



LeA's Director/International Climate Analyst Lefale reflects on his Harvard University Residency Fellowship, March 2019.

By Penehuro Fatu Lefale

In March, I had the privilege of spending four weeks at the Harvard's Solar Geoengineering Research Program <https://geoengineering.environment.harvard.edu/people/penehuro-fatu-lefale>. Solar Geoengineering (SG) is a set of proposed technologies that would enable manipulation of the earth's radiative balance to offset impacts of climate change. SG may reduce some climate risks, but could also introduce new risks.

I was hosted by Harvard's Solar Geoengineering Research Program under the guidance of my co-researchers, Dr. Josh Hortonⁱ and Prof. David Keithⁱⁱ. The Program produces research that advances SG's science and technology frontier, publishing high-impact papers, and disseminating ideas that are taken up by other researchers and government research programs.



Above left: Researchers from Europe and US share geoengineering modeling results, March 2019.

Above right: Sunset at Harvard University campus, March 2019.

For the last ten years, my interest in geoengineering grew as ongoing government efforts since 1990 to reduce global carbon emissions have not delivered results. It is clear we cannot solely rely on governments to put in place policies and measures fast enough to prevent climate risks in line with scientific evidence. I was increasingly drawn to large-scale technological solutions, such as geoengineering (carbon dioxide removal (CDR) and solar geoengineering (SG)). This led me to engage internationally with researchers, engineers, and innovators exploring these emerging technologies, which ultimately drew me to the program at Harvard.

My residency research topic explores climate risk insurance for solar geoengineering. With Dr Horton and Prof Keith, we are analysing the Pacific Catastrophe Risk Facility Initiative

(PCRAFI) to ascertain if this scheme could be used to compensate potential harms from solar geoengineering in Pacific Island Countries (PICs). Results will be published in a peer-reviewed journal.

For more information on Harvard's Solar Geoengineering Research Program, visit its website <https://geoengineering.environment.harvard.edu/>.

ⁱ Dr. Josh Horton is the Research Director for the Program. He has written extensively on the governance of solar geoengineering. Josh conducts research on geoengineering policy and governance issues, including the regulation of research, liability and compensation, and geopolitics. <https://keith.seas.harvard.edu/people/joshua-horton>.

ⁱⁱ Professor David Keith David W. Keith is Gordon McKay Professor of Applied Physics for Harvard University's Paulson School of Engineering and Applied Sciences and Professor of Public Policy for the Harvard Kennedy School at Harvard University. David has worked near the interface between climate science, energy technology, and public policy for twenty-five years. He took first prize in Canada's national physics prize exam, won Massachusetts Institute of Technology (MIT) prize for excellence in experimental physics, and was one of TIME magazine's Heroes of the Environment. <https://keith.seas.harvard.edu/people/david-keith>.