SUSTAINABLE AGRICULTURE,

WITH A LITTLE HELP FROM OUR NATURE

Green infrastructure integration into the agriculture sector

CEEweb for Biodiversity

THE CHALLENGE

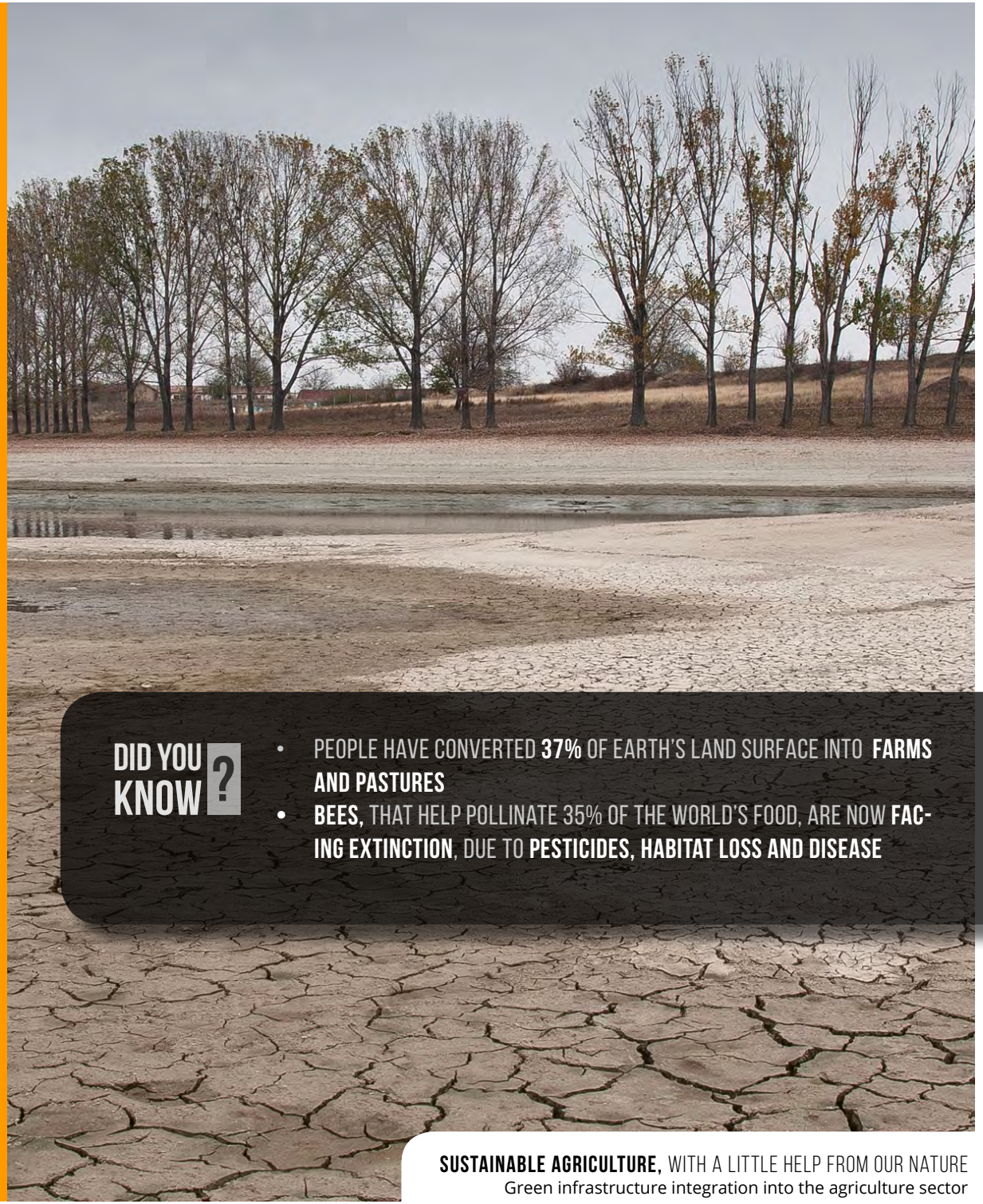
Decades of intensive farming practices have taken its toll on environment and people. Its short-term benefits have come at an extremely high price: the **loss of soil** at an alarming rate, **freshwater resources polluted** by excessive use of pesticides and fertilisers, with unhealthy levels of ammonia, fine dust and methane from animal manure and synthetic fertilisers, **food contaminated** by pesticides.

Nature is suffering the consequences of unsustainable farming practices: agriculture is thought to cause around 70% of the projected loss of terrestrial biodiversity. The global decline in insect pollinators, which sustain around 35% of globally cultivated crops, is caused mostly by the use of pesticides in agriculture.

Because agriculture relies heavily on nature, unsustainable practices initiate a vicious circle where both people and nature end up as losers.

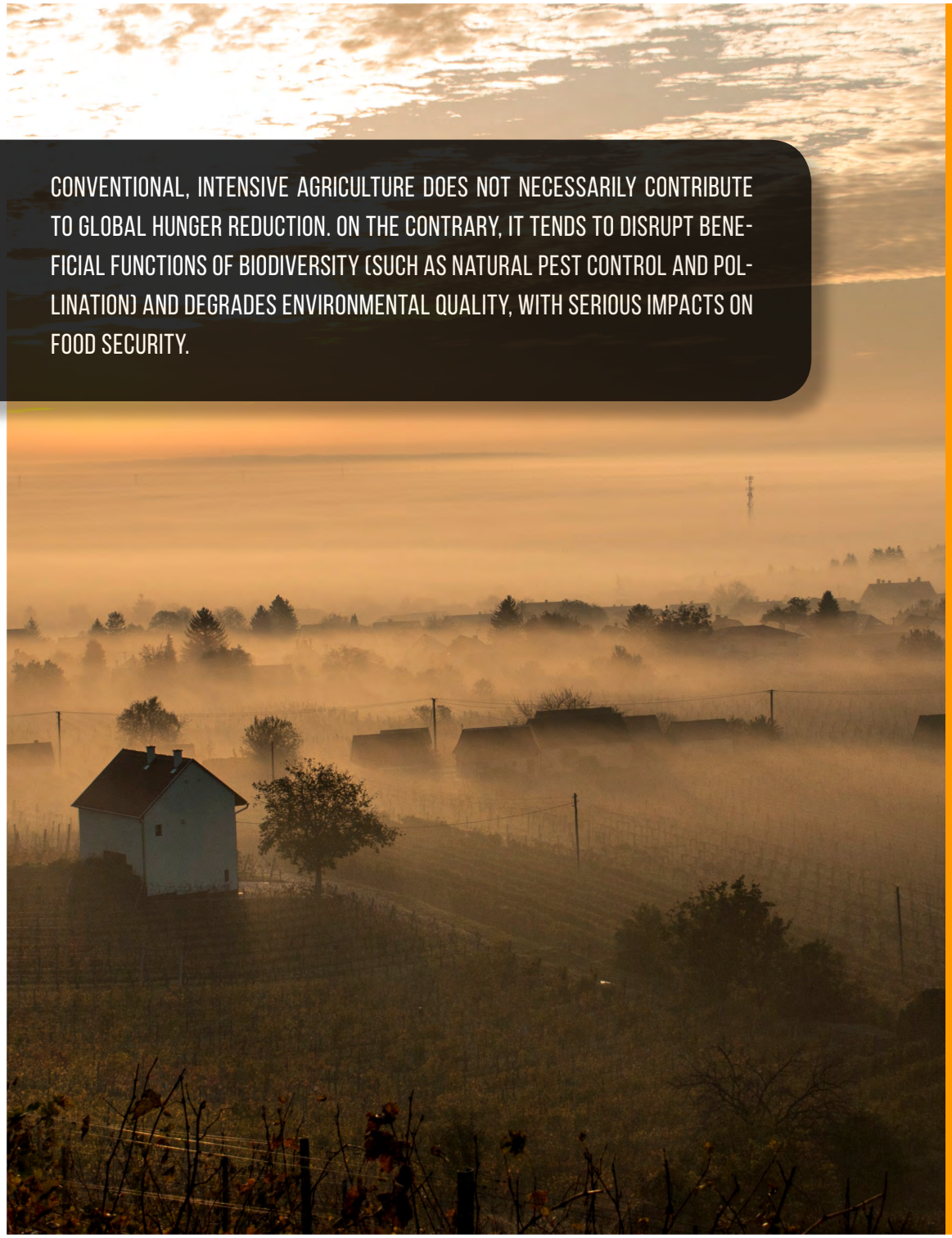
Intensive farming has serious implications for human **health and well-being**. Pesticides have been linked to an increased risk of diseases such as cancer, particularly among farmers.

Intensive agricultural practices are also drivers of **climate change** – the sector is responsible for around 10% of total greenhouse gas emissions in the EU. In return, farmers are among the most vulnerable groups to the effects of climate change, since their yields are heavily influenced by intense precipitation, droughts, fluctuating temperatures and other extreme weather events. The livelihoods of farmers, especially small-scale farmers, are thus now more insecure than ever. This leads to increasing land abandonment, growing urbanization rates and monopolization of the sector by a few big agricultural businesses and further intensification of current practices.



DID YOU KNOW?

- PEOPLE HAVE CONVERTED **37%** OF EARTH'S LAND SURFACE INTO **FARMS AND PASTURES**
- **BEES,** THAT HELP POLLINATE 35% OF THE WORLD'S FOOD, ARE NOW **FACING EXTINCTION**, DUE TO **PESTICIDES, HABITAT LOSS AND DISEASE**



CONVENTIONAL, INTENSIVE AGRICULTURE DOES NOT NECESSARILY CONTRIBUTE TO GLOBAL HUNGER REDUCTION. ON THE CONTRARY, IT TENDS TO DISRUPT BENEFICIAL FUNCTIONS OF BIODIVERSITY (SUCH AS NATURAL PEST CONTROL AND POLLINATION) AND DEGRADES ENVIRONMENTAL QUALITY, WITH SERIOUS IMPACTS ON FOOD SECURITY.

HOW CAN NATURE HELP?

It has been known for centuries that **nature and agriculture nourish each other**. Before the intensive agriculture era, farming areas were not only food sources for human population, but also areas thriving with diversity of plants and animals. Farmers were the custodians of nature: their livelihoods were depending on the wellbeing of their natural surroundings and the other way around.

This concept is exactly what a **sustainable farming system** relies on – farmers maintain native plants and trees and create favourable conditions for indigenous animal species, ensuring their survival, and in return they obtain multiple benefits that ensure long-term agricultural practices, healthy and diversified nutrition and income for their families.

Well-preserved nature is a prerequisite for a sustainable farming system: it ensures appropriate nutrient cycling, pollination of crops, pest control, water regulation and preservation, and soil protection.

It is clear that a healthy and diverse natural environment is essential to food security, sustainable livelihoods, increased resistance to natural disasters and ability to recover from them, adequate nutritional requirements and to obtaining long-term benefits from agricultural practices.

Unhealthy diets are the number one risk factor for death and disease in the EU, but there is an enormous potential in sustainable agriculture for **contributing to healthier lifestyles** by producing healthy, non-contaminated fresh food. Moreover, sustainable agriculture is crucial for the **development of rural economies** as well as the rural landscape, and for preventing rural abandonment, especially in the Central and Eastern European region.

WHAT IS GREEN INFRASTRUCTURE?

Green infrastructure (GI) is a term used to describe a network of green spaces conceived to **provide multiple and significant benefits both for people and for nature**. These green spaces, called green infrastructure elements, are present both in urban and rural settings and can range from small-scale spaces such as hedgerows, stone walls and green roofs to very large areas such as high nature value farmland, multi-use forests and Natura 2000 areas. The GI concept also includes the so-called "blue" spaces, like ponds and streams.

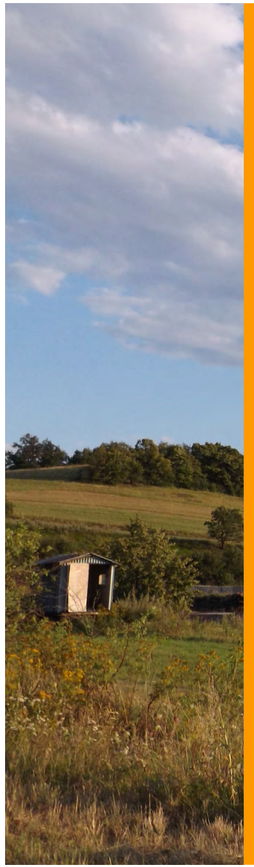
When green infrastructure elements are combined into a network, the multiple benefits that nature provides for all living things grow exponentially. The network also provides conditions for a more structured approach in the management of GI areas.

Green infrastructure addresses climate change, energy efficiency, increasing human health and well-being issues and loss of social cohesion. It allows for **significant savings** as the services do not have to be delivered by artificial structures which would otherwise have to be deployed, like in the case of natural barriers and floodplains for flood protection. The use of GI can thus enhance the profitability of farming activities or provide extra sources of income for rural communities.

Green infrastructure is also important in supporting the **connectivity between urban and rural areas**. If nature is burdened with too many barriers that were built without taking into consideration the provision of nature's services for people, such as dense road networks, river dams or inadequately positioned power lines, then nature is not able to deliver its benefits for people and the environment. Without properly functioning ecosystems, extreme events, such as floods and droughts are more difficult to handle. GI **provides this missing link** by connecting different species and their living space.

GREEN INFRASTRUCTURE:

- Responds to climate change, energy efficiency, loss of social cohesion
- Benefits human health and well-being issues
- Connects urban and rural areas
- Ensures properly functioning ecosystems
- Provides missing link between species and their habitats



SUCCESS STORIES

SUSTAINABLE AGRICULTURAL PRACTICES OFTEN CONTRIBUTE TO CREATING CONNECTIVITY BETWEEN DIFFERENT GREEN INFRASTRUCTURE ELEMENTS AND THUS SUPPORT THE PROVISION OF MULTIPLE BENEFITS FROM NATURE

NEUSIEDL/FERTŐ LAKE COOPERATION

This cooperation was developed within the framework of the European Green Belt Project. The Fertő-Hanság National Park (Hungary) and the Neusiedler See National Park (Austria) work closely with landowners to ensure environmentally friendly livestock grazing. In almost all parts of the trans-boundary protected area, on either side of the border, land use has been redirected towards non-industrial and traditional practices. Protection measures include renting grasslands to horse keepers, renting reed beds and shores of the soda lakes to reed harvesting companies, combining small plots of pasture land and renting them to cattle farmers, maintaining park-owned herds (of e.g. Hungarian Grey cattle, white donkeys, Przewalski's horses) and preservation of cultural landscapes.

WALES, PUMLUMON

Pumlumon is an area of 40,000 hectares in the Cambrian Mountains of Wales, containing 5 important rivers, mountains and rare upland habitats and species. The land is mostly used for agriculture, through livestock activities. Because of intense sheep grazing, the ecosystem has been degraded, with loss in biodiversity and increase in flood due to soil degradation.

The Pumlumon project is a pioneering and scientific project led by the Montgomeryshire Wildlife Trust, launched in 2004 to revive the environment and economy of the Welsh uplands through long-term sustainability. The project has eight interconnected elements that aim to restore biodiversity, connect nature and people in a mutually beneficial relation, and to promote sustainable use of ecosystem services. That includes activities such as:
- the restoration of over 250 ha of peatlands and acid grassland by building 2km of hedgerows and planting 1ha of upland woodland;
- changing grazing patterns in the area by replacing sheep with cattle at low densities and moderate intensities in order to increase the number of plant species and help break the hard soil;
- re-creation of six different types of habitats.

The idea was successfully implemented on a pilot area of 500 hectares. The project has resulted in numerous environmental and economic benefits: carbon storage, reconnecting and recreating habitats, storing flood water, bringing back wildlife, improving landscape through ecologically sensitive grazing, and increasing green tourism - 35,000 extra visitors and 350,000£ of income per year.

HIGH NATURE VALUE FARMING

High Nature Value (HNV) Farming represents a low-intensity farming method, which produces agricultural output and at the same time creates a habitat for wildlife and helps to preserve and enhance biodiversity. Three types of HNV farming are described by the European Environmental Agency:

TYPE 1: Farmland with a high proportion of semi-natural vegetation.
TYPE 2: Farmland with a mosaic of low intensity agriculture and natural and structural elements, such as field margins, hedgerows, stone walls, patches of woodland or scrub, small rivers etc.
TYPE 3: Farmland supporting rare species or a high proportion of European or world populations.
Much of the EU's HNV farmland is located on less accessible uplands and constitutes extensive pastures. Although it is difficult to formulate precise criteria for HNV farmland, it is estimated that in Bulgaria, Greece, Spain, Italy, Cyprus, Austria, Portugal, Romania, Slovenia and Finland over a third of arable land is HNV farmland.

High Nature Value farming requires the maintenance of traditional non-invasive agricultural practices such as manual mowing of meadows, respecting fallow periods, using natural fertilizers and biological pest control in order to ensure the persistence of valuable biodiversity habitats associated with moderate agricultural use.

LEARN MORE!

- CLIMATE CHANGE: PARIS AGREEMENT
- SUSTAINABLE DEVELOPMENT GOALS
- EU BIODIVERSITY STRATEGY 2020

WHAT CAN YOU DO?

- Promote the benefits of green infrastructure for agriculture and farmers. For this, carry out capacity building, education and awareness-raising among farmers;
- Enable and support farmers (simpler access to information, information collection on GI benefits and relevant measures) to build green infrastructure on their fields;
- Present and promote local actions for sustainable agriculture, such as local markets, public spaces available to create community gardens or allotment gardens, and general examples of GI, both at urban and rural scale;
- Educate about farming in Natura 2000 sites;
- Contribute to reach EU's climate change, sustainability and biodiversity targets.

CURRENT EU POLICIES AND FUNDING POSSIBILITIES FOR INTEGRATING GREEN INFRASTRUCTURE AND AGRICULTURE

COMMON AGRICULTURAL POLICY (CAP)

is the agricultural policy of the European Union. It consists of two components (or "pillars"):

Pillar 1 of CAP (consists of the Common Organization of the Markets and the Direct Payments to Farmers) includes a series of greening measures, according to which each farmer receives payment per hectare for using climate and environment-friendly farming practices (crop diversification, maintaining existing permanent grasslands and creating and/or maintaining an ecological focus area of at least 5% of the arable area). **Pillar 2** (also known as the EU Rural Development Policy) includes a series of environmental and climate measures (Natura 2000 payments, payments for organic production and environment/climate related investments).

The payments from the CAP are funded through the **European Agricultural Guarantee Fund** (EAGF) and the **European Agricultural Fund for Rural Development** (EAFRD). The EAFRD sets in place a frame for EU Member States to design and develop their **Rural Development Programmes** (RDPs) in a way that those fit with their cultural, agriculture and forestry situation. Restoring, preserving and enhancing ecosystems related to agriculture and forestry and promoting resource efficiency and supporting the shift toward a low-carbon and climate-resilient economy in the agriculture, food and forestry sectors are among the six common EU priorities for the development of RDPs.

In order to support the deployment of green infrastructure on national level, Member States should choose within the RDP measures those that support the development of GI and the enhancement of benefits of nature for people. This, in return, will also serve the United Nations Sustainable Development Goals and the Paris Climate Change Agreement goals.

For more information on how farmers in your country can apply for CAP funding, please consult your RDP or contact CEEweb for Biodiversity for more details.

NATURA 2000 is the European network of preserved land and protected areas that aims to protect the most threatened and valued species and habitats in the EU. These include **63 agricultural habitats**, such as natural and semi-natural grasslands and wooded pastures and meadows. They are present at about 20% of terrestrial Natura 2000 sites and depend strongly on the continuation of low-intensity farming practices, such as hay-making or extensive sheep grazing. Such activities can be funded under CAP payments.

CURRENT EU POLICIES AND FUNDING POSSIBILITIES FOR INTEGRATING GREEN INFRASTRUCTURE AND AGRICULTURE

EUROPEAN REGIONAL DEVELOPMENT FUND (ERDF):

Thematic objective 5 - promoting climate change adaptation, risk prevention and management - it is possible to have dedicated investments for adaptation to climate change which can include developing green infrastructure to ensure local/regional adaptation to climate change. Also, this thematic objective enables developing GI elements for protection from natural disasters such as floods, which can be highly relevant for agriculture. The same objective is present in the **Cohesion Fund** (CF) as well. **Thematic objective 10** - investing in education, skills and lifelong learning by developing education and training infrastructure - can help developing capacities for GI solutions in support of sustainable agricultural practices.

COMMUNITY-LED LOCAL DEVELOPMENT (CLLD):

is an EU territorial cohesion tool funded through EAFRD, ERDF and ESF. It supports development at local level as part of the EU Cohesion Policy 2020. It encourages local communities to develop integrated bottom-up approaches in circumstances where there is a need to respond to territorial and local challenges. This allows to tackle current challenges in agriculture at local level and can lead to developing GI-based solutions.

In order to access these funds, please check the relevant **Operational Programme** (OP) in your country or contact CEEweb for Biodiversity for more info.

WHERE CAN I FIND FURTHER INFORMATION?

CEEWEB FOR BIODIVERSITY has vast experience in all aspects of green infrastructure, including policy and project development, providing training for stakeholders and implementing projects at local, national and international level. This experience is further maximized and enhanced through our network of non-governmental organizations in Central and Eastern Europe. We have collected extended knowledge on green infrastructure and its beneficial role for the development of sustainable agricultural practices.

You can consult our Green Infrastructure Hub with a large number of articles and videos at www.ceeweb.org/green-infrastructure/
or you can contact our *Biodiversity Policy Officer*
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GREEN INFRASTRUCTURE INTEGRATION INTO THE AGRICULTURE SECTOR

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CEEweb for Biodiversity

CEEweb for Biodiversity is a network of non-governmental organizations in the Central and Eastern European region working for 20 years in 20 countries. Our mission is the conservation of biodiversity through the promotion of sustainable development.

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This publication is produced with support of the European Union. The information and views set out in it are those of the authors and do not neccesarily reflect the official opinion of the European Union.