



International Agency for the Prevention of Blindness  
Climate Action Working Group



# **CALL TO ACTION**

**FOR ENVIRONMENTALLY SUSTAINABLE  
PRACTICES IN THE EYE HEALTH SECTOR**

# Climate Change and Eye Health

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## **Environmental degradation, air pollution and climate change are having devastating impacts**

in all parts of the world, with the greatest effect on vulnerable and low-income communities. The world is facing a climate emergency that threatens to undo decades of progress in global health. Climate change is exacerbating poverty and health inequality<sup>1</sup> and slowing down the efforts of the global health community to realize universal health coverage.

**Eye health is being affected.** Early studies have shown that high temperature and low rainfall – both negatively impacted by climate change - are associated with an increase in trachoma infection<sup>2</sup>. Vitamin A deficiency is predicted to rise from a likely increase in food insecurity due to change in predictable rainfall patterns causing both flooding and drought affecting harvests. Global warming may play a part in early onset and accelerated progression of cataract due to the loss in the ozone layer and increased UV light affecting their eye<sup>3,4</sup>. Moreover, there is an association between traffic-related air pollution and severe allergic eye diseases<sup>5</sup>, glaucoma<sup>6</sup> and age-related macular degeneration<sup>7</sup>. Extreme weather events will lead to an increase in physical injuries, including eye injuries, and experience shows us that those with visual impairment and disabilities are disproportionately impacted.

## **Climate change will disrupt eye health service delivery.**

Hurricanes and cyclones across the world have led to temporary closures or destruction of medical facilities and supply chains of critical medical supplies, including medications, surgical supplies, glasses and assistive devices. Climate change is projected to push already vulnerable populations into extreme poverty further impeding their access to health services<sup>8</sup>.

## **Conversely, healthcare is a massive consumer of resources and major emitter of greenhouse gas emissions.**

Worldwide, healthcare is responsible for 2 billion tons of carbon dioxide equivalent (CO<sub>2</sub>e), 4.4% of all global net greenhouse gas emissions (GHGs), and equivalent to the annual greenhouse gas emissions of 514 coal power stations<sup>9</sup>. Insufficient health care waste management is responsible for health-care acquired infections and “curing at the front door and poisoning at the back door.”<sup>10</sup> IAPB and the eye health sector are focusing on creating efficiencies in waste management and the use of resources to help reducing environmental impact.

## **There are significant co-benefits to the health sector and its beneficiaries in**

## **integrating climate and environmental strategies**

from better health through higher activity levels, a reduction in environmental pollution and reducing the adverse effects of climate change leading to increased productivity, improved quality of services and reduced costs. Doing nothing, will seriously hamper any efforts to keep the global average temperature rise to 1.5°C to avoid the risk of potentially catastrophic climate breakdown and its inevitable impact on eye health, on top of any financial and reputational risk.

## **The global pandemic has revealed how human and planetary health are closely intertwined.**

Though COVID-19 and climate change are not directly related, COVID-19 has evidenced a global threat with catastrophic consequences to people’s lives and economies that have been mitigated through a global initiative around public health measures, the development of vaccines, and indeed a recognition at all levels of society that a global threat impacts and needs a global response. We have seen a year where eye health services have been closed down and access to care severely limited leading to untold numbers of people facing increased risk of losing their sight. The international cooperation that developed vaccines and treatment therapies for COVID-19 is giving hope that similar international resolve to tackle climate change will result. We should take this opportunity to shape a ‘new normal’ to not only take care of our health and economy, but also pay attention to our planet.

## **The eye health sector can show leadership and accelerate efforts to mitigate our own climate impact.**

Only then will the health community achieve universal health coverage and help to eradicate inequality and poverty, supporting the Sustainable Development Goals (SDG Goal 13) and the World Report on Vision’s commitment to ‘leaving no one behind’.

## **Eye health organizations and institutions in their work with and through partners such as eye health service providers and eye health professionals can follow 10 simple steps to start embedding environmental sustainability**

into their policies, projects and operations. IAPB will support by sharing resources such as the ‘Guide for Environmentally Sustainable Eye Health Practices’. The following 10 actions highlight opportunities in key areas of leadership, advocacy, sustainable procurement, facilities management, service delivery, education, research and collaboration.

# 10 Key Areas of Action

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**LEAD**



**ADVOCATE**



**PROCURE  
SUSTAINABLY**



**REDUCE THE USE  
OF FOSSIL FUELS**



**CONSERVE WATER**



**REDUCE AND  
SAFELY DISPOSE  
OF WASTE**



**REDUCE AND  
GREEN THE  
TRAVEL**



**FOLLOW THE 4  
PRINCIPLES OF  
SUSTAINABLE  
CLINICAL PRACTICE**



**EMBED  
ENVIRONMENTAL  
SUSTAINABILITY  
IN EDUCATION**



**FOCUS YOUR  
RESEARCH**

## LEAD



You can acknowledge a Climate Emergency<sup>11</sup> and develop an environmental sustainability strategy for your organization with targets that will help reduce your greenhouse gas emissions and support the Sustainable Development Goals.

## ADVOCATE



You can develop and deliver advocacy messages and strategies and train your staff, partners and eye health workers in the knowledge of and delivery of climate action messages. Help embed these messages by seeking to create clean, green, welcoming eye health services to the benefit of staff and patients. Make every contact count by sharing your successes at conferences, networking events and partnership meetings.

## PROCURE SUSTAINABLY



You can implement a sustainable procurement policy and/or procedure by selecting products that have a lower impact on the environment, consume less energy and water in production and use, use fewer harmful chemicals, and embed the principles of the circular economy (what happens at the end of life) into your procurement process.<sup>12</sup>

## REDUCE THE USE OF FOSSIL FUELS



You can maximize the use of renewable energy at your office and healthcare facilities and improve the energy efficiency of your buildings and equipment, including lighting, air conditioning, office and medical equipment.

## CONSERVE WATER



You can consider water saving technology, like grey water recycling, and water efficient equipment. You can make sure your water system is monitored for leaks and any leakages repaired.

## REDUCE AND SAFELY DISPOSE OF WASTE



You can consider the waste hierarchy 'reduce, reuse, repair, recycle'. For hazardous medical waste, you can choose a safe disposal option which is most suitable and likely already in use for your region.

## REDUCE AND GREEN THE TRAVEL



You can reduce the amount of flying where possible considering alternatives like video conferencing. You can reduce the amount of patient travel through alternative models of care such as telemedicine and through eye health system strengthening, e.g. one stop clinics offering care at the community level. You can promote active travel and public transport for staff and patients where possible.

## FOLLOW 4 PRINCIPLES OF SUSTAINABLE CLINICAL PRACTICE



You can follow the 4 principles<sup>13</sup> of prevention, patient empowerment, lean eye health service delivery and the use of medical procedures and technologies which have a lower environmental impact. This will reduce the demand for eye health services, reduce the cost of delivery and decrease their environmental impact.

## EMBED ENVIRONMENTAL SUSTAINABILITY IN EDUCATION



For international and regional bodies, you can consider embedding environmental sustainability into your eye health education programmes and the health curriculum. You can offer resources on environmentally sustainable eye health on your website.

## FOCUS YOUR RESEARCH



You can support and/or conduct research in sustainable eye health services to generate evidence for advocacy and practice for sustainable change such as the comparative environmental impact of Manual Small Incision Cataract Surgery versus Phacoemulsification, disposables versus reusables, and new service delivery models that further our understanding of the climate impact of different techniques, products and delivery models.

For more detailed guidance, please see 'Guide for Environmentally Sustainable Practices in the Eye Health Sector'.

*This Call for Action was co-authored by the Centre for Sustainable Healthcare in partnership with the Climate Action Working Group of the International Agency of Prevention of Blindness (IAPB CAWG).*

# References

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1. Watts N et al. (2021). The 2020 report of The Lancet Countdown on health and climate change: responding to converging crises. *The Lancet*, 397(10269), 129-170. doi:10.1016/S0140-6736(20)32290-X
2. Ramesh, A., Kovats, S., Haslam, D., Schmidt, E., & Gilbert, C. E. (2013). The impact of climatic risk factors on the prevalence, distribution, and severity of acute and chronic trachoma. *PLoS neglected tropical diseases*, 7(11), e2513. <https://doi.org/10.1371/journal.pntd.0002513>
3. Johnson, G. J. (2004). The environment and the eye. *Eye (Lond)*, 18(12), 1235-1250. doi:10.1038/sj.eye.6701369
4. Jaggernath, J. , Haslam, D. and Naidoo, K. (2013) Climate change: Impact of increased ultraviolet radiation and water changes on eye health. *Health*, 5, 921-930. doi: 10.4236/health.2013.55122.
5. Miyazaki, D., et al. (2019). Air pollution significantly associated with severe ocular allergic inflammatory diseases. *Scientific Reports*, 9.
6. Chua, S. Y. L., et al. (2019). The Relationship Between Ambient Atmospheric Fine Particulate Matter (PM2.5) and Glaucoma in a Large Community Cohort. *Investigative Ophthalmology & Visual Science*, 60(14), 4915-4923. doi:10.1167/iops.19-28346
7. Chua, S. Y. L., et al. (2021). Association of ambient air pollution with age-related macular degeneration and retinal thickness in UK Biobank. *British Journal of Ophthalmology*, *bjophthalmol-2020-316218*. doi:10.1136/bjophthalmol-2020-316218
8. Intergovernmental Panel on Climate Change [IPCC]. (2018). Special Report, Global Warming of 1.5°C. UN
9. Arup. (2019) Healthcare's Climate Footprint. Healthcare without Harm & Arup.
10. Harhay, M. O., Halpern, S. D., Harhay, J. S., & Olliaro, P. L. (2009). Health care waste management: a neglected and growing public health problem worldwide. *Trop Med Int Health*, 14(11), 1414-1417. doi:10.1111/j.1365-3156.2009.02386.x
11. UN Environment Programme. (2019). Facts about the climate emergency. UN.
12. Haupt, M., & Hellweg, S. (2019). Measuring the environmental sustainability of a circular economy. *Environmental and Sustainability Indicators*, 1-2, 100005. <https://doi.org/10.1016/j.indic.2019.100005>
13. Mortimer F. (2010). The sustainable physician. *Clinical medicine (London, England)*, 10(2), 110-111. <https://doi.org/10.7861/clinmedicine.10-2-110>