BIODIVERSITY AS AN ENABLER OF SUSTAINABLE DEVELOPMENT

Why is Safeguarding Biodiversity Important in the Finnish Development Policy?

Analysis of the Development Policy Committee, January 2021

DEVELOPMENT POLICY COMMITTEE

Summary

Biodiversity refers to the range of species and biotic communities on the planet, and to the genetic variation within species. The Convention on Biological Diversity, which was concluded in 1992, aims to ensure the conservation of biological diversity, to foster the sustainable use of its components, and to safeguard the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

However, biodiversity is declining at an alarming pace, faster than ever before in the history of humankind. The number of species threatened with extinction is growing all the time. Today, as many as a million animal and plant species are at risk of becoming extinct.

Challenges arising from biodiversity, climate change and food security as well as links between these phenomena and interrelated matters are also central themes in the work of the Development Policy Committee. Its goal is to strengthen the global dimensions of sustainable development in Finnish decision-making and Finland's international influencing activities.

During its current term of office, the Development Policy Committee will publish three analyses related to environmental questions, of which the first examines biodiversity. A group of experts representing the members of the Development Policy Committee has participated in the preparation of the publication. The expert group was commissioned to conduct a knowledge-based review of the significance and role of biodiversity in Finland' development policy and to draw up recommendations for decision-making relating to sustainable development and development policy.

Continuing loss of biodiversity together with the progression of climate change, increasing inequality and the waste problem threaten to hamper the achievement of the Sustainable Development Goals (SDGs) of the Agenda2030. All of the 17 SDGs are interrelated. For example, if attempts to stop the loss of biodiversity fail, the goals related to poverty reduction and zero hunger will not be reached in areas where people are very dependent on the services provided by ecosystems.

Diverse nature gives us all food, energy, pharmaceuticals and other essential goods. It also maintains a good air quality, wellbeing of forests, clean water and soil, and produces a viable climate. The loss of biodiversity is in many ways linked with various health threats, including the spread of zoonotic diseases.

Only a fraction of development finance is channelled to environmental issues

One of the four priority areas Finland's development policy emphasises adaptation to and mitigation of climate change and sustainable use of natural resources. However, development finance has not been allocated to environmental ends to any significant extent. Funding for biodiversity has been falling sharply since 2011. According to the OECD's DAC Peer Review in 2017, Finland channelled 17 per cent of its development finance to the environmental sector in 2015 when the corresponding figure in the OECD countries was 27 per cent on average. The OECD recommended Finland that apply the good practice of mainstreaming gender to improve how environment and climate change adaptation and mitigation are taken into account throughout Finland's development cooperation.

The majority of the funding allocated by Finland to biodiversity is multilateral funding channelled via international organisations, mainly to the Global Environment Fund (GEF). Civil society organisations' work is also supported. In bilateral cooperation, biodiversity has played a very small role in recent years.

Funding for biodiversity has been falling sharply since 2011.

Strengthening biodiversity in development policy

Many SDGs, such as reducing poverty and hunger, improving health and wellbeing, having clean water and sustainable energy, and preventing the loss of biodiversity can be achieved together. This requires more effective implementation of existing policies and legislation and changes at system level.

Reducing consumption and waste and developing production methods are essential not only to achieve sustainability but also to reach social justice. Examples of actions needed to achieve the SDGs include reforming the food systems, mitigating the climate effects arising from land use, promoting a well-balanced population growth, using nature-based solutions, and reforming the global economic system, as well as protecting biodiversity. Protecting and increasing the number of nature reserves and restoring

habitats are among the other central actions that are needed.

According to the Development Policy Committee's group of experts, biodiversity should be among the key themes raised by Finland in international advocacy work in the same way as Finland emphasises the rights of women and girls and people with disabilities. Finland must also support developing countries in the implementation of agreements relating to biodiversity.

It is important that biodiversity and environmental protection be included in the next government report on development policy principles to be applied across government terms so that it is addressed both as a cross-cutting objective and as a key theme under the fourth priority area (climate change and natural resources). This is to safeguard biodiversity in all development cooperation.

Protecting biodiversity and its sustainable use are in many ways linked to the SDGs, including balanced population growth, food security, poverty reduction and climate change mitigation and adaptation. The Committee's group of experts notes that, in its international advocacy, Finland must promote identification of these links, because protecting biodiversity and healthy and well-functioning ecosystems also promote food security and poverty reduction goals and mitigate climate change and help to adapt to it.

In addition, Finland must raise the level of its direct funding to the environment sector and to the protection of diversity in various funding instruments and take note of the impacts of all development and climate finance on biodiversity.

1. What is biodiversity and why is it important?

Biodiversity refers to the variety of species and biological communities on our planet and to genetic variation within the species. The aim of the Convention on Biological Diversity, which was adopted in 1992, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.[1] *

Regardless of the Convention and its implementation, the current rate of biodiversity loss is a major concern. The latest estimates, such as a global assessment completed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in 2019, show that biodiversity is being lost on our plant faster than ever before in the history of humankind. The number of species at risk of extinction is constantly increasing, and one million species of animals and plants already face extinction.[3]

Species are disappearing at such a fast rate that, according to many scientists, the sixth mass extinction is underway due to human-caused changes, such as the destruction of habitats.[4] A study compiled by the reinsurance company Swiss Re, which came out in August 2020, also illustrates this alarming situation. It claims that one third of the land area in one out of five countries in the world is already classified as having poor ecosystem status.[5]

Species are disappearing at such a fast rate that, according to many scientists, the sixth mass extinction is underway.

* Many other international environmental conventions support the protection of biodiversity, such as the Convention on International Trade in Endangered Animal and Plant Species (CITES), the Ramsar Convention on the protection of wetlands and aquatic birds, and UNESCO's World Heritage Convention. [2]

Strengthening the global dimension of sustainable development in Finnish decision-making and international advocacy is one of the Development Policy Committee's key objectives. This publication on biodiversity is the first part in a set of three themes examining the emerging challenges of biodiversity loss, climate change and food security as well as the links connecting and associated with these phenomena. The publication was created by an expert group consisting of Development Policy Committee members. The group's task was to produce a knowledge-based review of the significance and role of biodiversity in Finnish development policy and to draw up recommendations for decision-making related to sustainable development and development policy.

The group leader and main author is Jaana Vormisto, PhD, FIANTConsulting Oy. The group members were: Inka Hopsu/Chair of the Development Policy Committee, Member of Parliament (the Greens), Marikki Stocchetti/Secretary General of the Development Policy Committee, Anne Tarvainen/WWF, Elina Korhonen/Family Federation of Finland, Emilia Runeberg/Fingo, Kaisa Korhonen/Unipid, Kaisa Lähdepuro/ Ministry of Social Affairs and Health, Laura Blomberg/Finnish Association for Nature Conservation, Olli Turunen/Finnish Association for Nature Conservation, Marjaana Kokkonen/Ministry of the Environment, Pia Björkbacka/Central Organisation of Finnish Trade Unions, Sirpa Sarlio/Ministry of Social Affairs and Health, Toni Jokinen/Finnish Red Cross.

Why do biodiversity and its loss matter?

Human beings are part of the Earth's biodiversity. We also depend on other species, their habitats and their interactive relationships for our survival and wellbeing. Diverse nature provides us with food, energy, medicines, fibres and other essential commodities. It also maintains good air quality, clean water and soil, produces a climate that supports life, and creates opportunities for recreation and aesthetic experiences.[6] These free tangible and intangible benefits that nature produces for us are called ecosystem services, and many of them are essential for human health and well-being.

A large part of these ecosystem services cannot be fully replaced, while some are completely irreplaceable. For example, more than 75 per cent of the food crops used by humans depend on pollination by insects and other animals.[7] The continuous loss of biodiversity puts at risk these benefits and services, and ultimately the preconditions for the humankind's entire existence.

It has been estimated that with regard to genetic diversity, for example, we have already exceeded the critical risk limit.

The continuation of biodiversity loss and the advancement of climate change can lead to a breach of a critical limit, the so-called planetary boundaries[8], which can in turn lead to unforeseen and irrevocable changes in the conditions on our plant. It has been estimated that with regard to genetic diversity, for example, we have already exceeded the critical risk limit.[9] As the current trends continue, we find ourselves unable to support the efforts and objectives we have set for the universal well-being of people in the Sustainable Development Goals.[10] Biodiversity loss prevents the attainment of the UN's Sustainable Development Goals, or Agenda2030, as a whole. The coronavirus pandemic makes biodiversity even more topical as a theme, as such extensive health threats and biodiversity loss largely share the same root causes.[11]

What is biodiversity?

Diversity within a species (or genetic diversity) means that the genetic composition differs between individuals of the same species, such as fir trees. Diversity within a species is important for such reasons as resistance to diseases; if all individuals of a species had the same genetic composition, they could all be vulnerable to a disease.

Species diversity means the number of species in an ecosystem or an area. A large number of species in an ecosystem is usually good news, as a diverse ecosystem is often more stable. In a species-poor community, regulation between species has been distrupted, an individual species may proliferate at the expense of others. This disrupts the whole community.

Ecosystem diversity is the most extensive level of diversity, and it means the abundance of habitats in an area. When you stand on a lakeshore, you can see an example of ecosystem diversity: the lake ecosystem, the lakeshore ecosystem, the ecosystem formed by the shrubs beyond the shore, and the ecosystem of the heath forest further back. Many species, including humans, depend on ecosystem diversity for their life cycle (reproduction, sources of nutrition, water, shelter, rest) and welfare.

What is putting biodiversity at risk?

The five key reasons for biodiversity loss and the degradation of ecosystems are, in the order of priority: 1) land and sea use and its changes, 2) direct exploitation of animal, plant and other species, 3) climate change, 4) pollution, and 5) invasive alien species.[12]

Land and sea use and its changes lead to the loss and deterioration of natural habitats. The largest changes in land use are caused by the spread of agriculture, for example when rainforests or other habitats are cleared to make way for rice, soybean and palm oil plantations or for grazing of livestock. More than one third of the Earth's surface area and almost three quarters of the fresh water are used to grow crops or farm livestock.

The expansion of built environment has also led to habitat loss: for example, the number of urban areas has doubled since 1992. Other reasons for habitat loss are unsustainable commercial development, mining and energy production.[13]

Biodiversity is also reduced by the direct and excessive exploitation of species, such as illegal hunting or overfishing. One third of marine fish stocks are overfished. The impacts of climate change include reduced distribution of species, environments can be spoilt by pollution (for example, as a result of an oil spill or toxic waste), and invasive alien species compete with native species for space, nutrition and other resources. They may also spread diseases.[14]

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These causes of biodiversity loss have several different background factors. The number of people on the planet has doubled over the last 50 years. At the same time, per capita consumption has gone up, faster in rich countries than in poor ones. The impact of population growth on consumption is not quite straightforward, as countries experiencing a high population growth are generally poor. Regardless of the population growth, changes in consumption and resource use in these countries usually take place more slowly than in more affluent countries. The poorest countries have inadequate health services and education systems. As a consequence, women bear more children than they would like, which leads to population increases and unsustainable use of natural resources locally. Major inequalities within and between countries are linked not only to population growth but also unsustainable consumption and production models. If resources and the profits obtained through them were shared more fairly, there would be no need for high growth in order to lift people out of poverty.[15]

Over the past twenty years, the world has become hyper-connected. Goods, information, money and people flow between countries and continents, and these flows have multidimensional impacts at both ends and along the way alike. On the one hand, the growing world trade and regional segregation of production and consumption have created new economic opportunities. On the other hand, they have increased the loading on the environment and also shifted this loading to poor countries. Poor countries satisfy the increasing demand in rich countries by producing goods, often with lower environmental standards and poorer working conditions. The actors and institutions that negotiate trade agreements are often unequal, which affects the sharing of benefits and long-term effects.[16]

As a result of global trade, Finland has also outsourced a large part of its production and the environmental impacts associated with it to other countries. Around 40 per cent of the farmland needed to grow the agricultural produce consumed in Finland, such as coffee, wheat, rape and soybean, is found outside Finland's borders (especially elsewhere in Europe and in South America).[17]

2. Why is biodiversity a topical and important issue also in development cooperation and development policy?

Sustainable development and biodiversity: Everything hinges on biodiversity

The Agenda2030 and its objectives direct the efforts to promote sustainable development in all countries. The objectives include eradicating extreme poverty from the world and securing well-being in an environmentally sustainable way. Ensuring that no one is left behind is a key principle of the Agenda2030.

The UN's Global Sustainable Development Report[18] notes that, despite the initial efforts, the world is not on track for achieving most of the 169 targets that comprise the Goals. Together with biodiversity loss, the report identifies rising inequalities, climate change and the increasing amount of waste as obstacles to progress towards sustainable development. These four major negative phenomena make it harder to reach the Goals and targets, as all the 17 Goals are interdependent. For example, if we cannot make progress with halting biodiversity loss, poverty or famine cannot be eradicated in areas where people are heavily dependent on the ecosystem services.

Figure 1 illustrates how preventing biodiversity loss (included in Goal 15) is a key issue and the foundation of our entire wellbeing. Goals 6 (Clean water and sanitation) and 14 (Conservation and sustainable use of the marine resources) contain targets related to preserving aquatic ecosystems.[19]It has been estimated that biodiversity loss and degradation of ecosystem services,

Ensuring that no one is left behind is a key principle of the Agenda2030.

in particular, undermine progress towards a large proportion (80%) of the targets of Goals related to eradication of poverty and hunger, improvement of health, access to clean water, sustainable cities as well as conservation goals related to climate, oceans and land (Goals 1, 2, 3, 6, 11, 13, 14, and 15).[20] In addition, many of the Sustainable Development Goals are human rights, and biodiversity loss also affects their realisation.

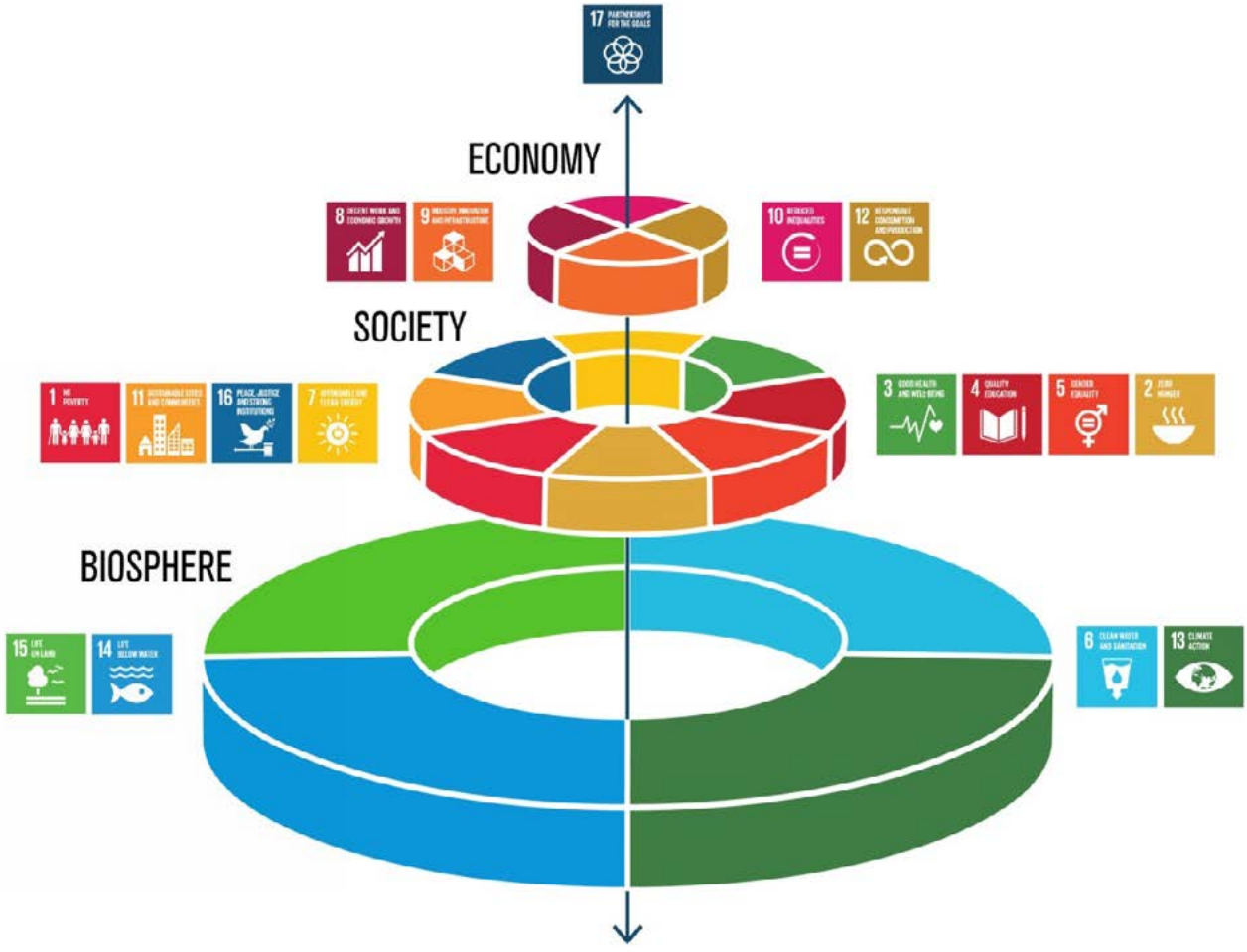

Photo: Azote Images for Stockholm Resilience Centre

Figure 1. A graphical presentation of a framework which recognises the biosphere (= cycle of life, entity formed by ecosystems) as the vital foundation for achieving the social and economic Sustainable Development Goals.

Examples of links between biodiversity and human rights

Right to life: The disappearance of coastal habitats and coral reefs has increased the risk of loss of human lives due to floods and hurricanes.

Right to food: The stability and adaptability of food production are dependent on biodiversity.

Right to health: Biodiversity plays a role in the discovery and development of new medicines; many antibiotics, for example, are derived from microorganisms. Changes in habitats affect the background factors of health and well-being.

Right to clean water: Through such elements as soil biodiversity and forest areas, biodiversity is linked to water circulation (improved flow control and water storage).

Rights of indigenous peoples and other communities dependent on natural resources: The lives, health and cultures of these communities depend on natural resources. Biodiversity loss makes the resources less available, thus also reducing the freedom of choice and action of indigenous peoples and other communities dependent on natural resources.

Rights of the child: Loss of biodiversity can affect children's normal development and restrict their future choises and actions.

Women's rights: Due to biodiversity loss, women in poor countries spend more time searching for water, firewood or medicinal plants, thus reducing their chances of spending time on such activities as earning a livelihood or education. Having to travel further in search of water or firewood also exposes women and girls to sexual violence as well as sexual and gender-related harassment.

Text box sources[21]

Poverty and biodiversity: Poor people and vulnerable communities are hit hardest

The poorest people who are directly dependent on the products and services of nature for their daily subsistence are the hardest hit by the main impacts of reduction or loss of biodiversity. In many cases, they are already vulnerable for other reasons (such as women and girls, people with disabilities, indigenous peoples, different minority groups).[22]

Ecosystem services and other non-marketed goods make up between 50 and 90 per cent of the total source of livelihoods among poor rural and forest-dwelling households – so-called 'GDP of the poor'.[23] The example below (Figure 2) from Indonesia and India illustrates the importance of ecosystem services, especially for the livelihoods of poor people, even if the share of agriculture, forestry and fisheries in the GDP of the entire population is clearly lower.[24]

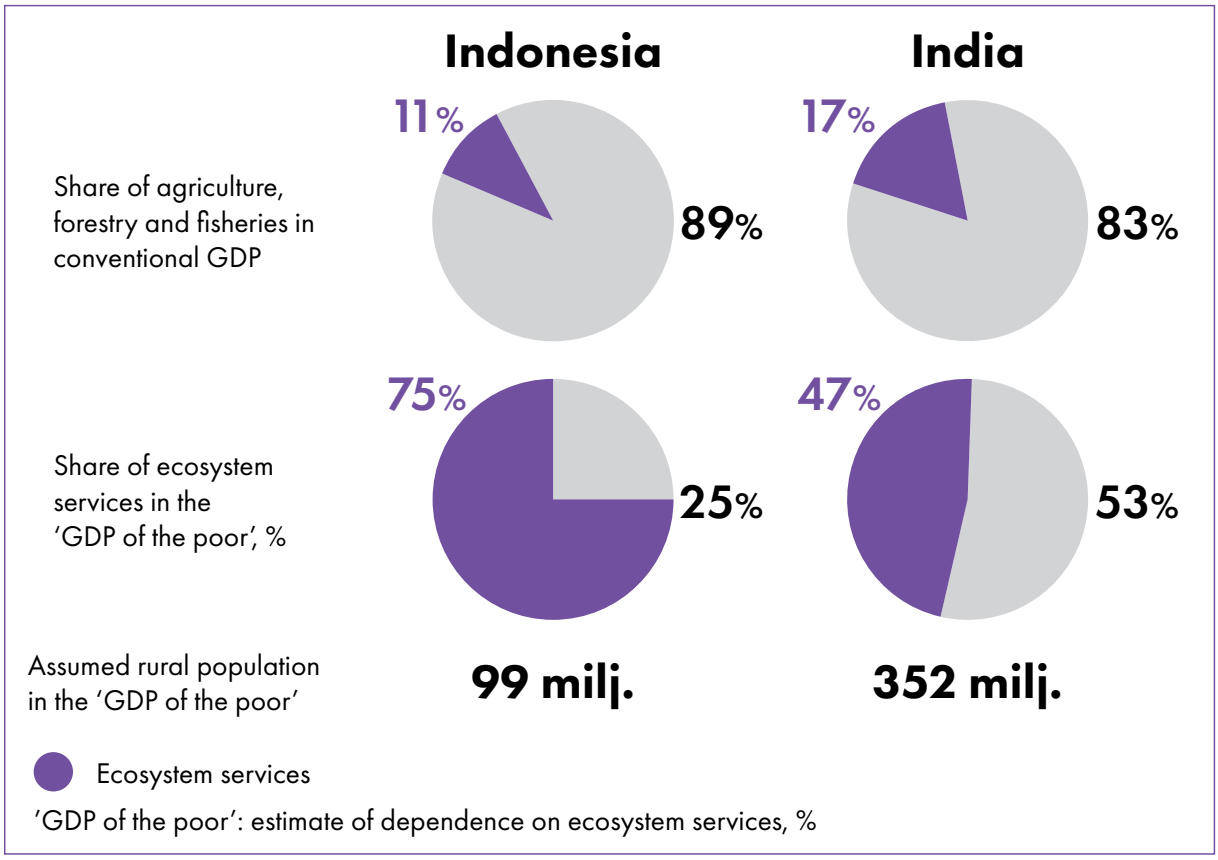

Figure 2. An estimate of poor people's dependence on ecosystem services ('GDP of the poor') in India and Indonesia.

Additionally, the poorest people cannot afford to replace these freely available natural resources and ecosystem services. They usually have very little economic and political power in their countries. This is why their ability to participate in processes in which decisions are made on land and resource use is rather limited or non-existent. Biodiversity loss exacerbates the fundamentally unequal status and vulnerability of these people further. Biodiversity also plays a role in how these people and communities can adapt to changing conditions, such as climate change.[25]

The poor bear the brunt of the environmental impacts of consumption

The unequal status of the poorest people is also made worse by the fact that those at the upper end of the income and wealth scale in the global economy can transfer the environmental costs of their lifestyles and consumer decisions to those at the bottom end of the income distribution. This transfer can take place both at national and global level, for example in the case of CO2 emissions. While people in the lowest income categories are already at a higher risk of suffering from environmental degradation and loss of biodiversity, they also end up bearing the brunt of these environmental costs.[26]

After several decades of positive development, poverty has again started increasing as a result of the coronavirus crisis. According to the latest estimate of the IMF, close to 90 million people are expected to fall into extreme deprivation this year.[27]

While many indigenous peoples and local communities suffer from biodiversity loss, they often also play an important role in preserving both biodiversity and the traditional knowledge associated with it. At least one quarter of the global land area is owned, controlled or used by indigenous peoples. Around 35 per cent of these areas are formally protected, and approximately 35 per cent of all remaining terrestrial areas with very low human intervention. Biodiversity has been found to decline more slowly in indigenous peoples' land than in other lands.[28]

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Gender equality and biodiversity: Inequality between women and men must be addressed

Biodiversity loss affects women and men, and the old and the young, in different ways depending on how they earn their livelihoods and their position in the community. No comprehensive assessments of how biodiversity loss affects gender equality or different age groups have as yet been made. We know that the roles and responsibilities of men and women in the management of biodiversity vary between and within countries and cultures. In most circumstances there are gender-based differences and inequalities, which tend to favour males.

Stark gender differences are evident in economic opportunities and access to and control over land, biodiversity resources and other productive assets and in decision-making power. The differences also exacerbate vulnerability to biodiversity loss, increased disease burden, climate change and natural disasters. In addition, women and men have different knowledge about biodiversity and ecosystems. Their needs and priorities regarding the benefits obtained from nature are also different.

To inform efficient policies regarding biodiversity conservation, sustainable use and the sharing of its benefits, we need to understand and expose gender-differentiated practices and gender inequalities in control over resources.[29]

Good experiences have been gained through so-called population, health and environment projects carried out in high biodiversity areas, or 'ecological hotspots'. These areas often also see high population growth and have little access to basic government services like health and education. The aim of these projects is to simultaneously improve access to health services (including sexual health services and family planning) and support communities in managing their natural resources in ways that improve their health and livelihoods and conserve critical ecosystems.

These projects make it possible to slow down population growth and improve the resilience (adaptability) of both communities and ecosystems. They also enable women to participate in nature conservation.[30]

The economy, employment and biodiversity: Protecting biodiversity could create revenue and jobs

While biodiversity and ecosystem services are particularly important for the poorest people, biodiversity is indirectly quite fundamental for our societies and their economic activity. An estimated USD 44 trillion of economic value creation (equalling more than a half of the global GDP) is either moderately or highly dependent on nature and the services it provides, and consequently also exposed to the risks and impacts of the degradation of nature.

In fact, the World Economic Forum's risk assessment highlights biodiversity loss and the collapse of ecosystems among the top five risks, given the likelihood and impact of these risks over the next ten years.[31] High risk to doing business (in terms of likelihood and severity of impact) affects private sector development, particularly in the Least Developed Countries.[32]

Protecting ecosystems brings major economic benefits

The economic and social costs of ignoring and failing to take action about biodiversity loss and the collapse of ecosystems would be huge. The world already lost an estimated EUR 3.5 to 18.5 trillion per year in ecosystem services from 1997 to 2011, and an estimated EUR 5.5 to 10.5 trillion per year from land degradation. Similar estimates have been produced of the potential costs or cost savings of protecting biodiversity. For example, conserving marine stocks could increase annual profits of the seafood industry by more than EUR 49 billion. Protecting coastal wetlands could save the insurance industry around EUR 50 billion annually through reducing flood damage losses.[33]

In order to protect biodiversity, it has been proposed that 30 per cent of the global land and sea areas should be protected by 2030. At the general level, recent calculations of the financial costs and benefits related to this goal indicate that the benefits would exceed the costs. However, the distribution of the benefits and costs will not be homogeneous between countries. There are also major differences between countries regarding the extent to which they are able to cover the costs of expanding the protected areas and realise the revenue potential generated by these areas.[34]

Ecosystem services could create 1.2 billion jobs

Sustainable Development Goal 8 aims to promote not only inclusive and sustainable economic growth but also full and productive employment and decent work for all. The relationship between employment, decent work and the environment is multifaceted. The UN's International Labour Organization (ILO) estimates that some 1.2 billion jobs, or 40 per cent of total world employment, depend directly on ecosystem services (in agriculture, forestry and fisheries as an example). In addition, many jobs (such as in tourism) rely on these services or other natural resources indirectly (including mining and fossil fuel-based energy). At the same time, the exploitation of natural resources and utilisation of services produce waste and emissions, which in turn have a negative effect on biodiversity and the ecological status in general.

Decent work deficits contribute to environmental degradation since, when faced with food and income insecurity, farmers are tempted to overgraze, overuse land and hunt illegally. The transition to a more environmentally sustainable economy means

that the number of jobs in such sectors as coal and energy-intensive industries will go down. However, they will be made up for by new jobs. To ensure a just transition, measures are needed to facilitate the redistribution of employment, promote decent work, provide solutions appropriate to local conditions and support workers who are forced to transition.[35]

Food security and biodiversity: Biodiversity improves food supply

It has been estimated that in the past, humans used around 6,000 different plants for food. Currently, fewer than 200 species make substantial contribution to global food output, with only nine accounting for 66 per cent of total crop production. The world's livestock production is based on about 40 animal species, with only a handful providing the vast majority of the global output of meat, milk and eggs.[36] As few as 25 fish species and families account for more than 40 per cent of catches from the oceans.[37]

Biodiversity loss reduces the productivity of agricultural systems, for example in the form of reduced crops.

The crop varieties and animal breeds used around the world are based on genetic diversity. While genetic diversity is important for food security and nutrition, its preservation is also vital because it represents a possibility to adapt to agricultural changes caused by climate change, including increased drought, salinity or new diseases. Preserving genetic diversity and possibilities for adaptation is particularly important for the poorest small-holders.[38]

Dwindling fish stocks and impoverished soil

Biodiversity loss means reduced availability of wild foods such as fish and wild meat. Large declines in the diversity of fish species is strongly associated with lower catches, lack of resilience to exploitation and higher incidence of stock collapse. Our agricultural systems depend on soil structure and fertility, pollination and pest control, in all of which biodiversity plays an important role. Biodiversity loss reduces the productivity of agricultural systems, for example in the form of reduced crops.[39]

This is why biodiversity is crucial for our food security. An estimated 821 million people suffer from inadequate food security.[40] At the end of 2019, 135 million people in 55 countries experienced acute food insecurity.[41] The World Food Programme (WFP)

estimates that unless we act fast, this figure will double by the end of the year as a result of the coronavirus pandemic.[42]

In addition, the global population is growing[43], posing an additional challenge to our global food output and the urgent need to develop food systems. At the same time, almost one half of the world's current food production drives biodiversity loss, ecosystem deterioration and water stress. We use too much land for crops and livestock, and also overuse fertilisers and irrigation water.[44]

Poor nutrition exacerbates health problems

We currently produce record volumes of food on the planet, part of which is lacking in variety, for the rapidly growing humankind which is at the top of the food chain. However, not only the number of those who go hungry but also non-infectious diseases associated with poor nutrition and excessive energy intake (including cardiovascular diseases, cancers, diabetes) are also a growing problem in the global south. These areas produce food for the affluent north at a price that does not provide a living (let alone food security) for farmers in the south. The food subsidy schemes used in many countries also undermine our understanding of the costs of food production and exacerbate inequalities related to food availability.

Despite good intentions, the maximisation of crops during the green revolution through hybrid varieties, fertilisers and pesticides did not lead to the eradication of hunger among the humankind. Increasing crop volumes per hectare at the expense of quality and diversity has led to lower-quality nutrition in both poor and rich countries. Unbalanced diets and loss of biodiversity are interlinked, as are our current way of producing food and biodiversity loss. Consequently, it is vital to pay attention to food systems in order to preserve biodiversity.

Security and biodiversity: Deterioration of living environments drives conflict

Loss of biodiversity is also a security issue. Biodiversity loss combined with such problems as scarcity of water resources, drought and growing populations pose a threat to the livelihoods and food supply of more and more people. Globally, 29 per cent of the land area has already become degraded, affecting the lives and livelihoods of 1.3 to 3.2 billion people and, in some cases, leading to migration and even conflict.

Environmental Justice Atlas[45] has documented social conflicts related to environmental issues since 2015. To date, it has registered more than 3,000 conflicts around the world. Most of these conflicts are related to poor management of land use, which has led to poor agricultural condition of the land and/or loss of natural resources.[46]

In addition to destabilising societies, armed conflicts also have direct physical impacts on ecosystems. The war between Iran and Iraq, for example, took place in arid areas where, while the species numbers are not necessarily very high, the species and the ecosystems they form are highly adapted to life in these rather harsh conditions. In addition to direct physical effects, large amounts of waste and toxic materials were left behind and burned during the war, which contributed to swaying the existing balance and weakening the status of ecosystems.[47]

Health and biodiversity: Medicine needs biodiversity

An estimated 60 per cent of the world's population rely on traditional medicines, of which medicinal plants are the most common constituent.[48] Additionally, 70 per cent of our cancer medicines are either natural products, or their synthetic production was originally inspired by nature.[49] Biodiversity loss consequently threatens access to natural medicines, which is particularly significant for people who cannot afford commercial drugs. Loss of biodiversity also reduces our chances of discovering new medicines.[50]

On the other hand, many branches of pseudoscience threaten to push species over the brink, for example as powders made from individual body parts of certain animal species end up in the world market as aphrodisiacs. Illegal hunting activities related to these products are becoming more widespread, especially in countries and situations with an unstable political climate.[51]

The poorest people face a growing disease burden

The loss of biodiversity and deterioration of ecosystem services can also increase the disease burden of the poorest and most vulnerable groups, in particular. In rural areas, many people depend on rivers and lakes for their water supply. Changes in river basins, for example those caused by the felling of forest, may increase the prevalence of diarrhoea as ground water resources dwindle, with an essential impact on the health and mortality of children aged under five.

Loss of biodiversity can also reduce protection against air pollution. Different shapes and sizes of leaves capture particulates and chemicals in different ways, and thus the diversity of plant types, and their abundance within an area, affects air quality.[52]

Ecosystems with rich biodiversity act as a barrier to diseases, for example by diluting the strength of pathogens. The continuing spread of settlements into natural habitats due to population growth, for example in the form of rapid urbanisation, creates serious health security threats. As there is less space for wild animals, humans

come into contact with animals more often, creating a risk of spreading zoonoses (disease or infection passed on from animals to humans). More than 70 per cent of new communicable diseases, including Covid-19, are zoonoses. They infect humans either through direct contact with wild animals or indirectly through farmed animals.[53]

Urbanisation severs our connection with nature

It has been shown that the prevalence of autoimmune diseases is increased by the loss of connection with nature associated with urbanisation and modern lifestyles. This is due to differentiation in the microbial composition of humans and the natural environment. A natural environment is a diverse, self-regulating microbial community. As humans live in the chemically cleansed indoor environments of the cities and eat food lacking in variety, their microbial communities become impoverished and no longer provide an immune response to allergies, certain cancers and other autoimmune diseases. The most urgent challenge is faced by the quickly urbanising developing countries in Africa and Southeast Asia, as their epidemic of non-communicable diseases is worsening, and effective strategies for prevention and treatment have not been implemented.[54]

'One Health' is an approach introduced at the beginning of the 21st century that emphasises the connection between humans, the animal species we use and the environment, as well as the need for cross-administrative cooperation, among other things to combat pandemic threats. The coronavirus outbreak underlines the importance of this cooperation further. The 'Planetary Health' approach, on the other hand, examines the individual's relationship with nature holistically at the ecosystem level. It highlights the bi-directional nature of the relationship between human health and the status of the environment. In other words, human health depends on the health of natural ecosystems and, on the other hand, the health of ecosystems depends on human activity.[55]

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Climate change is already affecting biodiversity and its decline.

Climate change and biodiversity: Nature-based solutions help reduce emissions

Climate change is already affecting biodiversity and its decline. These impacts are expected to gather momentum, to the extent that in the second half of this century climate change would already be the main cause of biodiversity loss. For example, the impacts of climate change on the oceans (heat waves, acidification) have a negative impact on many species and ecosystems.

It has also been estimated that as many as one out of six species living on the planet may become extinct if global warming continues at the current rate. Due to climate change, extreme climate conditions have become more widespread, and the number of wildfires, floods and periods of drought associated with them has increased. This has negative effects not only on nature but also on human communities.

The effects of climate change on biodiversity are difficult to predict, as the impacts on both species and ecosystems are complex. Our understanding of these impacts is also limited. In addition, the impacts of climate change on biodiversity are not evenly distributed between different regions. In the meantime other human actions, including land-use change, overexploitation of natural resources, pollution and invasive alien species, exacerbate the negative impacts of climate change on nature.[56]

A well-functioning ecosystem mitigates climate change

Climate change erodes the resilience, or adaptability, of ecosystems. Diverse, well-functioning and flexible ecosystems are important as they help us both mitigate and adapt to climate change (carbon sequestration and storage).

While rich ecosystems cannot prevent natural disasters, they can reduce harmful impacts. For example, natural habitats in watersheds can secure and regulate water supplies and protect communities from flooding and soil erosion.[57]

Consequently, effective action against climate change is also needed to slow down and prevent biodiversity loss. Transitioning to nature-based solutions which, together with reducing greenhouse gas emissions, would help curb global warming while also supporting ecosystem adaptability would be one solution.[58] The objectives of nature-based solutions include the protection, sustainable use and restoration of ecosystems, while they provide an efficient and flexible response to such societal challenges as climate change, water and food security or natural disasters. They also promote human wellbeing and biodiversity.[59]

Nature-based solutions have many benefits

Research shows that nature-based solutions could provide about one third of the total net emission reduction effort required to prevent the global average temperature from increasing by more than 1.5 degrees. These nature-based solutions could also safeguard and enhance a wide range of ecosystem services and the conservation and sustainable use of biodiversity. It is important to note, however, that while nature-based solutions are an essential part of the solution, the climate problem cannot be solved without stringent reductions in the use of fossil fuels.

The distributional impacts of these solutions must also be considered. For example, indigenous peoples and local communities must be fully involved in the development of these solutions. Additionally, while many ecosystem-based approaches have co-benefits for biodiversity, this is not always the case, and careful assessment of synergies and trade-offs is required (for example, planting trees binds carbon, but non-native species in monoculture plantations do not have a positive impact on biodiversity).[60]

Current global processes related to biodiversity

- The 15th meeting of the Conference of the Parties to the Convention on Biological Diversity will be held in China in late 2021. Among other things, the meeting will decide on new global biodiversity objectives, known as the post-2020 framework.
- The 26th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change will be hosted by the United Kingdom in December 2021. The host country has proposed nature-based solutions as one of its themes.
- The fifth session of the UN Environment Assembly (UNEA-5) will be held in two parts: a virtual meeting in February 2021 and a session in Nairobi, Kenya, in February 2022. The theme of the meeting is Strengthening Actions for Nature to Achieve the Sustainable Development Goals.
- As part of the 'Decade of Action for the SDGs', the UN Secretary-General will convene a Food Systems Summit 2021 (a Pre-Summit in Rome in the summer and a Summit in New York in the autumn).

In addition to these meetings, a number of important strategies and other processes are underway, including:

- The European Commission's Biodiversity Strategy for 2030, which goes hand in hand with the From Farm to Fork Strategy. Both of these strategies are part of the European Green Deal.
- The UN's Decade of action on nutrition 2016–2025 is a commitment by United Nations Member States to undertake 10 years of sustained and coherent implementation of policies, programmes and increased investments to eliminate malnutrition in all its forms, everywhere, leaving no one behind.
- The objective of the UN's Decade on Ecosystem Restoration 2021–2030 is to halt the degradation of ecosystems and restore ecosystems in order to achieve the SDGs.

3. How is biodiversity addressed in Finland's development cooperation and policy?

According to Prime Minister Marin's Government Programme, Finland will achieve the goals of the UN Convention on Biological Diversity. The Government Programme also refers to the EU 's strong commitment to implementing the Convention. The Government Programme's chapter on development policy and cooperation and the chapter presenting the priorities of this government term also mention the sustainable use of natural resources, including afforestation. However, biodiversity is not brought up in this context.

Biodiversity was also overlooked in the latest development policy report adopted in February 2016.[61] It presented for the first time the four long-term priority areas of Finland's development policy. The fourth priority area aims for increased food security, better access to water and energy, and the sustainability of natural resources. There is no direct reference to the environment or protection of biodiversity in this priority area. Instead, the report notes that the priority area supports in particular the UN Sustainable Development Goals 2, 6, 7 and 15 (Goal 15 includes halting biodiversity loss).

In recent years, results maps and indicators that support them have been drawn up for the four priority areas of Finland's development policy and humanitarian aid. These indicators are used to support strategic management and results reporting in development policy. The Ministry for Foreign Affairs website, which presents the objectives and principles of development policy and this results-based management, refer to safeguarding biodiversity as part of the fourth priority.[62]

The long-term target set for priority area 4 ('impact level') emphasises climate change adaptation and mitigation through sustainable use of natural resources (*Climate resilience and low greenhouse gas emissions development are promoted by sustainable use of natural resources*). While biodiversity is not highlighted in the outcome-level medium-term objectives, protection and sustainable management of biodiversity are referred to in one short-term objective (Output 1.1. Forests, watersheds and biodiversity under conservation and/or participatory, sustainable, and integrated management).[63]

Only a small proportion of development funding goes towards environmental issues**

Regardless of the priorities, significant development funding has not been allocated to environmental issues. A peer review completed by the OECD's Development Assistance Committee (DAC) of Finland 's development policy in 2017 highlighted the fact that Finland allocates a smaller share of its development funding to the environmental sector than the OECD countries on average. In 2015, just over 15 per cent of Finland's ODA commitments targeted the environmental sector compared to a DAC average of 27 per cent The OECD report recommended that Finland apply the good practice of mainstreaming gender to improve how environment and climate change adaptation and mitigation are taken into account throughout Finland's development co-operation.[64]

The OECD review was based on the situation in 2015, after which development funding was cut significantly. These cuts also reduced the appropriations for such beneficiaries as the Global Environmental Fund GEF and the UN Environmental Programme (UNEP). While climate funding has been increased in recent years, the level of other funding for environmental issues and biodiversity has remained low. The downward trend in funding for biodiversity can be clearly seen in Figure 3 below.

Most of Finland's funding for biodiversity issues is multilateral and channelled through such international organisations as the UNEP and the GEF. Finland also finances the International Union for Conservation of Nature (IUCN) and Finnish environmental organisations which engage in development cooperation (WWF Finland, the Finnish Association for Nature Conservation and the Siemenpuu Foundation).

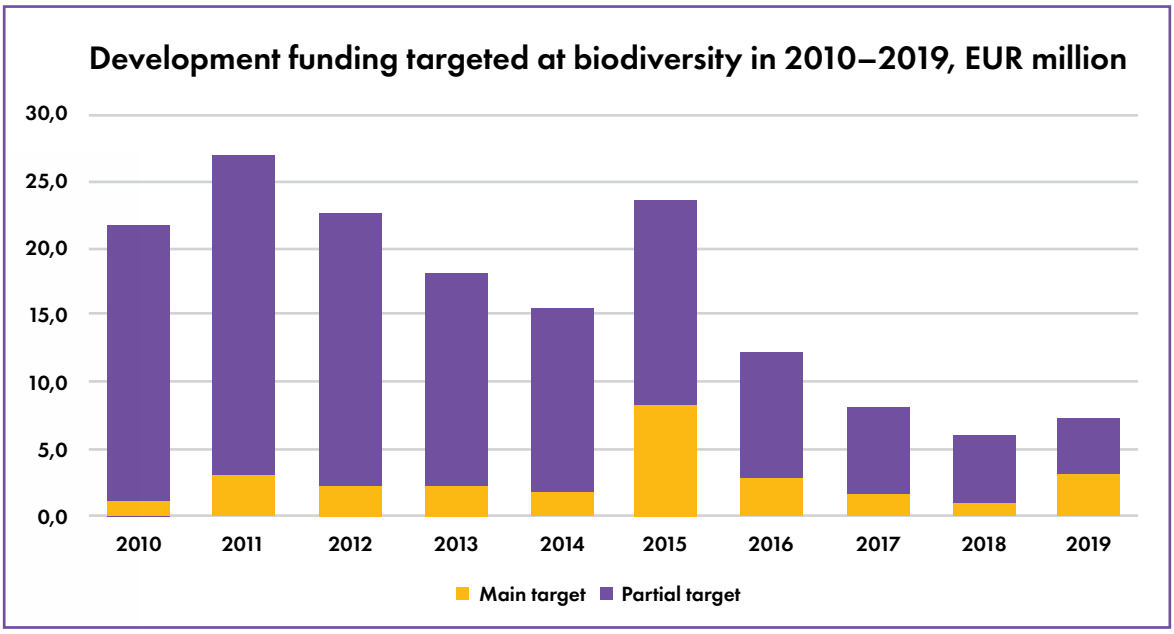

Figure 3. Development funding targeted at biodiversity in 2010–2019. The figure for 2019 is preliminary.

** Of the Development Policy Committee members, the Finns Party are not in favour of raising the level of development funding in a situation where Finland's national finances are facing a serious crisis. They argue that the amount of development aid should rather be drastically reduced, making efforts to improve its effectiveness. However, there should be a sharper focus on biodiversity in development policy and its resource allocation within these marginal conditions. In the opinion of the Finns Party, it is important that women could influence the number of children they bear also in developing countries, which would contribute to reducing the impacts of demographic development on biodiversity.

4. Solutions and recommendations

This is how we can enhance biodiversity in Finland's sustainable development work

The achievement of many key Sustainable Development Goals, including eradication of poverty and hunger, improving health and well-being, clean water, sustainable energy and halting biodiversity loss, can be combined. This would require more effective implementation of existing policies and statutes as well as system level changes. The active implementation of various action plans, including the recently published Action plan for mainstreaming biodiversity,[65] is also important. Reducing consumption and waste and improving production methods are essential for achieving not only sustainability but also social justice. The overhaul of food systems, climate change mitigation measures based on land use, use of nature-based solutions and reform of the global economic system are examples of actions and changes needed to achieve the Sustainable Development Goals, including the protection of biodiversity. In addition, maintaining and expanding protected areas and restoring habitats shaped by humans are key measures to safeguard biodiversity.

Global scientific expertise and investments in sustainability science are needed to underpin these changes and solutions. Science seeks to resolve sustainability problems, including complex issues related to climate change, poverty or biodiversity loss. As part of this work, we also need to strengthen the research capacity and infrastructure of the global south.

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Recommendations for giving biodiversity a larger role in Finnish development cooperation and policy***

- Finland should commit to and promote more strongly the implementation of global biodiversity conventions, both nationally and internationally. Finland should also support the poorest countries in implementing the biodiversity conventions to achieve the Sustainable Development Goals.
- Safeguarding biodiversity and protecting the environment should be included in the next government report which outlines the development policy principles spanning several government terms, both as a cross-cutting objective of development policy and a key theme of the fourth development policy priority area ('Climate change and sustainable use of natural resources'). These policies together with development of the monitoring system and increased personnel and financial resources will ensure that biodiversity is better safeguarded in all development cooperation.
- The protection and sustainable use of biodiversity are linked to many Sustainable Development Goals, including balanced population growth, food security and eradication of poverty. Finland should promote the recognition of this link in its international advocacy. It should also be noted that the protection of biodiversity contributes to achieving food security and reducing poverty. Promoting the resolution of issues related to sharing the benefits from genetic resources fairly under international conventions and to open knowledge is vital.
- Finland should develop its policy messages about the links between biodiversity and climate change and use them in multilateral and bilateral influencing activities, development cooperation and international negotiations in line with human-rights based policy. Finland has used this approach when promoting the rights of women and girls and people with disabilities, for example.
- There is a strong interdependence between the health of ecosystems and human health. This is why Finland should support the promotion of both environmental and human health in keeping with the One Health approach to prevent pandemics and other health threats and to strengthen the wellbeing of humans, animals and the environment.
- The transition to an environmentally sustainable economy requires a fair transition of workers following the ILO's definition and guidelines. Finland should support dialogue between various stakeholders and work in the global south to facilitate the redistribution of employment, to promote decent work and to offer solutions suited to local conditions.

*** Of the Development Policy Committee members, the Finns Party are not in favour of raising the level of development funding in a situation where Finland's national finances are facing a serious crisis. They argue that the amount of development aid should rather be drastically reduced, making efforts to improve its effectiveness. However, there should be a sharper focus on biodiversity in development policy and its resource allocation within these marginal conditions. In the opinion of the Finns Party, it is important that women could influence the number of children they bear also in developing countries, which would contribute to reducing the impacts of demographic development on biodiversity.

- The protection and sustainable use of biodiversity are essential not only for achieving many of the Sustainable Development Goals but also for the realisation of several human rights. This relationship has already been recognised in many international contexts. For example, international human rights bodies rely on the Convention on Biological Diversity and its different instruments in their decision-making. Finland should highlight the relationship between biodiversity and human rights as well as decisions related to these issues in its international advocacy.
- In the implementation of sustainable development in Finland, more attention should be paid to the negative impacts of various policy areas and our consumption habits on the environment and biodiversity in developing countries. A broad-based dialogue on environmentally harmful statutes and subsidies is also needed.
- Finland should bring its direct funding for the environmental sector and protection of biodiversity up to the level recommended by the OECD in its various funding instruments, including support for such international environmental sector actors as the GEF, UNEP and IUCN.
- Impacts on biodiversity should be addressed in all Finnish development funding and climate financing (including financial investments). It should simultaneously at least be ensured that the funding does not harm biodiversity. Finland should also set a target for the share of climate funding that supports biodiversity. This way, the funding will support both the protection of biodiversity and climate change mitigation and/or adaptation, for example through nature-based solutions.
- Finland should actively promote the targeting of EU funding at the protection of the environment and biodiversity as well as support for the green transformation (EU Green Deal, deforestation policy).

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