Secretariat of the
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CBD

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Biodiversity and Climate Change

Statement by Dr. Ahmed Djoghlaf,
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on the occasion of the International Conference-Workshop on
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According to the Intergovernmental Panel on Climate Change, if temperature increases exceed 1.5-2ºC, 20-30% of plant and animal species assessed will be at risk of extinction. This is especially relevant for those species already at risk due to factors such as low populations, restricted patchy habitats, and limited climatic ranges. Overall, as many as one million species may face increased threats of extinction as a result of climate change.

Climate change has already begun to affect the functioning, appearance, composition and structure of ecosystems. Recently observed changes in the climate have caused changes in species distribution and population sizes, timing of reproduction or migration events, and increase in frequency of pest and disease outbreaks.

Other impacts of climate change on ecosystem functions include the widespread bleaching of corals, instances of wetland salinization and salt water intrusion, the expansion of arid and semi-arid lands at the expense of grasslands and acacia, poleward and upward shifts in habitats, replacement of tropical forests with savanna, and shifting desert dunes. In fact, climate change impacts every ecosystem and these impacts can also reflect on the health of the biodiversity in surrounding ecosystems.

In Asia, for example, up to 50% of biodiversity is at risk due to climate change while as much as 88% of reefs may be lost over the next 30 years. Furthermore, as many as 1522 plant species in China and 2835 plants in Indo-Burma could become extinct.

With regards to agriculture, at the thirteenth meeting of the Subsidiary Body for Scientific, Technical and Technological Advice taking place now in Rome, Parties are considering the integration of climate change impact and response activities within the programme of work on agricultural biodiversity.

The reasons for doing this are clear. A warming of greater than 3°C will have projected negative impacts on agricultural production in all regions while elevated Carbon Dioxide levels are expected to have negative impacts on livestock health, especially in low-Nitrogen environments.

In South-east Asia, precipitation extremes will increase with shifts in the timing of important precipitation events. In Indonesia, for example, climate change is expected increase the chance of a 30-day delay in the onset of monsoon rains by as much as 40% by 2050.

Indigenous and local communities are particularly vulnerable to the negative impacts of climate change. They tend to be among the first to face the adverse consequences of climate change as a result of their dependence on and close relationship with the environment.

Impacts of climate change on indigenous and traditional livelihoods include increased weed infestations in grazing lands throughout the world and increased exposure of livestock to disease. Loss of livelihoods and traditional practices of populations living in vulnerable ecosystems are already significant.

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The Role of Biodiversity in Climate Change Adaptation and Mitigation

Even if greenhouse gas emissions were to decrease significantly tomorrow, climate change would continue to affect ecosystems for hundreds of years due to global climate feedbacks mechanisms. As such, it is critically important that immediate attention is given to adaptation.

Biodiversity contributes to many ecosystem services including the provision of food and fodder, nutrient cycling and the maintenance of hydrological flows. As such, maintaining biodiversity and associated ecosystem functions is an important component of adaptation. Likewise, biodiversity resources, such as land races of common crops, mangroves and other wetlands and vegetative cover, can form an integral part of adaptation plans.

This is particularly true when considering agricultural ecosystems. On average worldwide, in cereal cropping systems, adaptations based on biodiversity resources and sustainable land management, such as changing varieties and planting times, enable avoidance of a 10-15% reduction in yield under 1-2°C local temperature increases.

Other biodiversity-based adaptation activities for agricultural systems include: the conservation of agricultural genetic resources, the reduction of other threats to agricultural biodiversity, the restoration of degraded land with native species, integrated land and water management, disease control programmes for native livestock, and invasive species management planning.

The conservation and the resilience of ecosystems are therefore crucial to climate change adaptations as they constitute coping strategies and thus reduce negative impacts.

Biodiversity also contributes to climate change mitigation. Forests account for as much as 80% of the total above-ground terrestrial carbon while peatlands, which only cover 3% of the world's terrestrial surface, store 30% of all global soil carbon or the equivalent of 75% of all atmospheric carbon. As such, healthy forests and wetland systems have the potential to capture a significant portion of projected emissions.

Each year about 13 million hectares of the world's forests are lost due to deforestation. Deforestation is currently estimated to be responsible for 20% of the annual human induced CO_2 emissions. Because of the role of forests in storing carbon and providing essential goods and services, the conservation of forest biodiversity can considerably reduce emissions and have potential co-benefits for adaptation and sustainable development.

Moreover, sustainable land management in agricultural areas can increase carbon sequestration in the soil through techniques such as integrated pest management, conservation tillage, intercropping, and the planting of cover crops. In fact, when cover crops are used in combination with conservation tillage, soil carbon content can increase annually for a period of up to 50 years. The sustainable management of grazing land can provide similar co-benefits since such lands contain between 10 and 30% of the world's soil carbon stocks.

Another emerging role of biodiversity in greenhouse gas mitigation in the use of bioenergy, which derived from renewable sources, are considered to be carbon-neutral, since in theory the carbon released during the combustion can be taken up by growing plants. However, the greenhouse gas reduction potential ultimately depends on the type of biomass used and the associated production practices. If produced in a sustainable way, the use of biomass to produce bioenergy can efficiently mitigate climate change impact while enhancing biodiversity, especially on degraded lands.

The Role of the Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is the international framework for the conservation and sustainable use of biodiversity and the equitable sharing of its benefits. With 190 Parties, the CBD has near-universal participation among countries that have committed to preserving life on Earth. The CBD seeks to address all threats to biodiversity and ecosystem services, including threats from climate change, through scientific assessments, the development of tools, incentives and processes, the transfer of technologies and good practices and the full and active involvement of relevant stakeholders including indigenous and local communities, youth, non-governmental organizations (NGOs) and women.

As one of the main drivers of change for biodiversity, climate change is reflected in the 2010 Biodiversity Target to significantly reduce the rate of biodiversity loss. Target seven to maintain and enhance resilience of the components of biodiversity to adapt to climate change is crucial in the battle against biodiversity loss.

The Convention's cross-cutting issues on biodversity and climate change and the ecosystem approach allow for the comprehensive consideration of the issue, at all levels, as well as traditional knowledge and the local and indigenous communities. For instance, the CBD Secretariat, with the support of the Government of Canada, developed a web-based guidance on the integration of biodiversity considerations within climate change adaptation planning (http://adaptation.cbd.int/).

The three Rio Conventions—on Biodiversity, Climate Change and Desertification—derive directly from the 1992 Earth Summit. Each instrument represents a way of contributing to the sustainable development goals of Agenda 21 and, in 2001, the Conventions established a Joint Liaison Group (JLG) to enhance the exchange of information and explore opportunities for synergistic activities.

Activities for enhanced synergies on adaptation, as identified by the JLG, include providing focal points of all Conventions with up-to-date information on relevant assessments, research programmes and monitoring tools; collaborating on the development of common messages; developing educational materials; and establishing joint web-based communication tools.

More specifically, the CBD and the United Nations Framework Convention on Climate Change (UNFCCC) collaborate on issues related to the Nairobi work programme on impacts, vulnerability and adaptation to climate change. Further collaborative action is being undertaken on reducing emissions from deforestation in developing countries (RED-DC) and approaches to stimulate action.

The CBD and the United Nations Convention to Combat Desertification (UNCCD) are also joining forces with regards to the biodiversity of dry and sub-humid lands. These ecosystems are vulnerable to the combined effects of biodiversity loss, desertification and climate change. Since these areas are usually dominated by agricultural activities, there are also significant linkages to the CBD programme of work on agro-biodiversity.

I therefore, welcome this workshop as a significant contributor to the implementation of the programmes of work of the Convention on Biological Diversity and I wish you the best of luck over the coming days.
