



## **Rate of Environmental Damage Increasing Across the Planet but There Is Still Time to Reverse Worst Impacts if Governments Act Now, UNEP Assessment Says**

*Landmark UNEP Assessment Puts State of the World's Environment Under the Microscope*

**Nairobi, 19 May 2016** – The environmental change sweeping the world is occurring at a faster pace than previously thought, making it imperative that governments act now to reverse the damage being done to the planet, says the most authoritative study that UNEP has ever published on the state of the global environment.

Under the title *Global Environmental Outlook (GEO-6): Regional Assessments*, six separate reports provide highly detailed examinations of the environmental issues affecting each of the world's six regions: the Pan-European region, North America, Asia and the Pacific, West Asia, Latin America and the Caribbean, and Africa.

Released ahead of the United Nations Environment Assembly, the regional assessments find that the world shares a host of common environmental threats that are rapidly intensifying in many parts of the world.

In almost every region, population growth, rapid urbanization, rising levels of consumption, desertification, land degradation and climate change have combined to leave countries suffering from severe water scarcity. These worrying trends are also making it increasingly hard for the world to feed itself, warn the reports, which involved 1,203 scientists, hundreds of scientific institutions and more than 160 governments.

The Executive Director of UNEP, Achim Steiner, said: "Today, thanks to this report, we now know more about the state of the world's environment than ever before. With these assessments, UNEP has presented the world with the very latest evidence on the state of the world's environment, providing them with the tools they need anticipate and avoid the damage that is being done to our planet.

"If current trends continue and the world fails to enact solutions that improve current patterns of production and consumption, if we fail to use natural resources sustainably, then the state of the world's environment will continue to decline. It is essential that we understand the pace of environmental change that is upon us and that we start to work with nature instead of against it to tackle the array of environmental threats that face us."

The assessments, which are based on scientific data and peer reviewed literature, find that there is still time to tackle many of the worst impacts of environmental change, such as the damage to marine ecosystems and the rising level of air pollution, which has become one of the world's most widespread environmental health risks.

Across the world, climate change, the loss of biodiversity, land degradation and water scarcity are growing problems that need to be urgently addressed if the world is to achieve the goals set out in the 2030 Agenda for Sustainable Development, the reports state.

## **Regional priorities and key findings:**

### ***Latin America and the Caribbean (LAC)***

The future of the region's economies, as well as the ability of countries to fight poverty and reverse inequality, depends heavily on harnessing the region's natural capital sustainably while mitigating and adapting to climate change, and decoupling economic growth from resource consumption.

#### *Greenhouse gas emissions*

The GEO-6 report on LAC states that greenhouse gas emissions are growing in the region as a result of urbanization, economic growth, energy consumption, land use changes and other factors.

Agriculture has had a strong impact on the emission of nitrous oxide and carbon dioxide. Nitrous oxide emissions – from soils, leaching and runoff, direct emissions, and animal manure – increased by about 29 per cent between 2000 and 2010. The abundance of beef and dairy cattle in the region has also increased methane emissions, which grew by 19 per cent between 2000 and 2010.

#### *Air pollution*

Most of the cities in the region for which data are available have concentrations of particulate matter (PM) above World Health Organisation (WHO) guidelines. Monterrey in Mexico, for example, has measured concentrations of PM2.5 of 85.9, well above the WHO recommended limit of 20.

The region's urban population increased by more than 35 million people between 2010 and 2015, and is expected to climb to a total of 567 million persons by 2025. More than 100 million people already live in areas where they are at risk from air pollution.

#### *Climate Change*

Andean glaciers, which provide vital water resources for millions of people, are shrinking and an increase in the intensity and frequency of extreme weather events are affecting economies, the report notes.

The LAC region has, however, made progress on the reduction of ozone-depleting substances and the elimination of lead in gasoline, reducing significantly the impacts on the ozone layer and lead concentrations in air.

## ***Asia and the Pacific***

Unprecedented economic growth, which has lifted millions out of poverty in Asia and the Pacific, is putting heavy pressure on ecosystems. Increasing unsustainable consumption patterns have led to worsening air pollution, water scarcity and waste generation, threatening human and environmental health. Increased demand for fossil fuels and natural resources - extensive agriculture, palm oil and rubber plantations, aquaculture and the illegal trade in wildlife – are causing environmental degradation and biodiversity loss.

### *Natural disasters*

Last year, the Asia Pacific region continued to be the world's most disaster prone region. About 41 per cent of all natural disasters reported over the last two decades occurred in the Asia-Pacific region, which also accounted for 91 per cent of the world's deaths attributable to natural disasters in the last century.

The number of record-breaking rainfall events increased by 56 per cent over the 1981 – 2010 period. By the 2070s the top Asian cities in terms of population exposure to coastal flooding will be Bangkok, Dhaka, Guangzhou, Kolkata, Mumbai and Shanghai, threatening hundreds of millions of people with displacement.

### *Deforestation*

In Southeast Asia, the average area deforested annually is more than 1 million hectares, resulting in the release of hundreds of millions of tonnes of carbon dioxide every year between 2005 and 2015.

### *Water*

The contamination of water sources by human and industrial waste, including pharmaceutical and personal care products, is a major problem in the region, the GEO-6 reports state. It is estimated that about 30 per cent of the population uses drinking water contaminated by human feces.

Water-related diseases and unsafe water contribute to 1.8 million deaths annually and 24.8 million disability-adjusted life years in the region.

Unsafe sanitation, disposal of untreated wastewater and runoff of agrochemicals are responsible for a rise in water-borne diseases, especially in Asia's population-dense urban areas.

### *Waste*

Uncontrolled dumping, which is still the main waste disposal method in the region, is also a major source of disease. In Mumbai, for example, about 12 per cent of total municipal solid waste is burned either openly on the streets or in landfills, a practice that releases black carbon, dioxins and carcinogenic furans.

Population growth, a growing middle class and urbanization have led to higher emissions and growing amounts of ill-managed waste, the report states. Rapid economic growth and intensified industrialization has also led to increasingly unhealthy, polluting and carbon-intensive lifestyles.

### *Growing consumption*

The main driver for accelerating domestic material consumption is the expanding middle class (from 21 per cent in 1990 to 56 per cent in 2008).

The size of the global middle class is projected to increase from 1.8 billion (2009) to 4.9 billion in 2030 with most of this growth coming from Asia. The OECD predicts that the middle class's global spending will grow to \$56 trillion by 2030 from \$21 trillion today and that more than 80 per cent of this increase is expected to come from Asia and the Pacific.

### **West Asia**

A rise in the amount of degraded land and the spread of desertification – the “most critical challenges” in West Asia – are having profound economic and environmental impacts on the region, the UNEP report on the region states. West Asia is suffering from an increase in water demand, overexploitation of groundwater resources and deteriorating water quality, as well as unsustainable patterns of consumption that threaten the region's ability to secure its sources of food, water and energy.

#### *Water*

The scarcity of the region's renewable water resources also poses a major challenge in the region, denting West Asia's ability to produce enough food to meet the growing population's needs. High population growth and rolling conflicts mean that the carrying capacity of the land has become too low to support people with freshwater and food, the report says.

Water demand in the region is increasing while water quality is deteriorating. Ground water resources are being overexploited. As a result, only four out of 12 countries in West Asia are above the water scarcity limit of 1000 cubic metres per person per year.

#### *Conflict and displacement*

Continuous conflict and the mass displacement of people throughout the region are also triggering severe environmental impacts that are endangering the health of people. Heavy metals from explosive munitions and radiation from missiles have leached into the environment as a result of the region's conflicts. The 2.97 million refugees in Lebanon, Jordan, Yemen and Iraq are placing an immense environmental burden on the region, producing about 1,440 tonnes of waste per day in 2015, overwhelming governments and increasing the risk of disease outbreaks.

#### *Health*

The top environmental risk factors for human health in the region are air pollution; lack of access to safe water and adequate sanitation; climate change; exposure to hazardous chemicals and wastes; emergencies and disasters; and exposure to radiation.

In the West Asia region, more than 229,500 people die prematurely each year because of specific environmental risks and 8.24 million healthy life years are being lost because of these risks. This means every individual in the West Asia region is losing 17 days of life annually because of modifiable environmental risk factors.

Almost 90 per cent of municipal solid waste in West Asia is disposed of in unlined landfill sites and leachate from these is contaminating scarce groundwater resources.

Rising populations, urbanization, economic growth, burning of fossil fuels and conflict all place enormous stress on the environment and harm human health. It is estimated that air pollution alone, which has increased steadily over the past two decades, was responsible for more than 70,000 premature deaths in West Asia in 2010.

Other top issues in the region are climate change, which will exacerbate water stress in the region, and biodiversity, which is under threat from urban expansion, pollution, the overconsumption of biological resources and changes in habitat.

## ***Africa***

Land degradation, air pollution, and the provision of sanitation and safe drinking water are among the main problems on the continent. Many of the region's fisheries, both inland and marine, face overexploitation from illegal, under-reported and unregulated fishing. The continent has an opportunity to use its large young population to drive its growth. Low-carbon, climate-resilient choices can develop the continent's infrastructure, accelerate industrialization, increase energy and food production, and promote sustainable natural resource governance.

### *Indoor Air pollution*

Indoor air pollution is responsible for 600,000 premature deaths every year in Africa. The continent's reliance on the use of biomass for cooking, lighting and heating means that 90 per cent of the region's population is exposed to this health threat.

### *Water and sanitation*

Thirty-two percent of Africa's population lacks access to potable water, and 70 per cent lack adequate sanitation facilities, increasing the risk of disease outbreaks. Water-borne diarrheal infections are responsible for almost 8 per cent of annual deaths in the region.

Poor sanitation facilities can lead to the contamination of much-needed water resources. This is particularly true for groundwater.

The quality of water varies across the continent, depending on the climatic and geological setting. Moreover, there is a big difference between rural and urban areas: in urban areas, 90 per cent of people use imported water, and more than 60 per cent have piped water; in rural areas, however, piped water is virtually non-existent in the poorest 40 percent of households, and less than half of the population use any form of improved source of water.

In some regions on the continent, large-scale irrigation, mining and industrial activities are making groundwater increasingly unfit for consumption as high pollutant loads from heavy metals and persistent organic pollutants leach into the environment.

### *Land, forests and food*

In Africa, which is the second largest continent in the world, land is the most prized asset for food production, nutritional health and economic development. Worryingly, about 500 000 square meters of land in Africa is being degraded due to soil erosion, salinization, pollution and deforestation. This land degradation can damage agricultural productivity, nutrition and human health.

A growing population and a rise in the demand for firewood will mean that forest cover in Africa is likely to continue shrinking, declining to less than 600 million hectares by 2050. Over cultivation, inefficient irrigation practices, overgrazing, the overexploitation of resources, uncontrolled mining activities and climate change will further degrade land in Africa, the UNEP report states.

This will lead to reduced agricultural productivity, reduced food security, which can increase migration and spread disease, the destruction of infrastructure, such as roads and bridges, and high rates of poverty.

### **North America**

Environmental conditions in the region have improved due to policies, institutions, data collection and assessment, and regulatory frameworks. Air quality, in particular, continues to improve in response to concerted policy action and favorable trends in technology and energy markets. Drinking water quality is extremely good, although water scarcity is of increasing concern in the region. Meanwhile, a rich network of well-managed protected areas is in place and is helping to conserve biological diversity.

However, environmental challenges have emerged in recent years. Climate change is generating impacts across the region, and aggressive hydrocarbon extraction methods bring the possibility of increased emissions, water use and induced seismicity. The coastal and marine environment is under increasing threat from nutrient loads, ocean acidification, ocean warming, sea level rise, and new forms of marine debris.

### *Air and Water Quality*

The estimated public health benefits of the region's improvement in air quality stands at about \$2 trillion. However, these improvements are not evenly distributed, with approximately 140 million people exposed to pollution above regulatory thresholds.

Drinking water quality is generally extremely good in the region, but shows signs of backsliding in some areas. Negative trends are chiefly the result of degraded infrastructure and weak governance. These isolated water quality incidents threaten human health, in some cases acutely.

New chemical contaminants and new sources of traditional pollutants are emerging as air and water quality problems that are of concern to public health and the environment.

### *Climate change*

Climate change is damaging the environment, human health and well-being and, in some cases, human security in the region.

A prominent five-year drought around the state of Texas ended in the spring of 2015 with devastating floods. The persistent drought conditions migrated north and westwards to California, the source of a significant proportion of US food production. Findings suggest that global warming exacerbated the drought by approximately 15-20 per cent.

Hurricane Sandy was directly responsible for approximately 150 deaths and \$70 billion in losses. The 30 centimetres of sea level rise off New York City since 1900 likely expanded Hurricane Sandy's flood area by approximately 65 square kilometres, flooding the homes of more than 80 000 additional people in New York and New Jersey alone.

The prospect for impacts such as these to worsen in both the near and long term constitutes a priority issue for North America. Efforts to mitigate climate change through reductions in greenhouse gas emissions and enhanced carbon sequestration are beginning to show tangible results and to create a foundation for potentially major advances.

Solar deployment, for example, has increased dramatically, capturing 40 per cent of the market for new electric generating capacity in the US in the first half of 2015. Solar capacity now has reached 22.7 gigawatts nationwide. Solar now powers 4.6 million homes and individual homeowner and utility-scale installations are becoming more common.

### *The Arctic*

The Arctic is experiencing a profound transformation that is having important impacts on North America and the world as a whole. These rapid changes in the Arctic are driven largely by interacting forces of climate change and increased human activities. As one of the first areas of the world to experience the impacts of climate change, the Arctic region serves as a barometer for change in the rest of the world.

Warming in the Arctic has increased at twice the global average since 1980. There are other worrying trends. Over the past twenty years, for example, there has been a progressive and dramatic decrease in summer sea ice extent, which has led to an increased surface area of blue water during the summer months.

The largest contributions to global glacier ice loss during the early 21st century were from glaciers in Alaska, the Canadian Arctic, and the periphery of the Greenland ice sheet, as well as in the Southern Andes and Asian mountains. Together these areas account for more than 80 per cent of the total ice loss.

The melting of sea ice has also created new expanses of open ocean, allowing large populations of phytoplankton to bloom and alter the marine food chain.

### **Overall Recommendations**

- Strengthen intergovernmental coordination at the regional and sub-regional level will improve governance issues that are of regional priority.
- Improve gathering, processing and sharing of data and information to inform decision-making.

- Enhance sustainable consumption and production to reduce environmental pressures by addressing drivers associated with manufacturing processes and consumer demand
- Harness natural capital in a way that does not damage ecosystems.
- Implement measures to reduce pollution and other environmental pressures.
- Invest in urban planning, such as through the better use of environmentally sound infrastructure and clean transport, which can turn the urban challenge into opportunities for sustainable development.
- Governments will likely need to find innovative solutions to allow for the decoupling of economic growth and resource consumption.
- Reduce dependence on fossil fuels, and diversify energy sources.
- Greater investments are needed in environmental accounting systems to ensure external costs are addressed, and in foresight processes to identify possible future risks, opportunities and conflicts.
- Enhance international cooperation on climate, air quality and other environmental issues.
- Respond to environmental health risks.
- Build resilience to natural hazards and extreme climate events.
- Low-carbon, climate-resilient choices in infrastructure, energy and food production coupled with effective and sustainable natural resource governance are key to protecting the ecological assets that underpin a healthy society.

**NOTE TO EDITORS:**

Pan-European Region:

The *GEO-6 Assessment for the pan-European region* has been prepared by UNEP and UNECE with support from the European Environment Agency (EEA). The assessment is backed by a large body of recent, credible scientific evidence and has been developed through a robust intergovernmental and multi-stakeholder process including regional-wide consultations to set the priorities for the assessment. Hundreds of experts from the region including from governments, academia and key stakeholders in the region have participated in its development.

At the Seventh Environment for Europe Ministerial Conference held in Astana (Kazakhstan) in 2011, ministers committed to establish a regular assessment process for the pan-European region based on a Shared Environmental Information System (SEIS). As a result, the *GEO-6 Assessment for the*

*pan-European region will be launched on 08 June 2016* at the eighth Environment for Europe Ministerial Conference in Batumi, Georgia. At the conference the assessment will serve to inform the discussion on keeping the environment under review for the pan-European region.

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### **About GEO-6**

The regional assessments will inform the Global Environment Outlook (GEO-6), which will be released before 2018 and will provide the most authoritative assessment of the state, trends and outlook of the global environment.

### **About UNEA**

The United Nations Environment Assembly (UNEA) is the world's most powerful decision-making body on the environment—the de-facto “Parliament for the Environment”—and responsible for tackling some of the most critical issues of our time. The assembly holds the power to dramatically change the fate of the planet and improve the lives of everyone, impacting everything from health to national security, from the plastic in our oceans to the trafficking of wildlife. Thanks to UNEA, the environment is now considered one of the world's most pressing concerns alongside other major global issues such as peace, security, finance and health.

This year, hundreds of key decision makers, businesses and representatives of intergovernmental organizations and civil society will in May gather at UNEA-2, taking place at the United Nations Environment Programme headquarters in Nairobi, for one of the first major meetings since the adoption of the 2030 Agenda for Sustainable Development and the Paris Climate Agreement. The resolutions passed at UNEA-2 will set the stage for early action on implementation of the 2030 Agenda, and drive the world towards a better future, more-just future. UNEA-2 is also inclusive, with [myunep.org](http://myunep.org) allowing citizens to feed their concerns into the meeting and take personal ownership of the collective challenges we face.

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