



WORLD HEALTH DAY - 7th April, 2022 * THEME: OUR PLANET, OUR HEALTH

Amid the pandemic, a polluted planet, increasing diseases like cancer, asthma, and heart ailments, on World Health Day 2022, World Health Organization (WHO) urges global attention on urgent actions needed to keep humans and the planet healthy. The clarion call from Pan American Health Organization (PAHO), WHO and the Partners presents a unique opportunity for a green and healthy recovery from the COVID-19 pandemic, that puts the health of individuals and the planet at the center of action and fosters a movement to create societies focused on well-being.

Honourable Prime Minister Shri Narendra Damardardas Modi Jee, an Architect of Modern India and the UN's Champion of the Earth Award has pioneered the Government of India's (GOI) work in the health sector. Honourable PM Modi Jee expressed gratitude to the healthcare workers for keeping the "planet protected" while extending greetings on the occasion of World Health Day. The GOI is working tirelessly to augment India's health infrastructure. The focus is on ensuring good quality and affordable healthcare to all citizens.

Every Indian is proud of the fact that our Country is home to the world's largest healthcare scheme: Ayushman Bharat. The PM Jan Aushadhi Scheme has benefitted a lot of people. The focus is on affordable healthcare which ensures significant savings for the poor and middle class while the Ayush network is being strengthened to further boost the overall wellness of the people. India will soon introduce special Ayush visa category to facilitate people to travel to India for treatment in Ayurveda and other traditional Healthcare systems of medicine which have proved their efficacy for the treatment of various non-communicable diseases, musculo skeletal disorders, geriatric problems and mitigation of mild to moderate COVID-19 risks. "Heal in India" shall become a big brand of this decade. The Government has developed a network of Ayush parks to encourage promotion, research and manufacture of Ayush products. Special Ayush mark will be applied to the highest quality Ayush products made in the Country. Many patients can regain their vision after Ayurvedic treatment. "Ayush Aahar" will greatly facilitate producers of herbal nutritional supplements. Honourable PM on numerous occasions has advocated for promotion of Ayurveda and other traditional systems of medicine.

Honourable Prime Minister Modi Jee also lauded the transformation of the medical education sector in the last eight years under the present Government. The Government's efforts over the last eight years for investment in infrastructure in the medical education sector will give wings/impetus to the aspirations of the countless youngsters.

The template of Ayushman Bharat and PM Jan Aushadhi propounded, designed and discovered by Honourable Prime Minister Sh. Narendra Damodardas Modi Jee and Former Health Minister and Honourable President of the Bharatiya Janata Party Sh. Jagat Prakash Nadda Jee are being replicated successfully by other Countries for effective and efficient implementation of their National Health policies.

Globally, more than 3 million deaths each year happen due to avoidable environmental causes including the climate crisis (health crisis), which is the single biggest health threat faced by the humanity (WHO).

Over 90% of people breathe unhealthy air resulting from the burning of fossil fuels. The world is witnessing mosquito spread diseases farther and faster than ever before. Extreme weather conditions, land degradation, and water scarcity are displacing people and affecting their health. Pollution and plastics are found at the bottom of our deepest oceans, top of the highest mountains, and have made their way into our food chain. Systems that produce highly processed, unhealthy foods and beverages are driving a wave of obesity, increasing cancer and heart diseases while generating a third of global greenhouse gas emissions.

There is urgent need for coordinated action among countries to not only enable swift post-pandemic recovery but also build health resilience against future shocks.

The WHO Manifesto for a healthy recovery from COVID-19 :

The COVID-19 pandemic demonstrated the healing power of science and the inequities in the world. The pandemic has revealed weaknesses in all areas of society and underlined the urgency of creating **sustainable healthy societies** committed to achieving equitable health now and for future generations without breaching ecological limits. The present design of the economy leads to inequitable distribution of income, wealth, and power, with too many people still living in poverty and instability. A well-being economy has human well-being, equity, and ecological sustainability as its goals. These goals are translated into long-term investments, well-being budgets, social protection, legal and fiscal strategies. Breaking these cycles of destruction for the Planet and human health requires legislative action, corporate reforms, and individuals to be supported and incentivized to make healthy choices. Holistic decarbonization strategy has become the need of the hour. Sustainability must become more integrated across Organizations with governance including continuous monitoring. It is now included in management plans all the way up to 'C-suite'. The emphasis on sustainability and Net Zero Emission is important during innovation on all fronts.

Our Planet, Our Health, Our Future :

“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”.

Health, the most basic human right, is one of the most important indicators of sustainable development. We rely on healthy ecosystems to support healthy communities and societies. Well-functioning ecosystems provide goods and services essential for human health. These include nutrition & food security, clean air & freshwater, medicines, cultural & spiritual values, and contributions to local livelihoods and economic development. They also help to limit diseases and stabilize the climate. The three so-called **Rio de Janeiro Conventions arising from the 1992 Earth Summit** – the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the United Nations Convention to Combat Desertification – together aim to maintain well-functioning ecosystems for the benefit of humanity. Climate change and sustainability have become pivotal factors in the long term management of health services and it has become imperative to embed sustainability in health strategies and investments.

Global environmental changes impact ecosystems & people. A renewed consciousness among people has made them aware of the need to act quickly to protect the planet's ecological and climatic systems. Increasingly, unsustainable practices are placing direct and indirect pressure on natural resources to meet the demands of our economies and the needs of a rapidly growing global population, resulting in soil, water, & air pollution; increased emissions of greenhouse gases; deforestation; land-use change; expanded urban areas; as well as the introduction of non-native species and inadequately planned development of water and land resources to meet food and energy needs. In pursuit of public health, at all levels from local to global, careful attention to the processes of global environmental change is obligatory.

Anthropogenic changes to agriculture-related ecosystems have resulted in great benefits for human health and well-being, especially through increased global food production and improved food security. These positive impacts, however, have not benefited everyone and unsustainable levels of use of ecosystems have resulted in irreparable loss and degradation, with negative consequences for health and well-being. These range from emerging infectious diseases to malnutrition and contribute to the rapid rise in non-communicable diseases. Large-scale human transformation of the environment has contributed to increased burden of diseases associated with the expansion of ecological and climatic conditions favourable for disease vectors. The provision of adequate nutrition, clean water, and long-term food security depend on the functioning of agro-ecosystems and indirectly on the regulating ecosystem services of the biosphere. These ecosystem services can be eroded if overexploited and poorly managed.

Biodiversity, climate change, and desertification: three interlinked issues of relevance to health:

“Biodiversity underpins the functioning of the ecosystems on which we depend for food and fresh water, health & recreation and protection from natural disasters.”

The conservation and sustainable use of biodiversity offer significant opportunities to improve health outcomes through the enhanced provision of diverse foods and medicines, while ecosystem-based approaches to land management, climate change adaptation and mitigation can reduce the threats to health from climate change and desertification.

“We usually think of climate change as affecting the ecosystems of the earth and not of the impact on our health”

Climate change threatens to exacerbate inequities both between and within communities, with the severest impacts being felt by children, the women, and the poor. These groups are most affected by – poor sanitation, infectious diseases, vector-borne diseases, malnutrition, and under nutrition – and are expected to intensify as a result of climate change. On the other hand, low-carbon policies that reduce greenhouse gas emissions can directly improve public health via improved local air quality and opportunities for physical fitness from “active transport”. Exercise and reduced air pollution lessen the risk of heart disease, cancer, diabetes, osteoporosis, mental illness, lung disease, traffic-related deaths and injuries. Temperature extremes are seen in heat waves and cold snaps can increase mortality rates, especially among the elderly and people with infirmities. Temperature changes will alter exposure to air pollutants in many ways, including both the levels of pollutants that are formed and the ways these pollutants are dispersed. Rising ocean temperatures may also result in increased Cholera outbreaks as a result of more intense algal blooms which provide nutrients for *Vibrio cholerae* in the natural environment.

Impacts of biodiversity loss, climate change, and desertification on various determinants of health :

Lack of access to safe water increases the risk of Diarrhoeal diseases and other diseases related to chemical and biological contaminants. Increased frequency and severity of drought and flooding are expected to further destabilize existing vulnerable populations. Rising sea levels could result in the salination of coastal freshwater aquifers and disrupt water treatment services, including storm water drainage and sewage disposal. Repeat flooding or increased salination may force population displacement, heightening the vulnerability of populations. Forests, wetlands, and other ecosystems play a major role in water regulation. Thus, the quantity and quality of potable water are also affected by ecosystem loss and degradation. Water availability is the major limiting factor for sustainable development in dry lands. Droughts exacerbate water scarcity and coupled with food deprivation, can result in famines. Droughts may also lead people to migrate, redistributing endemic infectious diseases. Populations in dry lands, most of which occur in developing countries, often lag far behind

the rest of the World in human well-being and development indicators. Globally dry land areas, in particular, are most susceptible to drought.

Biodiversity loss, climate change, and desertification threaten food security. Changing climate patterns, including extreme dry and cold periods, erratic rainfall, land degradation, and biodiversity loss, can have a direct impact on food availability and nutrition and lead to increased vulnerability to diseases, population displacement, and malnutrition. Combined with pre-existing issues associated with global food security, climate change threatens to significantly impede the sustainable agricultural improvement of our Planet, our Health, and our Future efforts, a necessary precondition for sustainable development. In developing countries, the downstream health impacts of decreased agricultural productivity could be devastating. Biodiversity loss not only impacts current food security, nutrition and livelihoods, but the loss of genetic diversity also limits our future options regarding food production, including climate change adaptation and improvement to yields and nutritional quality.

Global change, including biodiversity loss and climate change, is associated with increased risk to humans from infectious diseases. **Agricultural expansion into formerly natural areas increases contact among humans, domestic animals, and wildlife, resulting in the greater likelihood of pathogen transfer, changes in the distribution of disease vectors and the ecology of existing diseases, and the spread of invasive species.** The disturbance of forest ecosystems through deforestation and subsequent land-use change has resulted in the loss of many functions provided by forests, including disease regulation. While forest cover produces a diversity of pathogens, it also serves to maintain the ecology of such diseases through a great diversity of hosts, reservoirs, vectors, predators, and competitors, which can dilute the effect of any pathway transmitting the disease. Climate change brings additional risks – it may affect vector-borne diseases such as Malaria, Dengue Fever, and Lyme disease, creating conditions conducive to vector breeding sites, impacting reproduction, maturation, biting, and survival rates, or directly influencing pathogens. Climate has a very strong influence on waterborne diseases. Prolonged flooding or drought can often result in water contamination, leading to epidemics of Cholera and diarrhea.

Marginalized populations are more likely to face elevated health risks from environmental change. These include lower-income communities and indigenous communities that are coping with environmental changes driven largely by economic processes in other parts of the world. They are often vulnerable to disease risk as a result of multiple stresses, have few resources for combating global environmental change, and have little voice in the decision-making processes of local, regional, national, or global policy Institutions. Because health is a central element in sustainable development, poor communities face a double whammy: the greater risk to environmental health impacts worsen the development challenges they face, which in turn weakens their ability to respond to health risks.

Healthy Planet, Healthy People :

“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”.

Determinants of health in the context of the Rio de Janeiro Conventions :

Health determinants can be arranged hierarchically as concentric spheres that move outwards progressively from the individual to communities. These categories and subcategories of health determinants can be used as a framework to structure the analysis of the association between particular ecosystems and health in specific settings.

Definition of Health :

The preamble to the WHO Constitution defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Many indigenous cultures incorporate a broader definition of health to include heritage and association with nature. The need to

approach health issues from a holistic perspective, taking into account emotional, physical and social well-being of individuals, and to recognize the connections which exist between health and other priorities of human development, such as education, demographic balance, human rights, and economic productivity is emphasized.

Social determinants of health :

There are inequities between and within societies. This inequity is seen in the conditions of early childhood and schooling, the nature of employment and working conditions, the physical form of the built environment, and the quality of the natural environment in which people reside. Depending on the nature of these environments, different groups will have different experiences of material conditions, psychosocial support, and behavioural options. Social stratification likewise determines differential access to and utilization of health care, with consequences for the inequitable promotion of health and well-being, disease prevention, and illness recovery and survival.

Convention on Biological Diversity (CBD) :

“Biodiversity, the foundation for human health, underpins the functioning of the ecosystems on which we depend for food, fresh water, health, recreation and aids in regulating climate, floods, diseases, offers aesthetic and spiritual enrichment and protection from natural disasters”. It contributes to local livelihoods, traditional and modern medicines, and economic development.

Inter linkages between biodiversity and health :

Health cannot be separated from other sustainable development goals. The inextricable links between people and their environment constitute the basis for a socio-ecological approach to health. **The overall guiding principle for the World, countries, regions, and communities alike, is the need to encourage reciprocal maintenance – to take care of each other, our communities, and our natural environment. The conservation of natural resources should be emphasized as a global responsibility. Health is created and lived by people within the settings of their everyday life: where they learn, work and play.** The WHO defines healthy settings as “where people actively use and shape the environment and thus solve problems relating to health. Settings can normally be identified as having physical boundaries, a range of people with defined roles, and an organizational structure.” Accordingly, ecosystems are at the forefront of preventive approaches to the human disease.

Wetlands :

Wetland ecosystems contribute to human health and well-being in many ways, including by the provision of hydration and safe water, nutrition, and medical products. Dams and irrigation systems have been constructed throughout the world to provide many societal benefits, including increased agricultural production, electricity generation for domestic and industrial purposes, flood protection, tourism, fisheries, local employment, and water supply. However, these benefits have unintended costs. Such systems have often contributed to a significant loss of forest and its biota, a reduction in freshwater biodiversity downstream, a loss of downstream fisheries, and human resettlements. They may also have negative impact on human health from diarrhoeal and intestinal diseases caused by microbial agents and helminths, and water-related vector-borne diseases such as Malaria, Schistosomiasis, Onchocerciasis, lymphatic filariasis, and Japanese encephalitis. **The geographical ranges of infectious diseases, such as Chikungunya, Lyme disease, and Malaria, will increase as the climate warms and greater encroachment of human settlements into wild areas could increase the risk of novel zoonotic diseases, such as COVID-19.** There is increasing recognition of the inter linkages between managing wetlands and fostering human health.

Forests :

Global forest cover continues to decline around the world, primarily from agricultural expansion into tropical forests. The disturbance of forest systems through deforestation and subsequent land-use

change has resulted in the loss of potential pharmaceutical species. It is estimated that at the current rates of deforestation in the tropics in the next 3 decades, at least 20% of species, including ~ 600 potential drugs, will be lost. The livelihoods and mental health of indigenous forest dwellers are directly impacted by deforestation that displaces settlements and alters traditional ways of life.

Value of ecosystems for health :

Ecosystem change and environmental degradation can have considerable environmental, social and financial costs. Although the relationship between malaria distribution and intensity is primarily driven by climate and ecology, the disease is both influenced by and constitutes a major threat to economic and social dimensions of development. In addition to the economic losses resulting from epidemics and pandemics efforts to control human and livestock diseases have also had negative economic and conservation consequences. Areas cleared of tsetse fly were opened to subsistence farmers that displaced the local wildlife and developed an area that now depends on food aid most of the time. Farmed Atlantic salmon grown in net cages transmits diseases to wild salmon, and treatment of the farmed salmon with antibiotics and pesticides causes environmental pollution. Ideally, integrated efforts that consider conservation and social & economic impacts may offer the best long-term solutions to mitigate potential threats.

Economic gains from biodiversity and health co-benefits :

With the discovery of many important drugs from natural products, pharmaceutical bioprospecting has increased in high-biodiversity areas such as tropical rainforests. The advances in biotechnology, such as the ability to sequence and clone genes, were developed from natural resources. With the emergence and re-emergence of diseases and the growing antimicrobial resistance of many current pathogens, maintaining genetic diversity will be increasingly important for pharmaceutical bioprospecting e.g. hibernating bears can recycle urea and also preserve bone density. These physiological processes could have direct application to patients on kidney dialysis or to the prevention of Osteoporosis. Bio-control, which uses biological alternatives to chemical pesticides, such as viruses, bacteria, fungi, and insects, is another growing area potentially beneficial to human health. However, these activities also come with potential risks for both the environment and humans.

Impacts of climate change on health :

“We usually think of climate change as affecting the ecosystems of the earth, and not of the impact on our health”.

Over the next century, it is anticipated that average global temperatures will increase by between 1.1°C and 6.4°C and the sea level will rise by between 18 and 59 centimeters. The rate of change in the climate is faster now than in any period in the past thousand years and is expected to be associated with large-scale changes in precipitation patterns and the frequency and severity of extreme weather events. All of these changes will expose human populations to changing patterns of climate-sensitive health risks, and also act on health determining sectors such as agriculture and water resources.

Impacts on health and health determinants :

The direct and indirect impacts of climate change can be best understood when exploring the interactions between climate change and environmental determinants of health. Air quality and sanitation, food and water security, the provision and maintenance of the shelter, and freedom from the disease are among the most important of these environmental determinants. Many of these are interrelated and are adversely affected by the reduced ability of degraded and fragmented ecosystems and biota to accommodate the impacts of climate change, including heat waves; air on our Planet; our health; future pollution; flooding and storms; coastal hazards from sea-level rise, the impact of droughts on food supplies; water availability and vector-borne & waterborne infectious diseases. Depending on where and how people live, certain populations will be more vulnerable to the effects of climate change.

Spread of infectious diseases :

Although the relationship between malaria distribution and disease incidence is strongly affected by climate and ecology, the disease is both a cause and an effect of poverty and therefore, constitutes a major burden on the economic and social dimensions of development. Climate also exerts a very strong influence on waterborne diseases, e.g. the causative agents of Cholera and other forms of severe gastroenteritis are acquired by consuming brackish water or shellfish. Rising ocean temperatures may result in increased Cholera outbreaks as a result of more intense Algal blooms (essential nutrients for *Vibrio cholerae*). Prolonged flooding or drought can result in water contamination, leading to epidemics of Cholera and other forms of Diarrhoeal diseases.

Foods that decrease the effects of Air Pollution:

1. **Turmeric:** high anti-inflammatory and anti-bacterial properties.
2. **Spinach:** antioxidant, anti-mutagenic properties for better lung function.
3. **Tomatoes:** rate of natural lung function decline is slowed.
4. **Broccoli:** Sulforaphane, is an anti-carcinogenic compound that flushes out pollution toxins.
5. **Flaxseed:** Omega-3 fatty acids, Phytoestrogens.

The Government has set the vision, trajectory and road map to help accelerate from just commitment to tangible sustainable achievements. Environmental - Social - Governance (ESG), non-financial factors facilitate top-line growth in the long run, attract talent, reduce costs, and forge a sense of trust amongst patients and other stakeholders. The pandemic has set a siren ringing and world over there is a realization about importance of meeting ESG and Net Zero Emission Goals. It is veritable quest to achieve optimization, meet Net Zero Emission Goals and improve their overall efficacy.

With growing alertness and demand for climate action among consumers, adopting ESG measures are now more important than ever for health Organizations and health delivery systems of all sizes to thrive in the present and in the future.

In the wake of the COVID-19 pandemic and the conflict in Europe, these global crises should act as catalytic agents for rapid transitions to self-sustainable societies, that focus on achieving good health and wellbeing for all citizens and the Planet.

The WHO has given a clarion call to all of us to join a campaign to build bridges to ensure a fairer, healthier planet which shall kickstart economies and act as an engine of growth for job creation for a better standard of living for one and all.

“Together, let’s make the planet a better place to live in peace, harmony & tranquility and grow & prosper.”

**(Dr. Sunil Thakur)
Chief Medical Officer**