From the Desk of the Patron

Towards a Sustainable World

Climate change significantly magnifies disaster risk by both increasing the frequency and intensity of hazards and reducing the resilience of households and communities. This occurs through the alteration of climatic conditions over extended periods due to natural causes or human activity. Climate change is already altering weather patterns, leading to more severe and frequent weather-related hazards. The World Meteorological Organization (WMO) predicts that global temperatures are likely to reach record levels in the next five years, driven by greenhouse gases and natural events like El Niño. There is a 66% chance that the annual average near-surface global temperature between 2023 and 2027 will exceed 1.5°C above pre-industrial levels for at least one year, and a 98% chance that at least one of these years will be the warmest on record. Climate change can shift the geographic distribution of weather-related hazards, creating new patterns of risk. For instance, from 2023 to 2027, increased rainfall is expected in the Sahel, northern Europe, Alaska, and northern Siberia, while the Amazon and parts of Australia may experience reduced rainfall. These changes can disrupt traditional farming practices and increase disaster risks in previously unaffected regions. In Ghana, farmers have reported that 30 years ago, rainfall patterns were predictable, enabling them to plan their farming activities accurately. However, the variability in rainfall patterns has disrupted traditional farming practices, such as Nnoboa, a communal labour system. The inconsistency in rainfall has forced farmers to rely more on nuclear families or hired labour, reflecting a shift towards more individualistic farming practices. The number of people affected by extreme droughts worldwide could double in less than 80 years. This would severely impact the livelihoods of rural populations and potentially increase migration. Water storage in natural lands is also expected to decline significantly, particularly in the Southern Hemisphere. Coastal flooding could threaten assets worth up to 20% of global GDP by 2100. Populations in coastal areas are growing faster than the global average, with northwest Europe and Asia identified as global hotspots for flooding. By 2050, an estimated 500 million people could be exposed to vector-borne diseases like malaria due to the expansion of mosquito habitats. Climate change, urbanization, and deforestation have increased the populations of disease-carrying animals like bats and rodents, leading to higher transmission rates of zoonotic diseases. By 2030, the fire season in regions already prone to wildfires could be extended by up to three months. For example, Western Australia could experience an additional three months of high wildfire potential days. While attributing individual tropical cyclones to climate change is challenging, there is a clear trend of more intense storms. With global warming of 2.5°C, the occurrence of the most devastating storms could double compare to current levels. Addressing these risks requires comprehensive adaptation and mitigation strategies to enhance the resilience of vulnerable populations and manage the evolving patterns of climatic hazards.

Numbeo is a valuable resource for gathering and analyzing user-contributed data about cities and countries around the world. It leverages crowdsourced information to provide insights on various aspects such as cost of living, crime rates, healthcare quality, pollution levels, and more. According to Oman Daily Observer, Muscat, the capital city of Oman, was named the second cleanest city in Asia published in a recent Numbeo report. The Numbeo Pollution Index assesses a range of pollution-related characteristics in cities across the globe, such as air and water pollution, waste management, hygienic conditions, light and noise pollution, green areas, and overall comfort to pollution levels. The impressive score on the Pollution Index, 36.2 reflects its excellent air quality, drinking water accessibility, waste management, and green spaces. Muscat's commitment to sustainability, recycling programs, and reducing carbon emissions contributes to its high ranking. This recognition highlights Muscat's efforts to maintain a clean and environmentally friendly city for residents and visitors.

Addressing environmental issues such as water and air pollution, ensuring safe drinking water, and managing waste in cities of India requires a multifaceted approach involving various remedial measures. Here are some strategies for each area: Waste water Treatment: Installation and upgradation of sewage treatment plants to ensure industrial and domestic wastewater is treated before being discharged into water bodies. Use of advanced treatment methods like activated sludge, membrane bioreactors, and constructed wetlands. Pollution Prevention: Implementation of best management practices (BMPs) for agricultural

activities to reduce runoff of pesticides and fertilizers. Promotion of the use of biodegradable products and reduce the use of harmful chemicals. Riparian Buffer Zones: establishment of vegetation along water bodies to filter pollutants from runoff before they enter the water. Public Awareness and Education: Conduct of campaigns to educate the public about the impacts of water pollution and encouragement for responsible behaviour. Emission Control: Installation of pollution control devices like scrubbers, filters, and catalytic converters on industrial emissions and vehicles, promotion for the use of clean energy sources like wind, solar, and natural gas over coal and oil. Regulations and Standards: Enforcement of strict air quality standards and emissions regulations for industries and automobiles, monitoring of air quality regularly and action against violators. Green Infrastructure: Increase of green spaces and urban forests to absorb pollutants and cleaner air, encouragement of rooftop gardens and green walls in urban areas. Public Transportation and Mobility: Development of efficient public transportation systems to reduce the number of vehicles on the road, promotion of cycling, walking, and carpooling. Water Purification Systems: Use of filtration, chlorination, UV treatment, and reverse osmosis systems to ensure water safety. Regular test of water sources for contaminants and follow-up treatment. Protecting Water Sources: Implementation of watershed management practices to protect water sources from contamination, regulation of activities around water sources to prevent pollution. Infrastructure Improvement: Upgradation and maintenance of water distribution systems to prevent leaks and contamination, proper sanitation facilities to prevent contamination of water supplies. Community Involvement and Education: Education to communities about the importance of safe drinking water and proper sanitation practices, encouragement for rainwater harvesting and the use of water purification methods at the household level. Reduce, Reuse, Recycle (3Rs): Promotion of waste reduction at the source by encouraging the use of reusable products and packaging, implementation of recycling for various materials such as plastics, metals, paper, and glass. Proper Disposal methods: Development and maintanance of sanitary landfills with proper liners and leachate collection systems, promotion of composting of organic waste to reduce landfill burden. Waste-to-Energy: Implementation of technologies to convert waste into energy through processes like incineration and anaerobic digestion. Public Awareness and Participation: Conduct of campaigning programmes to educate the public about the importance of proper waste management, encouragement to community participation in waste collection and segregation programmes. Now a days, some cities are implementing environmental measures to some extent. However, more involvement is required in implementing the above-mentioned measures to identify themselves at par with Singapore and Muscat of Asian cities. Further, by implementing these measures, communities can significantly mitigate environmental pollution and ensure a healthier and sustainable environment.

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