

LINKAGES AND OPPORTUNITIES FOR APPLYING SUSTAINABILITY PRINCIPLES TO ADVANCE ENVIRONMENTAL HEALTH: A SOUTH AFRICAN PERSPECTIVE

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ENVIRONMENTAL HEALTH LINKS WITH JUSTICE

Globally, 12 million lives are lost every year from living or working in unhealthy environments









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Most concerning environmental issues in South Africa

Air



pollution Around 50,000 South Africans die each year from causes linked to air pollution

Clobal warming & extreme weather events One of the effects of global warming is an increased rate of extreme weather events, such as drought, flooding and storms



Waste South African households generate about 12.7 tonnes of waste ann

Biodiversity loss and climate change Climate change threatens South Africa's worldfamous biodiversity

> GREEN ECONOMY JOURNAL

98% of South Africans are exposed to particle pollution that is dangerous* 15 600 people (5% of deaths) die each year Cardiovascular disease are a major cause of these deaths

STEPPING OUTSIDE PUTS YOU AT RISK



* $PM_{2.5}$ concentrations $\mu g/m^3-$ the 2005 WHO AQG (

Roomaney RA, Cairncross E, Tesfaye M, Kapwata T, Abdelatif N, Olivier C, Mathibela K, Cois A, Neethling I, Botai J, Turawa EB, Awotiwon OF, Chetty K, Nojilana B, Wright CY, Pacella R, Bradshaw D, Pillay-van Wyk V. Estimating the burden of disease attributable to ambient air pollution (ambient PM2.5 and ambient ozone) in South Africa for 2000, 2006 and 2012. S Afr Med J. 2022 Sep 30;112(8b):705-717. doi: 10.7196/SAMJ.2022.v112i8b.16483.

20% of South Africans are exposed to household air pollution 8 800 people (2% of deaths) die each year Lower respiratory tract infections and cardiovascular diseases are major cause of these deaths

SOUTH AFRICANS ARE DYING FROM AIR POLLUTION EXPOSURE IN THEIR HOMES









Roomaney RA, Wright CY, Cairncross E, Abdelatif N, Cois A, Turawa EB, Owotiwon OF, Neethling I, Nojilana B, Pacella R, Bradshaw D, Pillay-van Wyk V. Estimating the burden of disease attributable to household air pollution from cooking with solid fuels in South Africa for 2000, 2006 and 2012. S Afr Med J. 2022 Sep 30;112(8b):718-728. doi: 10.7196/SAMJ.2022.v112i8b.16474.

ALTERNATIVE ENERGY

- Renewable options
- Job creation
- Clean air in the breathing zone
- Clean air in the community



Solar panels on a hour Soweto, Johannesbi



URBAN GREENING

- Green space
- Reduce heat island effect
- Improve air quality
- Job creation
- Community engagement
- Food for community



Urban farming in Soweto, Johar





Africa Policy Research Institute, 2024

Skill









(a,b) Spatial distribution of anomaly correlation coefficient between DePreSys3 hindcasts of summer rainfall and equivalent GPCC observations on a 1° × 1° grid for 1960–2014. Boxes outline the Sahel region and delineate the west and east Sahel at 10° E. All time series are linearly detrended and normalized. Stippled regions mark 95% significance (see Methods). (c,d) Red line denotes the normalized and linearly detrended DePreSys3 ensemble mean timeseries of summer Sahel rainfall. Black lines mark observational rainfall series sub-sampled to match hindcast dates and the light grey line shows the full observational timeseries. Circles highlight each data point. Correlation coefficients with 5–95% confidence intervals are indicated in brackets (see Methods). Upper panels show results for summer rainfall data averaged over years 2–5 from initialization. Lower panels show individual seasons for hindcasts initialized in the previous November.





ENVIRONMENTAL HEALTH AND EXTREME WEATHER EVENTS





ENVIRONMENTAL HEALTH AND EXTREME WEATHER EVENTS



CONCLUSION

By leveraging sustainability as a tool for enhancing environmental health in South Africa and around the world, this offers a holistic approach to addressing the socio-economic and environmental inequities faced by low-income communities.

This approach will not only improve health outcomes but also promote long-term resilience and economic opportunities.







Thank you!



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