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Environmental Status in the Present Scenario A Review

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ABSTRACT

Climate change, or global warming, is the greatest environmental threat we've ever faced. How we respond to this crisis will greatly impact both current and future generations and all other species.The global carbon dioxide equivalent of greenhouse gases (GHG) in the atmosphere has exceeded 400 parts per million. This level is considered a tipping point. "Carbon dioxide levels today are higher than at any point in at least the past 800,000 years. The last time the atmospheric CO2 amounts were this high was more than 3 million years ago, when temperature was 2°–3°C (3.6°–5.4°F) higher than during the pre-industrial era, and sea level was 15–25 meters (50–80 feet) higher than today." "There is alarming evidence that important tipping points, leading to irreversible changes in major ecosystems and the planetary climate system, may already have been reached or passed. Ecosystems as diverse as the Amazon rainforest and the Arctic tundra, may be approaching thresholds of dramatic change through warming and drying. Mountain glaciers are in alarming retreat and the downstream effects of reduced water supply in the driest months will have repercussions that transcend generations. In October 2018 the IPCC issued a special report on the impacts of global warming of 1.5°C, finding that limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society. With clear benefits to people and natural ecosystems, the report found that limiting global warming to 1.5°C compared to 2°C could go hand in hand with ensuring a more sustainable and equitable society. While previous estimates focused on estimating the damage if average temperatures were to rise by 2°C, this report shows that many of the adverse impacts of climate change will come at the 1.5°C mark. The report also highlights a number of climate change impacts that could be avoided by limiting global warming to 1.5°C compared to 2°C, or more. For instance, by 2100, global sea level rise would be 10 cm lower with global warming of 1.5°C compared with 2°C. The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5°C, compared with at least once per decade with 2°C. Coral reefs would decline by 70-90 percent with global warming of 1.5°C, whereas virtually all (> 99 percent) would be lost with 2°C.

Keywords: environmental, scenario, status, climate, global, warming, ecosystem, temperature

I. INTRODUCTION

Although the Asia-Pacific region has thus far managed to preserve a certain harmony with nature, many parts of the Region are now being faced with problems of pollution and degradation of natural resource bases associated with such factors as steep economic growth, expanding populations, and concentration of population in cities. There are deep worries about new environmental problems[1.2] on global or regional scales, such as climate change and acid deposition. The progress of industrialization has been accompanied by a steady rise in emission levels. In China, for example, SO2 emissions surged from 15.23 million tons in 1985 to 17.95 million tons in 1993. However, there have also been cases of substantial abatement of pollution once industrialization has progressed to a certain extent. In the Republic of Korea, for example, SO2 emissions improved considerably in the late 1980s. An analogous improvement was achieved by Japan in the 1970s; yearly SO2 emissions, which probably topped 4.8 million tons in the late 1960s, have been reduced to about 1 million tons since the 1980s. These cases show that air and water pollution from industrial processes can be largely corrected if the proper technical measures are taken. However, there also exist problems for which substantial improvement has not been achieved even in countries possessing sophisticated technology, as well as problems which surface along with the emergence of new technology. In Japan, groundwater has been polluted by chemical substances (such as trichloroethylene) used in the fabrication of semiconductors. Similarly, many Asian countries are grappling with problems associated with the storage and disposal of large quantities of hazardous chemical substances used in semiconductor fabrication. A great risk is also posed by marine pollution by oil tankers in the Straits of Malacca and other bodies of water in Asia.Furthermore, industrialization is being linked to the spread of mass-production and consumption-oriented lifestyles throughout Asia. Burial of the vast quantities of resulting waste in inland and coastal areas is having an adverse impact on the natural environment. In some cases, groundwater is being polluted by waste stored in the open.[3,4]

Primary energy consumption in the Asia-Pacific region in 1992 was estimated at 1.9 billion TOE (tons of oil equivalent), or 24 percent of the global total. It was also estimated that the region had already come to account for 27 percent of the total atmospheric emission of carbon dioxide by the same year.Besides becoming one of the biggest causes of climate change, the region could also become among the most severely affected by them. It has a high concentration of population and social capital in coastal areas, and contains many island countries. For these reasons, it is also a focus of concern about the prospect of a sea level rise. In island countries that rise only a few meters above sea level,[5,6] what is at stake is nothing less than the survival of the state, which itself may bear almost no blame for emission of greenhouse gases. In many areas of the region, there is concern about worsening soil degradation and corresponding decline in agricultural productivity. In such areas, climate change induced by increasing energy consumption could deal a further blow to such productivity.

Although the developed countries of the West are working to reduce them, volumes of SO2 emissions are expected to continue to rise in the Asia-Pacific region due to increased energy consumption and insufficient countermeasures for atmospheric pollution. ESCAP has estimated that the region's emission of this pollutant was 35 million tons in 1990. This would be the highest such figure in the world, exceeding those of North America and Europe.With the exception of certain areas, acid rain has not yet had as great an impact on the ecosystem in the region as in Europe. According to the World Bank, however, soil in southern China and Southeast Asia tends to have a low capacity to act as a buffer against acid rain, and there is a concern about impact on the ecosystem in these areas.[7,8]

According to UN statistics, the 1992 population of the Asia-Pacific region was over 3.1 billion, or more than half of the total world population. Moreover, the population is rapidly concentrating to cities. In many cities, improvement of the social infrastructure cannot keep abreast of the influx, and serious environmental problems[9,10] are surfacing. Besides pollution from domestic sewage and household waste as well as noise and air pollution due to traffic congestion, there are problems of deterioration of the living environment due to uncontrolled development of slums and the shrinkage of fertile farmland and forests by urban sprawl.The group most affected by worsening environment is generally the urban poor, who are

liable to receive the brunt of the impact of industrial pollution in the vicinity of factories without sufficient anti-pollution measures, as well as of unsanitary water and inadequate hygiene-related facilities.Economic growth and rising income levels are being accompanied by a rapid increase in the number of motor vehicles on the road. The number of passenger cars per thousand people in Japan was 283 in 1990. In Singapore and Malaysia the number exceeds 100, and in the Republic of Korea has reached 50. The Republic of Korea and Malaysia have entered the phase of full-fledged motorization that could culminate in the same level of ownership. However, there has not been a corresponding expansion of the capacity of mass transit and roads, with the result of increasing traffic congestion and the associated air and noise pollution in the major cities.[11,12]

Against this background of fast-paced industrialization and urbanization, environmental problems deriving from poverty are also coming to the fore in the Asia-Pacific region. ESCAP estimates that the region is home to about 72 percent of the world's farming population, in spite of the fact that it contains only about 30 percent of the world's arable land. In addition, population is increasing much more rapidly than the area of land under cultivation, resulting in a decrease in average acreage per capita of farming population and increase in farmers without land.The consequences of this situation, [13,14]which include soil erosion due to cultivation of hillsides and other land of low productivity and the practice of unsustained farming methods on forest land, are factors behind falling agricultural productivity, deforestation, and soil degradation. ESCAP figures indicate that soil degradation is affecting from 10 to 50 percent of the land area of the countries of East and South Asia, and that 36 percent of the arable land in Asia is being desertified.

Deforestation continues to be a serious problem in the region. According to the FAO, 3.9 million hectares of forestland in the region were lost between 1981 and 1990. This translates into an average annual loss rate of about 1.2 percent, higher than in any other tropical region.[15,16]

II. DISCUSSION

Our environment faces several problems, and many of these seem to be worsening with time, bringing us into a time of a true environmental crisis. It is therefore becoming increasingly important to raise awareness of the existence of these issues, as well as what can be done to reduce their negative impact. Some of the key issues are:

1) Pollution

Pollution of the air, water and soil caused by toxins such as plastics, heavy metals and nitrates, caused by factors such as toxins and gases released by factories, combustion of fossil fuels, acid rain, oil spill and industrial waste.[17]

2) Global warming

The emission of greenhouse gases due to human activity causes global warming, which in turn causes an increase in temperature that then leads to rising sea levels, melting of polar ice caps, flash floods and desertification.

3) Overpopulation

We are facing a shortage of resources such as food, water and fuel to sustain the rising global population, particularly in developing countries. Intensive agriculture attempting to lessen the problem actually leads to more damage through the use of chemical fertilizers, pesticides and insecticides.

4) Waste disposal

An excessive amount of waste is produced and dumped in the oceans. Nuclear waste is particularly dangerous, as well as plastics and electronic waste.

5) Ocean acidification

The increase in the production of carbon dioxide by humans causes the oceans' acidity to rise, which has a negative impact on marine life.

6) Loss of biodiversity

Species and habitats are becoming extinct due to human activity. This causes an imbalance in natural processes like pollination and poses a threat to ecosystems – coral reef destruction is particularly affected.

7) Deforestation

Loss of trees in order to make space for residential, industrial or commercial projects means that less oxygen is produced, and temperature and rainfall are affected.

8) Ozone layer depletion

Pollution caused by chlorofluorocarbons (CFCs) in the air creates a hole in the ozone layer, which protects the earth from harmful UV radiation.

9) Acid rain

Pollutants in the atmosphere such as sulfur dioxide and nitrogen oxides cause acid rain, which has negative consequences for humans, wildlife and aquatic species.

10) Public health issues

Lack of clean water is one of the leading environmental problems currently. Pollutants in the air also cause issues such as respiratory disease and cardiovascular disease.[18]

III. RESULTS

Mother Earth got a bad health report from the United Nations this week, and the scientific team that conducted the exam didn't shirk from delivering the bad news. The word "dire" comes to mind. The Earth's condition has continued to deteriorate since the first global outlook was prepared in 1997 and "urgent action at an unprecedented scale necessary to arrest and reverse this situation," the team warned. Earth's ailments are treatable, but not for a lot longer if people don't make fundamental changes in what they consume, how they create energy, dispose of waste, and generally decrease the human footprint that is degrading air, water, and land. Overall, the Earth suffers from land degradation; biodiversity loss; air, land and water pollution; and the effects of climate change—and must prevent and manage further risks and disasters. Without changes, the situation looks bleak for all of its inhabitants. A major extinction event is underway, compromising the globe's "ability to meet human needs. Biodiversity helps regulate climate, filters air and water, forms soil, and mitigates the effects of natural disasters, the team explains.[19,20] Yet, populations of species are declining and extinction rates are rising. Presently, 42 percent of land-based invertebrates, 34 percent of freshwater invertebrates, and 25 percent of marine invertebrates are at risk for extinction. Biodiversity disproportionately affects women, children, and the poor. The livelihoods of 70 percent depend directly on natural resources. As for the Earth itself, 10 out of 14 land habitats have seen a decrease in vegetation productivity. Forty percent of wetlands have been lost to agriculture and urban development since 1970. Farm land is becoming less fertile and useful, due in part to inefficient and unsustainable farming systems. Degraded "hot spots," no longer able to easily grow crops, now account for 29 percent of all land areas. Deforestation has slowed, but continues. Genetic diversity is in decline, threatening food security. In most regions, water quality has worsened "significantly" since 1990, poisoned by chemical pollution. One in three people still lacks access to safe sanitation.[21,22]

IV. CONCLUSIONS

As extreme weather events such as cyclones and heatwaves increase in frequency and ferocity, they threaten children's lives and destroy infrastructure critical to their well-being. Floods compromise water and sanitation facilities, leading to diseases such as cholera, to which children are particularly vulnerable. Droughts and changing global rainfall patterns are leading to crop failures and rising food prices, which for the poor mean food insecurity and nutritional deprivations that can have lifelong impacts. These also have the potential to destroy livelihoods, drive migration and conflict, and cripple opportunities for children and young people. Children are the most vulnerable to diseases that will become more widespread as a result of climate change, such as malaria and dengue fever. Close to 90 per cent of the burden of disease attributable to climate change is borne by children under the age of 5. The drivers of air pollution are the same as those of climate change. Approximately two billion children live in areas where air pollution levels exceed standards set by the World Health Organization (WHO) — causing them to breathe toxic air and putting their health and brain development at risk. Every year, over half a million children under the age of 5 die from air-pollution-related causes. Even more will suffer lasting damage to their developing brains and lungs.[23]

Solution

Climate action provides an exceptional opportunity to unlock massive economic and social benefits that can help us achieve the Sustainable Development Goals (SDGs). Addressing the challenges of environmental sustainability is imperative for UNICEF to fulfil its mandate and protect the world's most vulnerable children.

UNICEF works with partners at global and local level to ensure that children can live in a safe and clean environment. Our actions are structured around four approaches:

- Making children the centre of climate change strategies and response plans
- Recognizing children as agents of change
- Protecting children from the impact of climate change and environmental degradation
- Reducing emissions and pollution[24]

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