



## POLICY DOCUMENT

### Health and Climate Action

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### Policy Statement

#### Introduction

Climate change has a devastating effect on human and environmental health. Potential effects of climate change on human health include higher rates of respiratory and heat-related illness, increased prevalence of vector-borne and waterborne diseases, food and water insecurity, and malnutrition, in addition to direct ill-effects on community health caused by extreme climate events like floods, heatwaves, etc. Persons who are elderly, sick, or poor are especially vulnerable to these potential consequences. While the ill-effects of climate change on health have been documented and well understood, the measures and action to combat them are grossly deficient.

#### MSAI stance

MSAI reaffirms the need for urgent climate action to ensure good health and well-being of communities locally, nationally and globally. Furthermore, MSAI acknowledges the direct effects of human activity on climate change and pledges to work towards climate action.

#### Call to Action

Therefore, MSAI calls on:

##### National Government to:

- Enact policies that encourage a speedy transition to clean energy (wind, solar, etc) and levy taxes on the use of fossil derived resources
- Meet an emissions trajectory consistent with the limiting of the global temperature rise to 1.5 degrees above pre-industrial levels
- Establish sustainable and environment friendly techniques of waste disposal
- Strengthen and monitor the law on ban the use of plastic bags and coverings
- Monitor, evaluate and analyse the health effects of government-run initiatives and make the conclusions of these interventions open-access
- Support NGOs and other relevant organisations to encourage climate solutions
- Support and actively promote meaningful youth engagement at all levels

##### State and Local Governments to:

- Promote green and clean initiatives that directly benefit the community
- Incentivize the reduction of vehicular transport, promote active transport, and build





- the appropriate infrastructure to facilitate this transition
- Ensure the implementation and monitoring of national regulations established towards ensuring climate action
- Increasing funding for research on climate change and its effects on human health in local habitats and communities
- Incentivize the reduction of vehicular transport, promote active transport, and build the appropriate infrastructure to facilitate this transition
- Develop and implement education, training, public access to information, public awareness and public participation
- Build capacity among communities to respond to extreme climate events through preparatory activities like simulations, drills, etc.

**Medical and other educational institutions to:**

- Encourage and support student-led climate solutions and relevant research
- Integrate climate change, its threat to health, organizational sustainability, and the role of the healthcare sector in adapting and mitigating to climate change within the curricula for medical students through Preventive and Social Medicine/Community medicine and relevant subjects for other students
- Develop climate resilient health systems, infrastructure and technologies to make greener and safer healthcare facilities and universities and discourage the use of all forms of non-renewable energy
- Strictly regulate waste disposal, especially from hospitals and healthcare setups
- Train medical students and health professionals to respond effectively to extreme climate events like floods, heatwaves, etc.

**Other institutions, organisations, industries and companies to:**

- Establish and follow an organizational sustainability policy
- Adapt the use of renewable, clean energy
- Increase transparency around the extent investments in fossil fuel companies

**Student organisations and other youth-led bodies to:**

- Lead the change by advocating towards key stakeholders, including governments, to take action in climate change mitigation and adaptation
- Take up projects and initiatives to take action in climate change
- Collaborate with universities and other educational bodies to improve the education on climate change and its impact on health in curricula

**Civil Society to:**

- Advocate for climate action and environmental health
- Help in establishing interventions aimed at taking action in climate change mitigation and adaptation
- Commit to minimizing use of harmful substances like plastic
- Use public transport and environment-friendly alternatives
- Make lifestyle modifications to curb climate change
- Hold institutions, organisations and companies accountable to limit the environmental impact of their activities and action.





## Position Paper

### Background:

Human well-being, stability of local communities, health systems, governments, all depend on how they interface with the changing global climate which has already increased by 1°C from the preindustrial baseline.(1)(2) Left unabated, climate change will define the health profile of current and future generations, will challenge already overwhelmed health systems, and undermine progress towards the UN Sustainable Development Goals (SDGs) and universal health coverage (UHC) (3)(4) especially in countries like India which already face significant public health and health care delivery challenges including resource constraints, high rates of endemic infectious disease, and substantial inequalities in healthcare access. With its diverse array of temperate zones from the Himalayas in the far north, to coastal megacities, to deserts where the 50° Celsius mark is regularly breached, the nation is consistently ranked as one of the most vulnerable to climate change. In the past decade climate change has potentially become the greatest “global health opportunity of the 21st century”.(5)

Major health issues due to climate change broadly includes: Extreme water and air pollution related health effects, Water, food borne and vector related diseases(Rising cases of Malnutrition and child stunting, Malaria, Typhoid, dengue, diarrheal diseases and other communicable ailments) , effects of food and water shortages, increased incidence of floods, severe heat waves( 45 million additional exposure), droughts, psycho social impacts on displaced populations and health impacts from conflicts over access to vital resources to say the least. (6)(7) Global climate projections, given inherent uncertainties, indicate several changes in India’s future climate: With glaciers receding at an average rate of 10–15 meters per year flooding is likely in river valleys resulting in water scarcity for drinking and irrigation, warming of 0.5°C is likely by the year 2030 leading to higher levels of tropospheric ozone pollution, disruption in the rainfall pattern is imminent affecting both regional and global hydrological cycles and agricultural production. All of these impacts set back general socio-economic development. Rural dwellers’ continuing dependence upon agriculture for food and livelihood (17.5 percent of gross domestic product (GDP) and more than 60 percent of the labor force) makes the Indian population particularly vulnerable to climate variability referred to as, “Indian agriculture gambles with monsoon.”(8)(9)(10)

Adaptation, planning and resilience for health which include national action plan on climate change impacts with city level risk assessments, detection, preparedness and response to health emergencies, future mitigation actions in terms of low carbon emission electricity, coal phase out, access and use of clean energy as well as sustainability in food, agriculture and health sectors is the need of the hour. Moreso public and political engagement with appropriate strategies in the field of economics and finance should be taken into due consideration to prevent the life of every child born today profoundly affected by climate change in future course of time.

### Discussion:

#### Impact of climate change on health





As a developing country with high population density, India might experience myriad human health effects because of climate change.

The more direct health impacts include those due to changes in exposure to weather extremes- Heat waves, winter cold; increase in floods, cyclones, storm-surges, droughts; Increased production of certain air pollutants and aeroallergens (spores and moulds) which leads to respiratory ailments. Displacements due to the loss of housing, hunger, and injuries are some of the adverse outcomes to the population

It also acts via less direct mechanisms affecting the transmission of many infectious diseases (especially water, food and vector-borne diseases) and regional food productivity (especially cereal grains). These effects could include infectious diseases such as malaria, chikungunya, and water-borne illnesses. In the longer term and with considerable variation between populations as a function of geography and vulnerability, these indirect impacts are likely to have greater magnitude than the more direct impacts.(11)

Between 2030 and 2050, climate change is expected to cause approximately 250000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress.(16)

### **Vulnerable population**

All populations are affected by climate change, but certain regions and groups have higher susceptibility to climate-sensitive health impacts owing to their age (children and elderly), gender (particularly pregnant women), social marginalization (associated in some areas with indigenous populations, poverty or migration status), or pre-existing medical conditions or other health conditions like HIV.

Developing countries with weak health infrastructure are more susceptible to damage due to climate change than their more developed counterparts. (12)

### **Water problems and increased risks of water borne diseases**

Water borne diseases are sensitive to climate and also show seasonal variation. Diarrheal diseases are more common during the rainy season. Increasingly variable rainfall patterns due to climate change affect the supply of fresh water. Globally, water scarcity already affects 4 out of 10 people. A lack of safe water compromises hygiene and increases the risk of diarrhoeal diseases (which kills approximately 2.2 million people every year), trachoma and other food borne infections.

In extreme cases, water scarcity leads to drought and famine. By the late 21st century, climate change is likely to increase the frequency and intensity of drought at regional and global scale.

Floods are also increasing in frequency and intensity. Floods contaminate freshwater supplies, and increase the risk of water-borne diseases. When floodwaters become contaminated with animal waste, outbreaks of leptospirosis, rotavirus or cholera may occur. (12)

### **Changes in vector ecology and vector borne diseases:**

India is afflicted with six major vector borne diseases namely malaria, dengue, chikungunya, filariasis, Japanese encephalitis and leishmaniasis.





Climate change enhances the transmission season and expands the geographical distribution of vector-borne diseases, as warmer temperature and humidity favours the breeding of insect vectors and also alters the geographic distribution of existing vectors. (14)

### **Effects of extreme temperatures**

Climate change including heat waves, cold spells, and other extreme events will bring new and emerging health issues. Heat stress makes working conditions unfavourable and increases the risk of cardiovascular, respiratory and renal diseases and heat related illnesses. With 1.5°C warming, 350 million more people could be exposed to deadly heat stress by 2050.

**Air pollution and increasing aeroallergen levels** are also high in extreme heat that can trigger asthma and other respiratory diseases. Climate change may affect human health by increasing ground-level ozone and/or particulate matter air pollution. Ground-level ozone (a key component of smog) is associated with diminished lung function, increased hospital admissions and emergency department visits for asthma, and increases in premature deaths.

Fossil fuel combustion is also a major contributor to air pollution, which causes 7 million premature deaths worldwide every year. Black carbon, produced by inefficient combustion in sources such as cook stoves and diesel engines, is the second greatest contributor to global warming. Over 90% of the urban population of the world breathes air that exceeds WHO's guideline levels for outdoor air pollution. (13)

### **Food supply problems**

Rising temperatures and variable precipitation are likely to decrease the production of staple foods in many of the poorest regions. This is increasing the prevalence of malnutrition and under-nutrition. These were highlighted as a concern for a number of developing countries in Africa, Asia and Latin America, with the impacts of climate change on food security, particularly in relation to floods and drought. (15)

Depending on geography and latitude, by 2050, some harvests are expected to rise and some to fall. Whereas most tropical regions are likely to experience production losses due to rising temperatures, production in temperate regions is expected to benefit from warmer climate and longer growing seasons. The effects of uneven climate change risk reversing decades of progress in reducing the divide between developed and developing countries, and could disrupt global trade, food consumption and public health. (23)

### **Forced migration**

It is estimated that 22.5 million people are displaced annually by climate or weather-related disasters, and these figures are expected to increase in the future. Climate-induced human mobility has a socioeconomic cost with mental and social problems to individuals and communities. (12)

In conclusion, Climate and weather have direct and indirect impacts on human life. The most disadvantaged, vulnerable and poor populations are expected to be disproportionately affected by climate change, with rising food and water insecurity, higher food prices, loss of income and livelihood opportunities, negative health effects, and population displacement (including forced migration). We are thus at an important moment in time where we can either mend our ways or look at a lifetime worth of suffering which might just end human life as we know it on this planet.

### **Health Co-Benefits**





In the context of climate change mitigation and adaptation, the term 'health co-benefits' is used to refer to health advantages that occur indirectly as a result of reductions in greenhouse and climate-altering emissions. [17]

In a case study comparing the co-benefits of climate change mitigation in 2 cities in India to following benefits were seen: [18]

In response to spread of pneumonic plague in the Surat in 1994 due to a large flood in Tapi river, the SMC developed the capacity to build an exemplary solid and sewage management systems and were pioneers in installing captive power plants in their sewage treatment. This resulted in Surat becoming one of the cleanest cities in India and health co-benefits of reduction of the number of pneumonic plague cases and reduction in malaria cases and mosquitoes.

As another example, transport emissions accounted for over 60% of certain kinds of air pollution in the city of Delhi by the mid-1990s. With concerns over the rate of premature deaths due to air pollution, the Delhi government took many decisions out of which the most important decision was a 1998 ruling that mandated the use of compressed natural gas (CNG) in all government buses, taxis as well as auto rickshaws (3-wheelers) by 2001. This resulted in improvements in excess levels of all kinds of health risks and reduction of over 30% of SO<sub>2</sub> and reduction of 3-7% for particulate matter (PM) with a 14% increase in NO<sub>x</sub> between 2000-2003. [18]

This suggests the power of mitigation of climate change by various stakeholders on various levels and it can produce co-benefits not only on health but on various other overlapping fields.

### **Role of (future) Healthcare professionals**

Health care professionals are a powerful asset in combating climate change. India has reached the capacity of an annual intake of 67,218 MBBS students at medical colleges regulated by the Medical Council of India. [19] With such a high population of future health care professionals, they can contribute to climate change in the following way:

Climate change will increasingly be a determinant of health and must be included in medical schools' curricula so that students understand the role of the changing environment as a risk factor and the part it plays in the pathophysiology of disease. Including climate change will also help students see themselves as self-efficacious actors in this global challenge that is unfolding. By incorporating climate and health into their curricula, medical schools will not only prepare their students for the inevitable reality of illness and life circumstances affected by climate change but will also add to and solidify the crucial skills needed by the modern-day physician to address the growing health burdens of non-communicable disease, an aging population, systemic socioeconomic disadvantage, and the structural changes to the upstream determinants of health. Integrated curricular changes and advocacy training will better equip and inspire students as they embark on their future careers. [20]

Physicians play a vital role in protecting the health of patients and communities, especially in the era of climate change. Professionals can impact the lives of patients by including climate change impacts in disease management and care protocols. We can advocate for patients by giving essential tips like walking or biking instead of driving; reducing meat consumption; purchasing local, fresh and seasonal food to reduce the risk of non-communicable diseases like





cardiovascular diseases, obesity and diabetes, as well as reducing greenhouse gas emissions. [21]

The healthcare industry also has a critical role to play in preventing climate change. Incorporating green building and smart landscaping into hospital design reduces energy use and greenhouse gas (GHG) emissions. Proper site locations can help contain urban sprawl and lessen auto dependence. Health care facilities also use substantial amounts of water and can play an important role in mitigating the problem of climate-induced water scarcity by implementing programs that will not only save water, but also save the facility money. [22]

Apart from these, physicians have an especially important role to play in influencing community leaders and policy-makers who make decisions with larger impacts to create safer and sustainable communities.





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