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## Healthy planet, healthy people – is it achievable or a pipedream?

The United Nations Environment Programme has recently launched the preparation of the seventh edition of the Global Environment Outlook (GEO-7) report. Since the last report, the condition of the environment has further deteriorated, making a transformative change all the more important. Ahead of the new report's publication, our author once again highlights the most urgent problems and fields of action which were established in GEO-6.

**By K. N. Ninan**

The United Nations Environment Programme (UNEP) has been periodically releasing a Global Environment Outlook (GEO) report prepared by experts from around the world. Since 1997, six reports have been released. The theme of the GEO report's sixth edition (GEO-6) is 'Healthy Planet, Healthy People' and aims to provide a science-based source of environmental information to help policy-makers and society to achieve the environmental dimension of the 2030 Agenda for Sustainable Development and the internationally agreed environmental goals, and

implement the multilateral environmental agreements. It also seeks to identify future options to achieve sustainable development by the year 2050.

### State of the environment

The report notes that the overall condition of the global environment has continued to deteriorate despite efforts across all countries and regions. It concludes that unsustainable human activities across the world have degraded the

Earth's ecosystems, thereby endangering the ecological foundations of society.

- While reviewing the state of the global environment it notes that air pollution is the main environmental contributor to the global burden of disease, causing six to seven million premature deaths and welfare losses estimated at five trillion US dollars (USD) annually.
- Globally, economic and population growth continue to be the most important drivers of increases in CO<sub>2</sub> emissions from fossil

fuel combustion. Current nationally determined pledges to reduce emissions constitute only a third of the mitigation required to limit temperature rise to below 2°C above pre-industrial levels. To achieve this goal, emissions need to drop by 40 to 70 per cent globally between 2010 and 2050 and fall to net zero by 2070.

- Populations of species are declining, and species extinction rates are increasing. At present, 42 per cent of terrestrial invertebrates, 34 per cent of freshwater invertebrates and 25 per cent of marine invertebrates are at risk of extinction. Biodiversity loss disproportionately affects the poor and marginalised communities. Illegal trade in wildlife, fisheries and forest products is worth between 90 and 270 billion USD per annum.
- Human-induced rise in greenhouse gas (GHG) emissions is driving rising sea levels, changes in ocean temperatures and ocean acidification. Mass coral bleaching, induced by chronic heat, has damaged many tropical reefs beyond recovery. The collective annual value of coral reefs is estimated at 29 billion USD. Its loss adversely impacts the lives and livelihoods of coastal communities and marine habitats.
- The oceans play an important role in the global and national economies. Fisheries and aquaculture currently generate 252 billion USD annually. Small-scale fisheries support the livelihoods of between 58 and 120 million people. Fish provide 3.1 billion people with over 20 per cent of their dietary protein and contain other essential nutrients.
- Marine litter, including plastics and microplastics, is now found in all oceans, at all depths. It has a significant negative economic impact on a range of coastal activities. Estimates suggest that the input of plastic marine litter linked to domestic waste mismanagement in coastal areas amounts to some eight million tonnes annually. The damage to fishing gear in Europe alone is estimated at over 72 million USD per annum and the annual cost of cleaning polluted beaches at 735 million USD, and levels are rising.
- Land degradation and desertification have increased, with land degradation hotspots covering about 29 per cent of global land, where some 3.2 billion people reside. Investing in avoiding land degradation and restoring degraded land yields immense benefits. A UNEP study suggests that investing one trillion USD in ecosystem restoration of 350 million hectares of degraded lands over the period 2021 to 2030 will yield ecosystem service benefits worth nine trillion USD and remove an additional 13–26 gigatons (Gt) of GHGs out of the atmosphere.
- Urban clusters have grown by a factor of about 2.5 since 1975, and are affecting, among other things, the hydrological cycle and soil functions, causing urban heat islands.
- In most regions, water quality has worsened significantly since 1990, owing to organic and chemical pollution. Some 2.3 billion people still lack access to safe sanitation. Approximately 1.4 million people die annually from preventable diseases, such as diarrhoea, and intestinal parasites. Human illnesses due to antimicrobial-resistant infections may become a major cause of death from infectious diseases world-wide by 2050.
- About 40 per cent of wetlands have been lost since 1970, with serious consequences for lives and livelihoods. The total annual economic cost of wetland losses over the period 1996 to 2015 is estimated at 2.7 trillion USD.
- Resource exploitation has increased beyond the recovery ability of ecological systems. Globally, two out of every five people lack access to controlled waste disposal facilities.
- Global energy consumption is expected to rise significantly by up to 63 per cent as per some estimates during the period 2014 to 2040. Despite the fast deployment and cost reduction of renewables and improvements in efficiency, without ambitious and effective measures, energy-related GHGs will breach the temperature limits set by the Paris climate accord.
- The health co-benefits of reducing GHGs and air pollutants can outweigh the costs of mitigation. For example, global health savings for limiting temperature rise to 2°C are estimated at about 54 trillion USD, compared with global costs of around 22 trillion USD.

### Transformative changes and innovative solutions

Without transformative changes and innovative solutions, the goal of a healthy planet and healthy people will remain a pipedream. The GEO-6 report notes that pathways exist that show that the healthy planet needed for sustainable development can be achieved. They are associated with achieving sustainable consumption and production patterns for energy, food and water to provide universal access to those resources, while preventing climate change, air pollution, land degradation, loss



The Mae Moh coal power plant in Lampang, Thailand. Air pollution is a major burden of disease.

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of biodiversity, water scarcity and overexploitation and pollution of oceans. They include changes in lifestyle and consumer behaviour, cleaner production processes, resource efficiency and decoupling, corporate responsibility and compliance. Here are some examples of measures needed in different sectors and areas:

**Energy sector:** Improving access to clean energy especially among poor and vulnerable sections of the population and enhancing the development and adoption of energy-efficient technologies. Apart from phasing out fossil fuel use, the introduction of low GHG emission technologies including sustainable and equitably produced bioenergy, hydropower, solar and wind energy has to be accelerated. The potential of green hydrogen needs to be tapped. This has important co-benefits for climate, air quality and human health. Pathways that seek to limit temperature rise to 1.5°C–2°C above pre-industrial levels set by the Paris Climate Accord would imply a reduction in the carbon intensity of the global economy by 4–6 per cent per annum between now and 2050.

**Food and agriculture:** Global population is projected to rise to 9.8 billion by the year 2050. To meet the growing food and other needs of an increasing population, food production has to be scaled up by several folds. Sustainable intensification of agriculture which increases crop yields from the same land area with low environmental costs is advocated to





tion is the main environmental contributor to the global

address this challenge. Scenarios achieving the internationally agreed social and environmental targets are typically characterised by doubling the improvement in agricultural yields compared to a business-as-usual scenario but depend heavily on changes in consumption behaviour, improvements in food distribution and reducing food loss and waste, which contributes 8–10 per cent of global GHG emissions. The UN Food and Agriculture Organization (FAO) estimates that around 14 per cent of the world's food production (valued at 400 billion USD) is lost post-harvest; a UNEP report states that another 17 per cent of food is wasted in the retail and household sectors. According to FAO figures, food lost and wasted could feed 1.2 billion people every year.

**Biodiversity and ecosystems:** A UN assessment showed that the world had failed to meet most of the Aichi global biodiversity targets. The post-2020 Kunming-Montreal biodiversity framework for the period 2022–2030 sets out an ambitious plan to implement broad-based action to bring about a transformation in our societies' relationship with biodiversity by 2030, in line with the 2030 Agenda for Sustainable Development and its Sustainable Development Goals, and ensure that, by 2050, the shared vision of living in harmony with nature is fulfilled. Amongst others, the framework calls for reducing the loss of bio-rich areas and critical ecosystems by close to zero by 2030, ensuring the conservation of at least 30 per cent of all terres-

trial areas and inland waters, and coastal and marine areas by 2030, restoring 30 per cent of degraded ecosystems and reducing the threats posed by invasive species by 50 per cent.

**Cities and urbanisation:** Rapid urbanisation is a major driver of global warming, biodiversity loss and pollution. According to a UN report, by 2050, about 68 per cent of the world's population will reside in urban areas. Establishing smart and sustainable cities that rely on modern digital technologies to engage with citizens in addressing key sustainability challenges, such as transportation, consumption patterns, energy, nutrition, water and waste management, investing in mass rapid transit systems based on sustainably produced electricity, increasing the green cover and conserving lakes in urban areas will help in reducing urban heat islands and managing storm water and extreme weather events such as floods.

**Behavioural and lifestyle changes:** Without behavioural and lifestyle changes by individuals and societies it will be difficult to reverse the present trajectory of rapid environmental degradation. Almost 77 per cent of agricultural land is devoted to livestock production which has a large carbon footprint. Shifting towards sustainable and healthier diets is beneficial for protecting the environment and human health. Increasing the consumption of millets which are more nutritious and less water intensive and replacing natural meat with cultured and lab-grown meat are among the measures recommended for reducing pressure on natural resources such as land, water and forests, and reducing GHG emissions.

**Pollution:** The zero-pollution action plan seeks to make ecosystems healthy by drastically reducing air, water and soil pollution by 2050. Tightening regulatory mechanisms and their effective implementation are key to achieving this vision. Sustainable agriculture also requires a reduction in the nitrogen and phosphorus imbalance to reduce pollution of freshwater systems, groundwater, and coastal zones in oceans.

**Data and knowledge:** Improving the data and knowledge base, incorporating traditional knowledge and citizen science to complement science-based information, exploiting the potential of emerging data sources and technologies such as Earth observations, Earth-human system modelling, sensor technology, giving open access to data and international cooperation will help improve monitoring environmental change and formulate effective policies to address the environmental crisis.

**Other measures are:** social and policy innovations; disincentivising unsustainable practices and environmentally harmful subsidies; internalising social and environmental costs; policies to improve resource use efficiency, waste management, reduce toxic substances and solid/plastic waste; financial mechanisms to promote sustainability; nature-based solutions, including those that draw on indigenous knowledge; upscaling local level transformative projects and innovative solutions; investing in ecological infrastructure; improving public awareness about sustainability-driven consumer choices, entrepreneurship, greater corporate social responsibility; creating an enabling environment for niche innovations; removing barriers to change and phasing out of unsustainable products and industrial processes.

An integrated approach can help maximise synergies and minimise trade-offs between sustainability and development goals. For instance, bioenergy crop production will compete with land used for food production and adversely affect food security of the poor and vulnerable sections of the population.

The seventh edition of the Global Environment Outlook (GEO-7) report is titled 'Actions for a Healthy Planet'. Based on the insights provided by the GEO-6 report which showed that current policies have failed to halt environmental degradation, thereby jeopardising achievement of the Sustainable Development Goals and the internationally agreed environmental goals, the GEO-7 report will focus on finding solution pathways and actions in the food, energy, materials/waste, economic and financial sectors so as to address the environmental crisis of climate change, biodiversity loss, pollution and land degradation.

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