overall area of rural land is declining, as a result of the expansion of urban areas and infrastructure. Within rural areas, there is a constant change. Significant variation exists between Countries and between land cover classes. The chart below shows the percentage change in the land cover at successive intervals since 2000. Most rural land areas have and continue to decline, with a marginal increase in the forest area between 2006-2012, but continued declines to 2018. Wetland areas continue to increase, although at a decreasing rate.



Beyond land use and cover change, there are added pressures on rural land and ecosystems. These are well documented and explained in the European Environment Agency's 2020 state of the environment report – which summarises the impact on terrestrial ecosystems in the context of whether they are on track to meet 2020, 2030 or 2050 targets.

	Past 10-15yrs	Outlook 2030	On target?
Urbanisation and land use by agriculture and forestry	Deteriorating	Deteriorating	No - 2050
Soil condition	Deteriorating	Deteriorating	No - 2020
Terrestrial protected areas	Improving	Mixed outlook	Yes - 2020
EU protected species and habitats	Mixed	Mixed outlook	No - 2020
Common species (birds and butterflies)	Deteriorating	Deteriorating	No - 2020
Ecosystem condition & services	Deteriorating	Mixed outlook	No – 2020
Water ecosystems & wetlands	Mixed	Mixed outlook	No – 2020
Hydromorphological pressures	Deteriorating	Mixed outlook	No – 2020
Pollution pressure and links to human health	Mixed	Mixed outlook	No – 2020
Abstraction and pressure on surface and groundwater	Improving	Mixed outlook	No – 2020

Source: European Environment Agency (2019) The European environment – state and outlook 2020. Knowledge for transition to a sustainable Europe. <https://www.eea.europa.eu/soer/2020> – with data taken directly from the Corine Land Cover survey dataset - <https://www.eea.europa.eu/data-and-maps/dashboards/land-cover-and-change-statistics> Note: *EEA data for the EU-28.

What does society need from land?

The concept of ecosystem services helps in understanding the many functions that land provides. Most of the EU's territory is rural, with farming and forestry dominant land uses. This land is a vital component of the cultural identity of Europe and its regions and provides provisioning services (food, fibre, energy), regulating services (climate, water, wastes), and cultural services (recreational, symbolic, intellectual). In more relatable terms these are things such as food, timber and biomass production, supporting of rural

livelihoods and the bioeconomy², the preservation of cultural landscapes, and the (semi) natural ecosystems and wildlife associated with them. Land and the commodities and services it provides also has a global dimension, which must be considered in the context of what should EU land be used for and provide, what can be traded, and what must be delivered locally.

We can think of the services that land can supply from two broad perspectives. First is the amount and type of services that society 'needs' and those that we want or 'demand' from land. For example, we may 'need' food from land, but our need is for a sufficient quantity that meets our biological requirements (i.e. the amounts of calories and nutrients that are required to live healthily). This is clearly different from the amount and type of food that we wish to consume, and thus we make indirect demands from land, based on our shopping and consumption choices. Our energy needs are similar, varying with the amount we may 'need' in order to remain in a comfortable environment, versus the amount which we demand and use. The second perspective is whether these services can only be provided from land or if there are alternatives. For example, it may be true that food and nutrition are likely always to require some land-based component, even if significant contributions can be made from aquaculture. Yet with advances in renewable energy technology, the need for land-based energy (i.e. biomass) is greatly reduced and could be provided entirely from alternatives, such as solar or wind requiring only 'space' for infrastructure. What society therefore needs, and what land should provide to meet those needs, can be different.

The supply of land and the services it provides are finite, in both space and time – more simply, there is limited land, and some of the services or commodities that it supplies need to be replenished sufficiently before they can be supplied again (such as timber). Not all of what we need from land can be met simultaneously and not all at the level demanded. This presents a challenge for policy and decision-makers on how and what to incentivise. This paper concerns itself solely on the different needs society has from land, and their relative priority, rather than exploring the complexity, subjectivity and acceptability of societal demands.

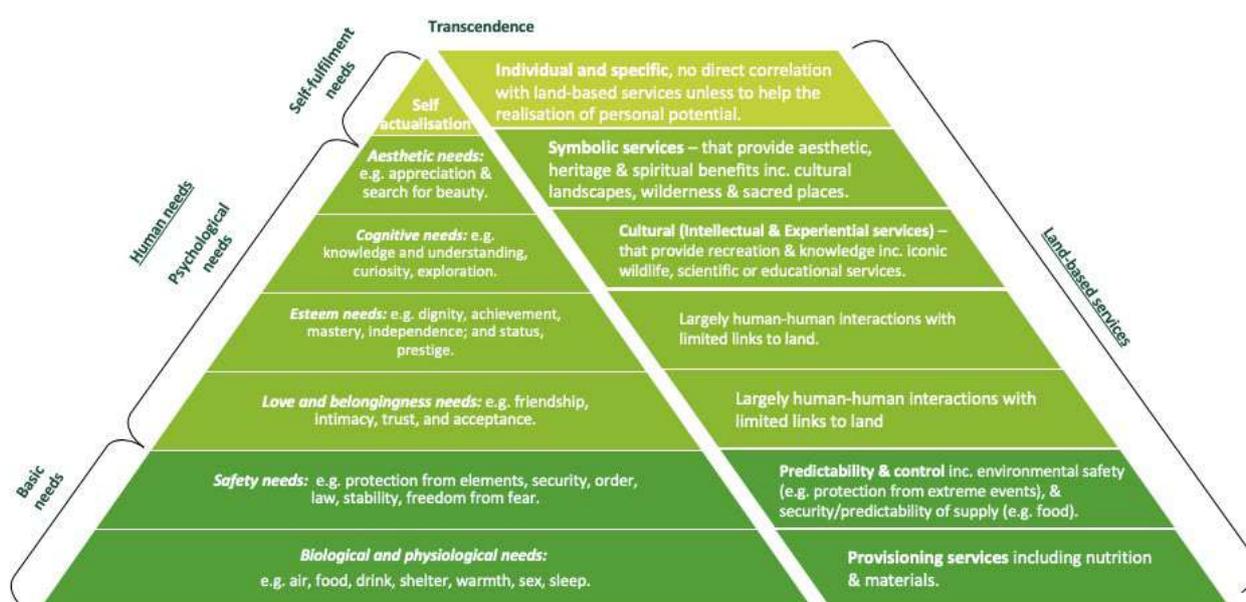
² It is home to around half the population, including 12 million farmers, and employs more than 47 million people

A needs hierarchy

Maslow's revised/extended hierarchy of needs³ gives a perspective on human needs that are common to all. These can be translated broadly into services provided by land, or those which only land can provide (Figure 1).

From this perspective, it is evident that there is a base need for food, water, and a healthy environment in which society can survive and thrive and that for the most part these are inextricably linked to land⁴. On this basis, one can argue that the provisioning services from land take precedence and that food and clean water are the essential services that land needs to provide to society. Yet acquiring or providing those services relies on other conditions being in place – such as functioning ecosystems and a stable climate.

Figure 1: Maslow's hierarchy of needs as related to land



Therefore, the order of needs *for* land is different from that of the needs of society *from* land. In other words, if the primary need of society *from* land is

³ Maslow A H. (1970). Motivation & personality. Harper & Row. Maslow A H. (1970). Religions, values, & peak experiences. Penguin.

⁴ Functioning and stable ecosystems support the land-based provisioning services, and underpin or provide directly some higher-level needs, (e.g. cultural needs). Whilst these self-fulfilment needs are provided by land in some cases, they can also be met through other means

for food, water and a healthy environment, then the primary need of society for land is that it is in a condition in which it can provide those functions indefinitely⁵.

We 'need' functioning ecosystems because our primary needs from land depend on them. Elaborated, society has a predictable supply of biological (food, water, air), physical (warmth, shelter, energy), cognitive (e.g. exploration) and aesthetic (e.g. landscapes) needs from land. Land needs to be in an ecologically functional state in order to provide these needs to society, and thus must have functioning ecosystems.

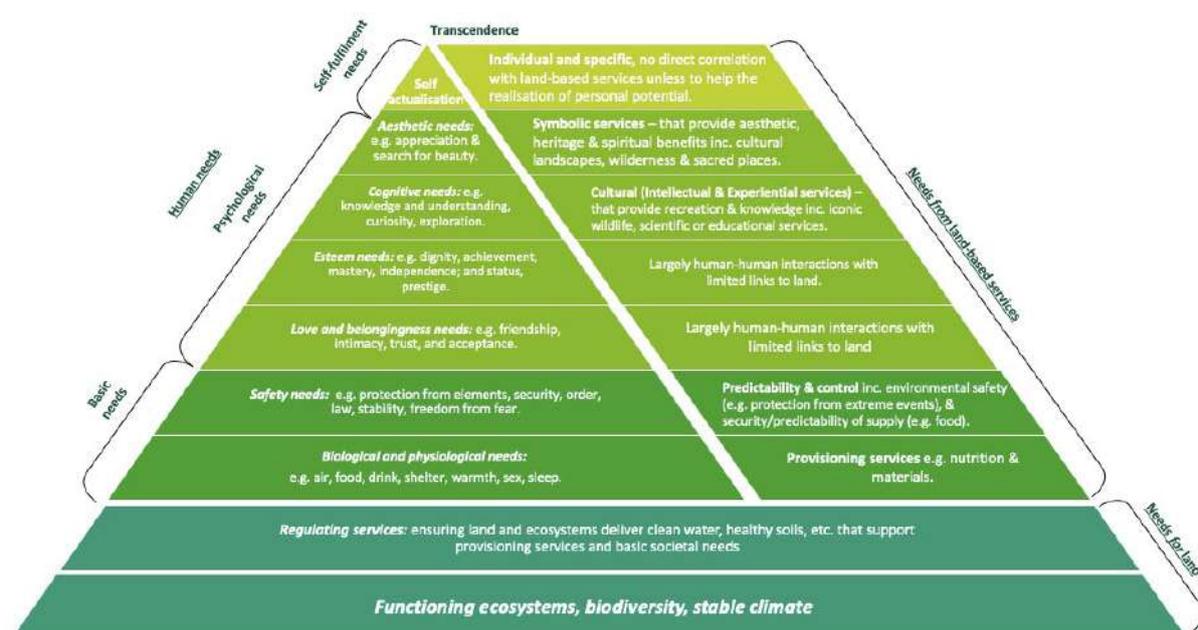
With this in mind, regulating ecosystem services that support and underpin land-based functions rise in importance, such as regulation of wastes, flow regulation (e.g. water), regulation of the physical (soils, climate) and biotic (pollination, pest control) environment. This includes climate resilience and adaptation potential.

Central to all of these is biodiversity – not an ecosystem service in its own right, but a necessary element to all ecosystems.

Functioning ecosystems, therefore, become a precondition of lands ability to supply societal needs and thus we see a shift in the hierarchy of human needs for land so that the human needs from land can be delivered (Figure 2).

Enabling functioning ecosystems means focussing efforts towards ensuring sufficient provision of the environment in which ecosystems can continue to thrive, as well as addressing any threats. Climate change is a clear example where the threat of climate change leads to a change in system functions (variable and extreme weather events, pest and disease range expansion, etc.), thus curbing the impact of climate change is one of the priorities for land, and of course society as a whole. These relationships are of course complex, and in the case of climate, land can also be part of the solution through the preservation of carbon sinks and increasing sequestration, as well as improving adaptation and resilience.

⁵ Thus, land use must be sustainable and functional, rather than short-term augmentation of the environment.

Figure 2: Societal needs from land underpinned by societal needs for land

This different take on the priority order for what society needs for land is similar to the 'wedding cake model' view of the sustainable development goals provided by Rockström & Sukhdev⁶. This model argues that there are some 'non-negotiable' SDGs on which all others depend (life on land/biodiversity (15), below water (14), clean water (6), climate action (13)) and that these represent the safe operating space in which society can function.

What should public money pay for?

Identifying what society needs is not the same as what EU public money should be used to pay for from rural land. The concept of public money for public goods is well established, having been adopted from the economic literature into an agricultural context more than a decade ago⁷. The

⁶ Developed by the Stockholm Resilience Centre, Johan Rockström and Pavan Sukhdev.

⁷ Cooper T et al (2009) The provision of public goods through agriculture in the European Union. Report prepared for DG Agriculture and Rural Development. Institute for European Environmental Policy. https://ieep.eu/archive/uploads/457/final_pg_report.pdf

following quoted text is from a more recent publication⁸ but outlines clearly the concept of public goods in agriculture (used as an analogy here for rural land) and the rationale for why it may be necessary to incentivise their provision through public funds.

“The term ‘public goods’ was developed in the economic literature. It applies to a range of goods, services and other matters of societal interest that are not delivered through the market, i.e. the normal interplay of supply and demand. Markets have been shown to be the most effective mechanism for balancing supply and demand for the provision of private goods and services, such as food and drink. However, there are other goods and services that society values and would like to secure, but which are not possible to deliver through the market. These are known in economic literature as public goods and include environmental goods such as biodiversity or cultural landscapes.

Public goods are defined as having two main characteristics. First, they are ‘non-rival’ which means that if the good is consumed by one person, it does not reduce the benefit available to others. Second, they are ‘non-excludable’, meaning that if the good is available to one person, other people cannot be excluded from enjoying its benefits.

Markets do not function properly for public goods because their characteristics mean that there is no clear incentive for individuals to pay for them. Equally, there is little incentive for anyone to provide them, as those who might engage in doing so would not be rewarded. This means that public goods run the risk of under-supply.

As a result, where there is a demand from society for a particular public good which is not provided in sufficient quantity, then public intervention in the form of policies is needed to secure a desirable level of provision in line with these demands. Where the market does not function to meet demand, public policy is needed instead to incentivise the necessary action. This requires either the setting of clear standards

⁸ Baldock et al (2011) Public goods and public intervention in agriculture. Brochure prepared for DG Agriculture and Rural Development. European Network for Rural Development. <https://ieep.eu/publications/agriculture-and-land-management/sustainable-land-use/delivering-public-goods/public-goods-and-public-intervention-in-agriculture>

as a baseline for admissible action or, in many cases, committing public funds to incentivise supply.”

The different role of markets and public funds is made clear in the context of food commodities and food security. As a commodity, food, feed and fibre are adequately provided through markets as private goods, and therefore should not be subject to public support. However, the conditions for functioning ecosystems that underpin production (and thus a fundamental part of food security) are needed by society, but not well addressed by markets at present. Therefore, there is a clear and strong rationale for the use of public support for their provision.

The key question then is whether our identified needs for land are being met or not, and for the purpose of EU incentives, whether those needs can only be met on land in the EU. These questions do not seek to address how much of each need should be provided in the context of a finite budget, simply to ascertain if the common goods that we 'need' for and from land are being delivered currently and whether it is necessary to ensure they are produced domestically rather than imported.

Are our basic needs being met?

Our basic needs for environmental and climate goods and services from land are undersupplied, and markets are not functioning effectively for their provision (Box1) Food and fibre production and yields have been prioritised in previous decades to great effect and are well provided.

Yet over time, the process of specialisation, concentration, intensification and structural reform of land use, driven by market demand, has continued with marked consequences. These trends have put pressure on the natural environment, increasing the footprint of production and contributing to us going beyond planetary boundaries⁹. This is happening quicker than

⁹ Rockström J. et al (2009). A safe operating space for humanity. *nature*, 461 (7263), 472; Steffen et al. 2015. Planetary Boundaries: Guiding human development on a changing planet. *Science* Vol. 347 no. 6223

imagined¹⁰ and we have a chronic undersupply of environmental goods and services from EU land.

Climate is a good example of how there has and continues to be this lack of supply (Box 2). Yet climate mitigation and adaptation are clearly beneficial for society and ensuring other needs from land are met. Increasing the carbon sink potential from the land using sectors and reducing the GHG emissions from agriculture are essential for any long-term decarbonisation plan.

Other sectors (such as energy) are making greater efficiency gains and emission reductions, and at a greater pace. Yet, unlike the energy and other sectors in the economy that can only reduce emissions, the land using sectors have unrivalled potential to draw carbon out of the atmosphere, balancing unavoidable emissions where they arise.¹¹

If done right, such as the use of natural climate solutions¹² the active regeneration of natural capital and ecosystems will also enable positive contributions towards wider EU sustainability goals and the wider suite of societal needs from such land.

¹⁰ Poux X, Aubert P-M (2018). An agro- ecological Europe in 2050: multifunctional agriculture for healthy eating. Findings from the Ten Years For Agroecology (TYFA) modelling exercise, Iddri-AScA, Study N°09/18, Paris, France, 74 p.

¹¹ Lóránt A & Allen B (2019) Net-zero agriculture in 2050: how to get there? Report by the Institute for European Environmental Policy.

¹² Those activities that conserve, restore, and/or improve land management actions that increase carbon storage and/or avoid GHG emissions across rural land.

BOX 2: CONTRIBUTION OF THE LAND USING SECTORS TO CLIMATE MITIGATION

Globally, the Agriculture, Forestry and Other Land Use (AFOLU) sectors are the second largest source of GHG emissions, after the energy sector (~23% of total global anthropogenic GHG emissions)¹, with crop and livestock agriculture making the largest contribution to this share.

On its own, Agriculture represents around 13% of global GHG emissions and around 10% in the EU (430 MtCO_{2eq} in 2016)², making it the EU's fifth largest emitting sector³. Whilst lower than they were in 1990, emissions from agriculture have been increasing since around 2012⁴. This is coupled with a projected decline in the overall land use (LULUCF) sink⁵ – reducing under a business as usual scenario from ~300 MtCO₂ in 2015 to ~260 MtCO₂ in 2050⁶. In those same projections, agriculture emissions are expected to stabilise around 400 MtCO_{2eq} in 2050. Together this would lead to a net increase in emissions from the EU AFOLU sectors of around 140 MtCO_{2eq}.

These increases, which assume agriculture emissions to decline against a current prevailing trend of increasing, might appear modest. Yet they would represent a net increase equivalent to around 3% of the total EU GHG emissions in 2017 (4,483MtCO_{2e}). At the same time the land use sectors are increasingly being seen as one of the saviours for climate mitigation, through the potential land carbon sink.

Sources and notes:

¹ including only CO₂, N₂O, and CH₄ - (12.0 ± 2.9 GtCO_{2eq} yr⁻¹). Source: IPCC (2019) Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R.Shukla, et al, (eds.)]. In press.

² European Commission (2018) in-depth analysis in support of the Commission Communication COM(2018) 773. A Clean Planet for all A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy [Note: only 2% of emissions derived from carbon dioxide (from liming of acid soils and urea applications), whereas 55% of emissions being methane (CH₄, from enteric fermentation and manure management) and 43% nitrous oxide (N₂O, from fertiliser application on soils and manure management).]

³ After the energy, transport, industry, residential and commercial sectors.

⁴ According to projections based on the current levels of animal products consumption, agricultural non- CO₂ emissions are expected to triple their current share and account for a third of total EU emissions in 2050 (Matthews A (2015) Including LULUCF in the EU's 2030 climate policy target [blog post]. <http://capreform.eu/including-lulucf-in-the-eus-2030-climate-policy-target/>).

⁵ Mainly forest land and Harvested Wood Products (HWP)

⁶ As a result of ageing forest stands and increased mobilisation of forest biomass into the bioeconomy²

Should our basic needs be incentivised from EU land?

The services land provides do not always have to be produced in the place that they are enjoyed (e.g. traded commodities or climate mitigation), whereas some do (such as flood alleviation or recreational areas)¹³. Most of our basic needs from land, and essentially our needs for land, fall into the second category and need to be provided in the EU in order to be of benefit to EU citizens.

Yet it is not simply as straightforward as saying that EU citizens can only enjoy or benefit from what is present near to them, for example, a wildlife reserve. With increasingly fast and cheap travel we can visit and enjoy different landscapes within a region, country or across the globe.

Climate mitigation is another example of a service towards which land can contribute but is delivered as a global good and benefits global society wherever it is provided. For example, if a natural carbon sink is established in New Zealand, the benefit of that sink would have a global value, and benefit EU citizens, even though it was not created in the EU or incentivised by EU funds.

There are a number of reasons why it is necessary to incentivise the provision of basic needs from land in the EU, rather than rely on imports or delivery elsewhere.

One reason is that there are global goods which require action by global society, climate mitigation and biodiversity protection are two such goods. They are enshrined in international commitments linked to SDGs, the Convention on Biological Diversity, and the United Nations Framework Convention on Climate Change. The EU has a role and a responsibility to deliver on its share of these commitments.

Another is that some of our most fundamental needs around functioning ecosystems can only be provided on EU land for them to have an impact in the EU. These include the wider set of regulating functions provided by land that deliver clean and abundant water supplies, healthy soils, regulation of wastes, etc. These are necessary to ensure functioning ecosystems and thus

¹³ Hart K, et al. (2012) Land as an Environmental Resource, Report Prepared for DG Environment. Institute for European Environmental Policy.

the continued function of land, regardless of how we prioritise our needs from that land. We cannot import functioning ecosystems.

Goods and services that can be traded need not be produced within the EU so that EU citizens have access to them – for example, food, timber, energy, etc. This is not to say that food, timber and energy are not needed by EU society – they clearly are, yet there are other mechanisms to ensure supply, principally markets.

Whether or not food needs to be produced within the EU is a complex and political question linked to control and security (around the access and supply of food), trade, and the impact of the EU's global food footprint. Regardless, as a market good, there is limited justification for using public money to support food production. There are however some aspects of land-based goods and services linked to food production that are culturally significant, and thus important to recognise when attempting to decide what should be incentivised from land.

These may include certain production systems like the traditional Dehesa or Montado in Spain and Portugal or grazed meadows of the French and Italian Alps. These farmed landscapes have cultural significance and may provide further societal needs or public goods in return. Such production systems highlight the relationship between not only what should be provided from land but also how and where.

Incentivising delivery

Our start point is the need to provide functioning ecosystems, biodiversity and a stable climate in order to support the wider functions, goods and services provided by EU land. Incentivising the delivery of these basic needs will require us to articulate in policy what the priorities are for delivery.

Future policy will need to address the wider scope of rural land and the use of commodities or products (bioresources) obtained from land, to provide coherence between the drivers and the different end uses and policies that drive land use and management.

Focussing public incentives in this way requires a fundamental rethink of the policies that influence land. Here we provide a brief outline of an overall policy architecture for a future subsidy system to incentivise the provision of

common needs from EU land – that will form the discussion in a subsequent paper.

Taking a strategic view of land as a resource is necessary to provide coherence across different societal needs and across policies that incentivise the use of rural land. The core components of this would include:

- **An overarching strategy**, focussed on land use and bioresources – setting the priorities for what can and should be produced from land and what biomass should be used for, in the context of the EU’s sustainability goals and climate ambition, including food, and at different stages in the value chain.

Such a strategy would set the overall priorities (and where appropriate, the locations) for which land use and management should deliver in a synergistic way – enabling it to be target-driven and incentivised on the basis of results. The strategy would make clear the roles of value chain actors, including consumers.

- **A common land use policy** that enables the strategy in practice and supports the activities of land managers. This would provide the tools, incentives and support to enable the ambition of the strategy to be realised, in a coherent way across Europe.

It would necessarily replace the existing CAP and include both agriculture and forestry, as well as other rural land uses, and have powers to act and determine the use of rural land, even in relation to the expansion of urban areas and infrastructure. The policy would include both production and consumption.

Whilst these strategies and a common land use policy could deliver on the EU’s land-related environment and climate goals, they would need to be supported by allied policies and tools addressing trade and export policies. For example, global commodity markets (in which the EU is the largest trader of agricultural commodities) dictate to some extent what the EU produces (exports and domestic consumption) and what it imports¹⁴. In this context, it is important to recognise the importance of sustainable supply chains and

¹⁴ This commodity production is less tied to societal needs and linked much more to demands (inside and outside the EU), such as for out of season fruit or vegetables.

the implications for trade linked to the EU's environment and climate footprint.

Allied policies would include specific amendments to trade and trade agreements; sustainable finance tools where there are clear and defined criteria, metrics and thresholds for when investments and support (public or private) could be made; guidelines around lifestyle choices and diets to enable more informed consumer choices; etc. The full scope and content of these would be developed on the basis of the land use strategy and policy.

Conclusions and an uncomfortable truth

This paper has argued that society has various needs, many of which are provided by land. These needs are not equal, either in their importance or their priority for public support. Humans have basic primary needs – such as food, air, water and shelter, with a series of secondary and tertiary needs.

Yet the needs of society *from* land are different from the needs that we have *for* land. More simply, if the primary need of society *from* land is for food, water and a healthy environment, then the primary need of society *for* land is that it is in a condition in which it can provide those functions indefinitely. This draws attention towards a primary and overarching need *for* land, which is to have healthy and functioning ecosystems, biodiversity and a stable climate from which all other needs *from* land can be derived.

Private needs, such as food, are generally satisfied by markets and are traded globally, yet there are common or public needs that can only be enjoyed locally, suffer from undersupply and require interventions to ensure they are delivered. Public incentives for land-based goods and services should, therefore, be oriented towards only delivering these common goods.

Focussing public incentives in this way requires a fundamental rethink of the policies that influence land. Future policy will need to address the wider scope of rural land and the use of commodities or products (bioresources) obtained from land, to provide coherence between the drivers and use and management of land, forming a guiding framework under which all other relevant policies are developed. This change has urgency, yet there is an inherent need for transitional support as land managers re-orientate and re-tool. A roadmap for systemic change will be essential.

Yet amongst these rational arguments for what land should provide, there is a tension. The footprint of EU demands from land is larger than the area of the EU, considerably so. Modern agriculture has pushed the envelope of production to a point where it is unable to supply commodities in a way that is compatible with the environment and functioning ecosystems. Or at least it has failed to demonstrate its ability to do this at the scale needed to ensure supply is met. It is not in a safe operating space, and it has pushed beyond planetary boundaries in most cases.

The uncomfortable truth amongst this is that to realign land use and functioning ecosystems may very well mean reducing the intensity of production on land and changing the balance of food we produce in order to bring farming and land use in the EU back safely within planetary boundaries. That is unless we move to a new and more radical model of food production entirely! Reducing consumption is one obvious response, but it is hard to imagine how enacting that sort of change on a population of billions could be possible in the time frame required. Equally, if populations continue to grow, then at some point calorific demand will once again increase.

What we can be certain of is that it is essential to bring ecosystems back into equilibrium as a baseline condition if we stand any chance of meeting societal needs, goals and targets, such as curbing global temperature rise or allowing future generations the ability to produce food in a more sustainable way that is compatible with the environment from which it is derived. This will be the first step towards moving EU land use onto a sustainable pathway.



www.ieep.eu

