



NEW TERMINOLOGIES IN SUSTAINABLE FOOD SYSTEMS

SPECIAL REPORT | SEPTEMBER 2020

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The recent drive for sustainability has seen the emergence of a number of new terminologies, including agroecology, agroforestry and urban farming.

The adoption of these new notions into the sustainability discourse has been rapid and has sometimes made new concepts difficult to grasp.

If you have ever felt lost in the sea of sustainable terminologies, EURACTIV sheds light on some of the key emerging themes in this Special Report.

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Farmers need financial reassurance to support uptake of agroforestry

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By *Natasha Foote* | EURACTIV.com



Seen as a “win-win” solution in terms of both economy and ecology, as well as the more obvious benefits of growing trees on farmland, such as producing timber and tree crops, agroforestation also carries considerable environmental benefits. [SHUTTERSTOCK]

In a clear nod to the strategic importance of agroforestry, the term has now cropped up in both the European Green Deal, the European Commission’s roadmap for making Europe the first climate neutral continent by 2050, and the EU’s flagship new food policy, the Farm to Fork (F2F) strategy.

“The Commission will ensure that

Strategic Plans are assessed against robust climate and environmental criteria. These plans should lead to the use of sustainable practices, such as precision agriculture, organic farming, agro-ecology, agro-forestry and stricter animal welfare standards,” the [communication](#) on the Green Deal reads.

Likewise, the F2F strategy specifies

that “new ‘eco-schemes’ will offer a major stream of funding to boost sustainable practices, including agroforestry.”

Agroforestry is not always fully understood, but it can be defined as the integration of woody vegetation, crops and/or livestock on the same area of land, either via the incorporation of planting trees on agricultural land or

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introducing agriculture into existing woodland or orchards.

There are currently around [20 million hectares](#) of agroforestry in the EU, according to EURAF, who [estimate](#) that close to 90% of the European grassland area could include silvopasture practices, which integrate trees, forage, and pasture, and that more than 99% of the European arable land would be suitable for silvoarable practices.

Seen as a “win-win” solution in terms of both economy and ecology, as well as the more obvious benefits of growing trees on farmland, such as producing timber and tree crops, agroforestation also carries considerable environmental benefits.

This includes contributing to flood protection, carbon capture and storage, regeneration of soils and biodiversity.

Agroforestation therefore holds huge potential for contributing to the sustainability goals and the aims of the EU Green Deal, according to Gerry Lawson, a forester and member of the European Agroforestry Federation (EURAF), who told EURACTIV that more must be done to support the uptake of the practice across the EU.

Lawson stressed that a key barrier for farmers is that they lack guarantees that planting trees on their land will not jeopardise direct payments from the Common Agricultural Policy (CAP), either now

or in the future.

“This is a real concern for farmers” he emphasised, explaining that this stems from a limitation of tree density to 100 trees per hectare in the current CAP. This limit has made farmers wary of establishing, promoting and using agroforestry practices.

The limit was originally designed to guarantee agricultural production but it does not account for the fact that significant agricultural production can be obtained under and between trees.

However, Lawson explained that, according to a European Council [working paper](#), in the new CAP, member states will have complete flexibility to make full direct payments on fields containing agroforestry, but that this flexibility has been poorly communicated with farmers.

“In the future, according to the proposal, member states would have the leeway to ensure agricultural area under agroforestry is fully eligible when justified based on the local specificities (e.g. density/species/size of the trees and pedo-climatic conditions) and the value added of the presence of trees to ensure sustainable agricultural use of the land,” the paper reads.

But this is something that has not yet been made explicit to farmers, according to Lawson.

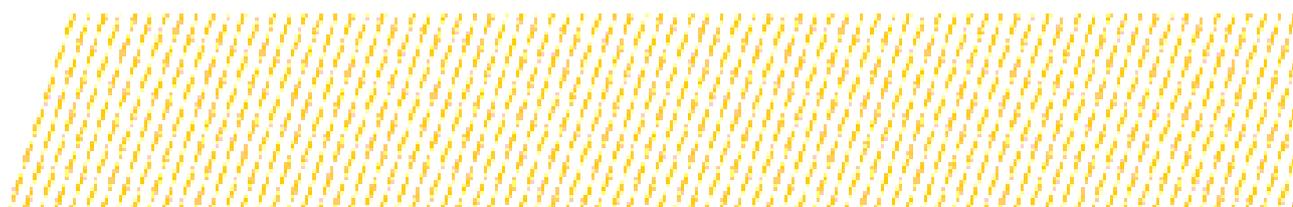
“This flexibility must be made clear to farmers and reassurance must be offered that planting trees on their land means farmers won’t be financially penalised if you want to encourage farmers to engage in agroforestry,” he said.

Lawson also stressed that there were issues when it comes to proper monitoring of agroforestry in the EU.

Speaking of the Commission’s [farm sustainability tool](#) (FaST) that is currently in development, he highlighted that work must be done to ensure that the mapping tool includes the impact of farm-trees on nutrients and greenhouse gas emissions.

FaST is designed to become a world-leading platform to support sustainable and competitive agriculture based on space data.

“None of the Horizon 2020 projects for FaST include trees in their work, which means that there is a huge research gap,” Lawson said, adding that more work must be done to liaise with the EU research project to ensure that the benefits of agroforestry are properly accounted for.



Handling soil with care: Conservation Agriculture's role in post-2020 CAP

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By *Gerardo Fortuna* | EURACTIV.com



Corn plantation with no tillage technique. [SHUTTERSTOCK]

Despite being taken into consideration only slightly in the EU's current farming subsidies programme, Conservation Agriculture is set to play a central role in the green architecture of the post-2020 Common Agricultural Policy (CAP).

Conservation Agriculture (CA) lends itself easily to misinterpretations, as the term 'conservation' often indicates activities involving the preservation and restoration of degraded natural habitats to improve biodiversity.

However, although CA also promotes biodiversity, it mostly addresses issues referring to a different phenomenon: soil degradation.

Soil organic matter has been increasingly depleted thanks to land-use intensification and monocultures, while the use of heavy machinery stresses the soil by causing ground compaction.

CA works to address this via a suite of farming practices designed to avoid physical degradation, such as growing a permanent protective plant cover on the soil and advocating

for an agricultural production system based on a total or partial reduction of ploughing and tilling.

According to the European Conservation Agriculture Federation (ECAAF), agronomic practices included in CA are based on three core principles to be fulfilled concomitantly: minimum soil disturbance, maintenance of permanent soil covers and cropping system diversity.

Advocators argue that these practices can bring economic savings for farmers in terms of energy efficiency, while also contributing

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to decreasing greenhouse gases emissions and building resilience of the agricultural system to climate change.

NO-TILLAGE AND SOIL COVER

Among the CA's practices, no-tillage and groundcovers are the most widely known.

No-till, or reduced-till, agriculture is the practice of planting crops without tilling the soil, which is the conventional way of preparing the soil for planting by digging, stirring, and turning it over.

Although no-tillage and reduced tillage can help prevent run-off and erosion, the practices have been slow to take off in Europe.

According to the European Commission, reduced tillage or conservation tillage is practised on around 21.6% of the arable land in EU, while no-tillage is applied to only 4% of arable land.

In a [parliamentary question](#) filed last March, the Bulgarian MEP Atidzhe Alieva-Veli asked the EU executive whether it is going to promote the implementation of 'no-till technology' by including it as a green measure in the post-2020 CAP.

For the liberal lawmaker, "no-till technology is an approach that should be encouraged as a regenerative form of agriculture that ensures not only high agricultural productivity but also soil regeneration."

Replying to Alieva-Velli, the

Commission recognised the environmental and climate-related benefits of reducing mechanical disturbance of the soil, adding that the CAP already supports specific practices aimed to protect soil against degradation, including minimum or zero tillage, conservation of crop residues and green covers.

As for ground-covers, they refer to the periods of the year when the soil is covered by residues or crops, including catch or cover crops.

Cover crops are efficient in reducing soil and nutrient loss by keeping the land continuously covered with vegetation during the whole year.

In the EU-28 during winter of 2010, 44% of the arable area was covered with normal winter crops, 5% with cover or intermediate crops and 9% with plant residues, while 25% was left as bare soil and 16 % of the arable area soil cover was not recorded.

PUTTING THE 'CA' IN CAP

In the EU's current farming subsidies programme, a number of measures relevant to CA were included in the rural development policy, known as the CAP's second pillar.

Member states and regions can include these measures in their rural development programmes according to their specific needs and priorities.

Some aspects related to the main principles of conservation agriculture were also supported under Horizon2020, the EU's

funding for research, and the European Innovation Partnership on agriculture productivity and sustainability.

However, the real step forward for CA's uptake is expected in the post-2020 CAP reform, as conservation agriculture practices can be promoted under the new system of eco-schemes, the 'green architecture' of the programme.

Eco-schemes are available under the direct payments framework, which constitutes the biggest chunk of EU farming funds.

CA practices are listed in three out of ten 'Good Agricultural and Environmental Conditions' (GAECs) of the new eco-scheme and include rotation, no ploughing, soil cover, winter crops and crop rotation.

The eco-schemes aim to reward farmers for going even further in the implementation of sustainable agricultural practices, beyond the mandatory requirements set by conditionality.

As proposed by the Commission in the future CAP, these types of practices can contribute to meeting the enhanced environmental and climate ambitions of the agricultural policy.

As in the previous programme, CA practices could be promoted through environmental and climate management commitments available under the rural development framework.

Europe revives carbon farming but without access to carbon markets

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By *Natasha Foote* | EURACTIV.com



Carbon farming is a set of agricultural practices that result in increased storage of atmospheric carbon in the soil. [SHUTTESTOCK]

The concept of soil carbon sequestration, a cornerstone of regenerative farming, is regaining strength as a key measure in both climate mitigation and adaptation.

The potential of “carbon farming” to sequester CO₂ emissions while regenerating degraded agricultural soil has been viewed positively by

EU lawmakers in the attempt to scale up the EU’s ambition for obtaining climate neutrality by 2050.

In order to do so, the Commission proposed to increase the 2030 target for emission reduction from 40% to 55% and vowed that all legislation will be revised to make it fit for purpose.

Crops are natural carbon “sinks”

for carbon dioxide, removing the equivalent of around 51 billion tonnes of CO₂ from the atmosphere each year and storing them in the topsoil.

Agricultural soils in the EU contain around 14 billion tonnes of carbon in the topsoil, which is considerably more than the 4.4 billion tonnes of greenhouse gases (GHG) emitted annually by all the EU’s 27 countries.

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At the same time, carbon sequestration has the effect of restoring organic matter in cropland soils, a regenerative 'gift' that can boost soil fertility biologically.

And as a regenerative practice, 'carbon farming' has been included among the main Good Agricultural and Environmental Conditions (GAECs) of the eco-scheme, the new green architecture in the EU's post-2020 Common Agricultural Policy (CAP).

In particular, GAEC 2 aims to protect carbon-rich soils such as wetland and peatland, considered among the most effective carbon sinks.

According to the CAP reform proposal, GAEC 2 will be applied to all eligible agricultural land but member states will have to precisely identify peatland and wetland areas by establishing specific cartography at land parcel level.

Furthermore, rewetting techniques to remedy past degradation of drained peatlands, [paludiculture](#) or other agricultural practices resulting in carbon sequestration in these areas could be financially supported with additional CAP payments via eco-schemes and rural development interventions.

However, this new push on carbon sinks is seen by some as a smokescreen for the overall ambition on climate targets.

Environmental campaign groups have denounced the Commission's

plan to include soil carbon sequestration in the climate target, saying this was "an accounting trick" to meet the 2030 goals.

"Relying on forests to reach climate targets sends the wrong signal that it's OK to keep polluting because the land will absorb it," said Sam van den Plas, policy director at Carbon Market Watch, an environmental NGO.

In Europe, forests are currently a net carbon sink because they take in more carbon dioxide than they emit. Globally, oceans and forests are the two biggest carbon sinks.

CARBON MARKET TABOO

The plan to store more carbon on European farmlands and forests should be pursued through a "robust carbon removal certification scheme," the recent [update of the European Commission's Climate Law](#) reads

However, the increase of the GHG reduction target to at least 55%, would keep the agricultural and land-use sector outside the bloc's carbon market – the Emissions Trading Scheme (ETS) – the Commission has informed.

The EU executive only plans to overhaul several pieces of legislation by June 2021, such as the Land Use, Land Use Change and Forestry regulation (LULUCF) and the Effort Sharing regulation.

European farmers have so far been prevented from participating in carbon markets, which would

allow them to get paid for storing carbon in their farmlands by trading greenhouse gases.

In order to overcome the carbon markets taboo, the European Parliament's Agriculture Committee (COMAGRI), included proposals for a soil carbon sequestration scheme supported by establishing a separate trading scheme for negative emissions in its opinion on the Climate Law.

The importance of removals or negative emissions is paramount as currently removals and emission reductions are treated equally in carbon markets.

However, a ton of carbon removed from the atmosphere ought to be priced differently from a ton of carbon that is not emitted into the atmosphere, say EU lawmakers.

"From a political point of view, I believe the Commission should explore the possibility of establishing a separate trading scheme for negative emissions," said Asger Christensen, the liberal MEP who drafted the opinion.

"That is an important message in our opinion, because it might generate substantial climate finance and benefit climate, environment, and biodiversity."

Rewarding farmers for ecological services could help protect biodiversity

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By Lucie Duboua-Lorsch | EURACTIV France



The idea of paying land users - farmers, forest owners or managers - for the service they provide to the environment, has become a hot topic both in Europe and France. [EPA-EFE/HARISH TYAGI]

As the World Summit on Biodiversity opens on Wednesday (30 September), new measures to halt its decline are being discussed, including the concept of payments for environmental services, which is currently widely debated in France and the EU, [EURACTIV France reports](#).

At the summit on biodiversity on Wednesday, diplomats will be confronted with the fact that the number of vertebrate populations has decreased by two-thirds between 1970 and 2016, according to the Living Planet Index.

The atmosphere at the summit will be all the heavier as none of the twenty objectives adopted at the last

Convention on Biological Diversity for 2011-2020 have been achieved, while only six will be partially achieved by the end of 2020.

In its Living Planet 2020 report, World Wildlife Fund urges states to step up conservation efforts, reduce animal protein consumption by 50%, combat food waste and, above all, transform their agricultural model because “agricultural production accounts for 80% of global deforestation, 70% of freshwater use and 70% of the loss of terrestrial biodiversity.”

Numerous proposals for reform are being considered.

The idea of Payments for Environmental Services (PES),

whereby land users – farmers, forest owners or managers – are paid for the service they provide to the environment, has become a hot topic both in Europe and France.

For instance, France Stratégie mentioned it in its report on the economic and environmental performance of agro-ecology, while even France’s Economic Council presented the idea in its September note.

A DEVELOPING SYSTEM

Yet payments for environmental services are not new.

“The first example of PES dates back to 1930. At the time, a US federal

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state programme was in place to pay farmers on certain types of farms to preserve the landscape,” said Yann Laurans, director of the biodiversity and ecosystem programme at the Institute for Sustainable Development and International Relations (IDDRI).

While PES are highly developed in South America to preserve tropical forests, in Europe, they mainly take the form of aid to farmers.

For instance, Swiss agricultural policy has been paying pastoralists for their maintenance of permanent natural meadows since 2014.

“In France too, such measures exist”, Laurans pointed out. “As early as 1990, industrialists, who exploit drinking water sources, established contracts with farmers in the catchment areas of the springs to reduce the water’s nitrate levels”.

Although these were mainly private contracts at the time, the idea of developing PES-style public contracts have started to be discussed during France’s last presidential elections.

“It was a campaign commitment by candidate Macron, aimed in particular at remunerating farmers in mountain areas. The idea finally turned into a request for the allocation of funds from the water agencies,” said Laurans.

Since February 2020, €150 million have indeed been mobilised by the French water agencies to pay for environmental services provided by farmers.

However, while the measure is quite innovative, its range is currently too small to have a real impact on biodiversity.

INTEREST AT EU LEVEL?

The future Common Agricultural Policy (CAP) will introduce new “eco-schemes”, which, like the PES, aim to remunerate farmers engaged in sustainable practices.

“These practices could include the implementation of environmentally friendly production systems, such as agro-ecology, agro-forestry and organic farming,” according to a report published by the European Commission.

It adds that the rural development framework also includes commitments on environmental and climate management, which aim to compensate farmers and other beneficiaries for voluntarily committing to sustainable practices.

Given that the implementation of PES remains complex, it is unclear whether such a measure could halt the decline of biodiversity across Europe.

“If these schemes do not develop further, it is because they require a lot of work. PES model contracts are drawn up on a case-by-case basis and must be perfectly adapted to local circumstances,” said Laurans.

“It is very difficult to do this effectively and on a large scale. If you pay everyone a lump sum for something you don’t have the power to control, it won’t work,” he added.

Another difficulty with this kind of payment system is its temporality. To have any form of real impact, such aid must be spread over long periods of time.

However, as Aurélie Trouvé, an economist at AgroParisTech, pointed out in her article, “the eco-scheme will have to follow strict rules. The aid must remain annual, decoupled from production and paid per hectare.”

According to her, however, “the European Court of Auditors stresses in its report that ‘it is necessary to commit to several years to produce certain environmental and climatic benefits.’”

€20 BILLION PER YEAR FOR BIODIVERSITY

Although it still needs to be fleshed out, the “eco-scheme” has opened the debate on the conditions for obtaining aid allocated under the CAP.

Moreover, the European Commission presented in May its ambitious biodiversity strategy, which foresees a 50% reduction in the use of pesticides by 2030, the planting of three billion trees, the creation of protected areas representing at least 30% of the land and 30% of the seas in Europe, and all this with legally binding nature restoration objectives.

According to the Director of IDDRI’s Biodiversity Programme, “PES are not a panacea” but “interesting tools which must be accompanied by other measures.”

'Urban Farming': Are rooftop fields the future?

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By Florence Schulz | EURACTIV.de | translated by Sarah Lawton



Blueprint of a planned roof garden in Berlin. Up to two million square meters of roof space could be used for plant cultivation in Germany's capital alone. But the investment costs are still relatively high. [© Dachfarm Berlin]

Large cities offer millions of square meters of unused roof space. Why aren't they being converted to cultivate crops? The potential seems enormous, but "urban farming" is still in its infancy, [EURACTIV Germany reports](#).

Salad from the roof of the supermarket or tomatoes from the facade of a high-rise building? What sounds like fiction is already reality in some cities, albeit on a small scale. Urban farming is not a new concept, but one that has hardly been exploited to date.

Cultivating fruits and vegetables could experience a boom in the coming decades. After all, the human population is growing rapidly and is increasingly settling in cities. More than half of this population is already living in cities, and by the middle of

the century, around 66% of people are expected to be living in cities – out of a world population of 9.7 billion.

More food also means correspondingly more demand for farmland, but this already accounts for 42% of global land area.

Another problem is transport. According to the Fraunhofer Institute, around 12% of agricultural emissions are attributable to this alone.

URBAN GARDENS FOR TIMES OF CRISIS

Could urban farming be part of the solution? One thing is certain: The idea is not new. Until the 19th century, cultivating crops was common practice within cities. When they disappeared, private allotment gardens spread.

Interestingly, a new trend is emerging: self-sufficiency is booming in the city, especially in times of crisis.

Often with success, as the British example shows: During World War Two, the government launched the "Dig for Victory" campaign. As a result, up to 50% of fruit and vegetables were produced by the population in allotment gardens.

In Spain, during the economic crisis, the proportion of allotment plots and community gardens increased six-fold between 2006 and 2014.

Apart from private cultivation, however, there are hardly any places where agriculture takes place on a larger scale in cities.

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ROOF GARDENS OF THE FUTURE USE DOMESTIC HEAT AND RAINWATER

In Europe, urban farming is still in its infancy.

“Every morning, I ask myself why not many more cities invest in it,” says Jörg Finkbeiner, architect and co-founder of the Berlin network ‘[Dachfarm](#).’ The consortium consists of gardeners, agroscientists and architects, who together plan greenhouses for growing crops in the city.

However, Finkbeiner believes that this cannot be the case with urban farming, because most buildings are not statically suitable for it: “If you put crops in tubs on a roof and water them, you can quickly achieve 300 kilograms per square meter. Most buildings can’t support that.”

Dachfarm, therefore, relies on roof structures that are as light as possible and are built on top of existing buildings. The plants grow either in substrates such as pumice, lava or compost, as these are much lighter than soil, or in hydroponic systems, where the nutrient supply is provided directly via a nutrient solution.

The glass gardens are designed to operate as efficiently as possible by using the waste heat from the building, collecting rainwater or recycling greywater from households

With Dachfarm, we want to show that the increasing amount of pavement in cities and the loss of arable land do not contradict themselves, Finkbeiner told

EURACTIV.de.

Other advantages are that roof gardens can be used to produce close to the consumer and “on-demand,” so to speak, eliminating long transport routes or the need to store food. But not every type of agricultural cultivation is structurally possible, Finkbeiner points out. Besides, there are many open questions particularly in terms of building codes.

BOLOGNA AND AMSTERDAM WITH GREAT POTENTIAL

For supermarkets or restaurants, the own roof garden could be an attractive concept.

However, it is not worthwhile for everyone, because investment costs are still comparatively high and the food harvested in this way is more expensive.

A 2017 [study](#) by the European Parliament’s Scientific Service (EPRS) also came to the same conclusion: urban agriculture is “associated with considerable ecological, social and health benefits,” but can increase biodiversity and counteract the heating of cities.

However, this is also associated with high operating costs, for example for electricity, and is in competition with other types of use, for example for solar energy systems. In addition, the report says, tensions between “traditional and innovative farmers” and an increase in land values are also concerns.

There are no reliable figures on how widespread urban farming is in

the EU. However, according to the ERPS evaluation, the potential could be huge, depending on the city.

In Bologna, for example, more than three-quarters of the vegetables consumed there could be grown in roof gardens. In Amsterdam, where currently only 0.0018% of food is produced locally, up to 90% of the fruit and vegetables consumed could be grown.

COMMISSION HAS NO PLANS SPECIAL FUNDING

These figures seem optimistic, as they would probably require strong political support. In the current EU Common Agricultural Policy, urban farming projects can theoretically be financed with funds from both pillars as well as from the European Social Fund and the Regional Development Fund, but this is at the discretion of the member states.

Further support is not in sight, as the Commission “currently has no plans to coordinate strategies for urban agriculture beyond different levels of government,” according to the [response](#) EU Agriculture Commissioner Janusz Wojciechowski gave in the European Parliament in May.

However, a planning study on the topic is currently being prepared. This should be completed this autumn.





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