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Recommendations for possible objectives of a future LIFE fund supporting climate change mitigation and adaptation targets

Prepared for Unit A2 "Climate finance and deforestation" of European Commission DG Climate Action

CEEweb for Biodiversity¹, as an organization focusing primarily on biodiversity issues, has the mission of promoting the understanding on the deep interrelation between sustainable development, climate change and biodiversity, and facilitating coherence between the policies in these fields.

This document contains the collected views and recommendations of member organizations of CEEweb on how the link between climate change and biodiversity targets could be addressed in concrete objectives of future EU funds, especially the LIFE fund.

The role of biodiversity and ecosystems in a changing climate

Healthy ecosystems often offer cheap and ready-to-use solutions mutually beneficial for the challenges of climate change and biodiversity loss. These win-win solutions are safe and work locally even if the international efforts to halt climate change might fail (so-called no-regret options). In most cases they are even much cheaper than sophisticated and energy-demanding technologies.

Objectives of climate adaptation and mitigation should seek the maximum synergy with objectives of nature conservation, water management, forestry and agriculture. Such integrated approach needs to be based on a coherent framework of environment policy, in order to avoid conflicts between sectors. In the following chapters we have listed some collected goals and measures which, in our view, can bring such multiple win solutions.

Nature conservation

Species and ecosystems are also challenged by climate change. Effects of climate change have already been observed, such as:

- enhanced biodiversity loss, especially in fragmented habitats

¹ CEEweb for Biodiversity is a network of 70 non-governmental organizations in the Central and Eastern European region. Our mission is the conservation of biodiversity through the promotion of sustainable development.

- shifts in geographic ranges of species and vegetation zones towards northern and higher altitudes
- altered species composition of communities
- shifts in timing of seasonal events, with consequences in food web interactions
- enhanced spread of invasive alien species

Extreme climate change is now well within the bounds of possibility, which, cumulating with other pressures (pollution, land use change and fragmentation, overexploitation, invasive alien species), urgently calls for new, flexible and integrated nature conservation strategies.

In order to help ecosystems cope with the above challenges, the most important goal of new conservation strategies should be to maintain and if possible, strengthen the natural functions and resilience of ecosystems.

Recommended measures at site level:

- restore water retention capacity of habitats
- enhance the heterogeneity of sites so that they host habitats from all ranges of succession stages
- restore connectivity between fragmented sites
- stand for the largest possible natural restoration of degraded sites

Recommended measures at landscape level:

- enhance the overall natural status and permeability of landscapes (by e.g. decreasing maximum size of agricultural fields, maintaining stripes of semi-natural habitats on field margins and along roads etc.)
- maintain or restore natural corridors
- following the existing trend of land abandonment, shift more and more areas from intensive use towards sustainable use or non-use
- protect existing green surfaces by limiting new green field investments

Water management

One of the most important concerns in the face of climate change is that of water, as it is severely impacted and brings significant pressures for adaptation. Water is a sector where system-level, integrated solutions with ecosystem-approach are inevitable. Besides water retention, natural water-based habitats provide a number of further ecosystem services, since they provide clean water and food, treat pollutants, control floods and erosion, ensure habitats, increase biodiversity and sequester carbon. These services underpin human wellbeing.

Recommended measures:

- prepare vulnerability assessments and risk analyses to underpin a carefully identified set of measures
- avoid or limit development and intensive land use in flood prone areas by appropriate spatial planning
- where possible, dedicate flood prone areas to natural water retention, thus maximising the positive aspects of floods and effectively use flood water in periods of droughts and scarcity

- when designing water reservoirs, prefer natural water retention areas (water bodies, floodplains and water related ecosystems) against structural solutions (e.g. constructed reservoir space)
- handle together flood protection and drought management in an integrated water resources management plan
- restore damaged water based ecosystems and prevent their further damages
- integrate water resources management in the management of the wider landscape
- promote natural solutions such as reforestation, ecosystem restoration and soil protection

Forestry

European forests will also be seriously challenged by climate change. Maintaining healthy, well managed forests are essential not only in tropical countries but in Europe too: they provide home to thousands of species, and protect soils and watersheds from erosion. They act as carbon stores, absorbing greenhouse gases and preventing their release into the atmosphere. Recent scientific studies have shown that C sequestration and storage is, in the long-term, significantly higher in non-managed forests or forests under sustainable management than those with intensive use, especially if we calculate with dead biomass and soil carbon, too.

The resilience and adaptation capacity of forests against climate change largely depends on their natural dynamics as well as biological (i.e. diversity of micro-habitats, species and genetic variables within species) and structural diversity (i.e. age distribution of trees as well as mosaic-structures with large trees, openings, young groups, deadwood and in certain habitat types, patches of grasslands and wetlands).

Recommended measures:

- avoid emission of carbon stored by European old-growth, close-to-nature forests by maintaining their natural status
- in protected areas and in special environments (e.g. riparian forests, dry forests), widely introduce non-intervention management
- in case of managed forests, support sustainable forest management systems (e.g. shelterwood) enabling natural processes and strengthening the forests' natural resilience and adaptation capacity as well as enhancing the biological and structural diversity of forests
- in forest management plans, put a special emphasis on sufficient amount of deadwood
- protect micro-habitats in forests with a special emphasis on wetlands, since they have an important role in buffering extreme hydrological events, retaining water in periods of excessive precipitation and gradually releasing it in periods of water scarcity, thus effectively working against both floods and droughts at landscape level
- protect forest soils, as important but sometimes underestimated contributors of forest carbon storage
- in case a shift in tree composition can be expected due to the shift of vegetation zones, prefer natural adaptation (i.e. gradual changes in species composition during a natural process) to artificial one (i.e. introduction of new species)
- enhance the proportion of forested areas with non-use and sustainable use, while restrict intensive use to plantations, clearly distinguished from natural forests

Agricultural use

In order to adapt to climate change, agricultural systems need to become more sustainable and balanced between the provision of food and many other goods and services at the same time. Enhanced soil organic carbon (SOC) content increases carbon sequestration, water and nutrient retention and decreases the risk of erosion, therefore contributes to climate change mitigation and adaptation as well as to long-term food security.

Diversity in agricultural systems is of key importance, making such systems - also called as integrated agricultural systems - much more resilient to extremes than monocultures, be it weather event, invasive alien species or pest outbreak.

Recommended measures:

- diversify agricultural landscapes aiming for a mosaic-like landscape, where cultivated lands alter with grazing lands and semi-natural habitats (e.g. forest patches, hedgerows, grassland stripes)
- diversify agricultural system in terms of spatial structure as well as species and breeds of crops and animals
- prefer locally adapted breeds in order to enhances crop diversity at regional scale, and also due to the fact that traditional local breeds have relatively high genetic diversity, which is a key factor for agricultural resilience
- apply techniques which enhance the soil's natural productive capacity through increasing its SOC (examples for such techniques: integrating crop residues into the soil, reduced tillage, cover crops and crop rotation, mixed cultures, smaller field size with fields edges and hedgerows, and diversity of management)

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