



Is Investing in Plant-Based Meat the Most Efficient Way to Address Biodiversity Loss

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Introduction

Biodiversity refers to the forms of life on earth and is therefore important for the survival of all species, each species being adapted to a set of environmental conditions requiring its own particular and different habitat. The modification of its environment can lead to behavioral changes, migration, and in the worst case, extinction of the

Species the latest figures for biodiversity are alarming: Out of 8 million animals and plant species on earth, 1 million are threatened with extinction. The UN report on the biodiversity of the world's forests points out that since 1990, nearly 420 million hectares of forests have been lost due to human activity, destroying ecosystems that are estimated to be home to 92.2% of the world's population of living species, animals and plants. Nature is irrevocably declining globally at unprecedented rates in human history. The conservation of the world's biodiversity depends on the way we interact with it and the use we make of it.

The loss of biodiversity has significant consequences for the ecosystems that constitute it, as well as climate change, pollution and other threats to the environment. While the causes and consequences of climate change and pollution have often been analyzed through the prism of human action, the loss of biodiversity is also dependent on it and has a major influence, the extent of which is still little known. Pollution, and particularly air pollution such as nitrogen deposition, but also plastic pollution, are becoming an increasing cause of biodiversity loss and ecosystem dysfunction. Climate change and the loss of biodiversity are intrinsically linked: global warming has effects linked to changes in species migration, causing chain reactions. On the other hand, the loss of forest biological diversity, that acts as a sink for 365 billion tons of carbons worldwide and help mitigate the effect of climate change, have tremendous effect on global warming.

The effects of biodiversity loss are also critical for humans who are dependent on it. Changes in ecosystem services impact human health, affecting livelihoods, incomes, local migration and, on occasion, can even lead to political conflict, according to the WHO. Furthermore, it is estimated that biodiversity provides services for a value of 44 trillions of dollars in 2020, its loss therefor present a great threat to all activities dependent of its ecosystems, based on resources and services available for free.

While the urgency of the situation has been grasped by world governments, international institutions and market actors, and many studies on the risks of biodiversity' decline on political, economic and social activities have been developed, there is nevertheless little concrete action taken for a necessary change in the protection of biodiversity. In fact, the Paulson Institute estimates in 2020, that the gap in finance for biodiversity hovers between 598 billion dollars and 824 billion dollars. Biodiversity finance represents only 0.1% of the global GDP, a 124-143 billion dollars per year, with principally public funding.

Animal Agriculture as the Main Source of Biodiversity Loss

In what kind of habitat is biodiversity lost?

The loss of biodiversity goes hand in hand with the death of the ecosystems that constitutes it. Either the ecosystems are destroyed directly by human intervention, or the key species that make up the ecosystem die with the destruction of the ecosystem. The loss of biodiversity may be natural, but we now see that human activity has played a major direct or indirect role, particularly in recent decades, with pronounced and long-lasting effects. Indeed, according to the MEA Report, the most important direct drivers of biodiversity loss and ecosystem service changes are habitat change; climate change; invasive alien species; overexploitation; and pollution. Ecologists agree that habitat loss is the main driver of biodiversity loss. The average abundance of native species in most major land-based habitats has fallen by at least 20%, mostly since 1900. More than 40% of amphibian species, almost 33% of reef-forming corals and more than a third of all marine mammals are threatened. The loss of biodiversity occurs in all inhabited or habitable areas of the planet, but particularly in areas that can be exploited by man, due to destruction, fragmentation or degradation. According to the IPBES report, it is considered that 75% of the land surface has been altered, 66% of the oceans are affected, and 85% of wetlands have been lost due to human activities. In addition, between 2010 and 2015, 32 million hectares of primary or recovering forests, biodiversity hotspots, would have been lost. The main cause of habitat loss would therefore be due to human activity.

Habitat degradation as accelerated since 1970, with direct exploitation, in particular overexploitation, of animals, plants and other organisms, mainly via harvesting, logging, hunting and fishing, that has had important negative impact for terrestrial, freshwater and saltwater ecosystems. Freshwater, such as rivers, lakes, wetlands, and seas and oceans are most impacted by pollution as well, with untreated sewage, mining waste, acid rain, fertilizers and pesticides that altered ecosystems equilibrium and eventually end up in the food web. Climate change, a direct consequence of human activities, is also becoming an emerging driver of habitat loss. In fact, alteration of temperatures provokes not only the deterioration of living conditions but also the destruction of habitat, engendering migration or even extinction of species. Fragmentation, that causes disruption in wildlife territory and migratory routes, occurs mainly on terrestrial wildlife because of roads and cities development. Dams and other water diversions that siphon off and disconnect waters, are changing hydrology and water chemistry, fragmenting aquatic species habitats.

Replacing Animal Meat with Plant-Based Meat

Feeding humankind and improving the conservation and sustainable use of nature are complementary and closely interdependent goals that can be achieved through sustainable agriculture and livestock systems, the safeguarding of species and their habitats, and ecological restoration. It is fundamental that environmental considerations, as well as human health issues, become a priority for international policy considerations. Alternatives like plant-based meat represent a real opportunity to combat the loss of biodiversity at a lower cost while preserving the quality of life and health of the population currently consuming meat. But while sales of plant-based products replacing conventional meat have evolved, they still represent only a small share of the total meat market, as investment in the sector are still miniscule. In 2018, \$673 million was

invested in companies that use plants to develop the equivalent of meat, egg or milk-based foods in the United States, compared with \$96.6 billion in the agricultural technology sector; if the same amount was redirected toward the development of alternative meat, there would not even need for the \$722 billion financing per year for biodiversity conservation. It is therefore essential for companies to see the investment and development opportunities in this area, taking into account the positive impact both economically and ecologically, and to consider that their interests in biodiversity conservation are not antithetical to their economic profit. Finally there is an urgent need to put in place appropriate institutional and policy frameworks at local, national and international levels, so that the suggested changes for biodiversity conservation can take place not only on the market but also at the level of animal husbandry industry.