

July 2, 2018

Dear Members and Alternate Members of the Board of the Green Climate Fund:

We, the undersigned climate and ecosystem scientists, are deeply concerned about the potential for the Green Climate Fund to support large-scale biomass projects under the guise of climate finance. Our concern is triggered by presentation at this Board Meeting of the deeply flawed 'Biomass Energy Programme in the South Pacific' project (FP088); but the concern extends more broadly to the inappropriateness of utility-scale biomass as a climate solution.

Forests, other terrestrial ecosystems and soils currently sequester an amount of atmospheric carbon dioxide (CO₂) equal to nearly one-third of annual emissions from all human sources. But when biomass from forests is burned for heat or electricity, large quantities of CO₂ are immediately released to the atmosphere. The Intergovernmental Panel on Climate Change has noted that bioenergy is not carbon neutral: "The combustion of biomass generates gross GHG emissions roughly equivalent to the combustion of fossil fuels. If bioenergy production is to generate a net reduction in emissions, it must do so by offsetting those emissions through increased net carbon uptake of biota and soils." (IPCC AR5 WG III 11.13.4)

When forest biomass is burned to generate electricity, emissions are substantially greater than coal per megawatt-hour. Further, biomass electricity is more costly than truly clean options such as wind and solar, which do not emit any CO₂ or air pollutants during operation. While forest regrowth can theoretically offset CO₂ emitted during previous biomass combustion, a variety of studies have demonstrated this takes several decades to a century or more - far beyond the time required to meet emission reduction goals specified in international agreements. Article 5 of the Paris Climate Agreement speaks to the importance of forests as the only realistically deployable carbon sinks, stating "*Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases... including forests.*" Harvesting forest wood for fuel undermines this key Paris Agreement goal, as well as threatening biodiversity and a host of other ecosystem services that forests provide.

We are concerned that FP088 will lead to substantial net emission increases, thus compromising both the intention of the Paris Agreement and commitments under Article 5 to protect and restore forests in developing countries through REDD+. While removing invasive species and rehabilitating degraded lands can improve biodiversity and local livelihoods, burning the offtake from those areas, and planting extremely short-rotation plantations as proposed in Programme documents, contravenes climate mitigation goals and the goal of improved ecosystem health.

Unconstrained bioenergy use is inconsistent with the Convention on Biodiversity and with at least four of the UN's Sustainable Development Goals, Climate Action (#13), Life on Land (biodiversity #15)), Affordable and Clean Energy (#7), and Ensure Sustainable Consumption and Production Patterns (#12). Fiji, Korea, and Papua New Guinea are parties to each of these agreements, and GCF should conform.

We urge you to reject the proposed Programme, 'Biomass Energy Programme in the South Pacific', and to undertake a more thorough review of bioenergy development in relation to the GCF's core mandate.

Sincerely,

Dr. Phil Duffy, President, Woods Hole Research Center, Physicist and former director of climate change in the Office of Science and Technology Policy during President Obama's administration

Dr. Mary Booth, Director, Founding and current Director of Partnership for Public Integrity that does quantitative analyses of carbon emissions and air pollution from bioenergy facilities and the role of forests in addressing climate change

Dr. Richard Houghton, Senior Scientist Woods Hole Research Center, Leading expert on role of carbon sequestration by forests, a lead author of current IPCC report on role of natural systems in addressing climate change and a lead author of several past reports

Dr. Beverly Law, Professor of Global Change Biology & Terrestrial Systems Science in the Department of Forest Ecosystems & Society Oregon State University, she is an American Geophysical Union Fellow, who studies forests, carbon and and climate change, and for two decades has been among the top 1 percent of cited authors of agricultural research

Dr. Tom Lovejoy, University Professor of Environmental Science and Policy, George Mason University, Senior Fellow United Nations Foundation, Leading scientist on tropical forests who introduced the concept of biodiversity

Dr. James J. McCarthy, Alexander Agassiz Professor, Department of Earth and Planetary Sciences, Harvard University, Co-chair Intergovernmental Panel on Climate Change Third Assessment Report (2001) Working Group II (Impacts, Adaptation and Vulnerability)

Dr. William R. Moomaw, Prof. Emeritus of International Environmental Policy, Founding Director Center for International Environment and Resource Policy, Tufts University, A chemist and a lead author of five Intergovernmental Panel on Climate Change Reports including Coordinating Lead Author of IPCC Special Report on Renewable Energy

Dr. Peter Raven, President Emeritus, Missouri Botanical Gardens, Prof. of Botany Washington University St. Louis, US National Medal of Science, He is an expert on botany and plant biodiversity

Dr. William Schlesinger, Former Dean, Nicholas School of Environment, and James B. Duke Professor of Biogeochemistry. Duke University, President Emeritus Carey Institute of Ecosystem Studies, Chair US Environmental Protection Agency Science Advisory Board, Member US National Academy of Sciences

Dr. John D. Sterman, Jay W. Forster Professor of Management and Director of MIT System Dynamics Group at the Massachusetts Institute of Technology, Sloan School of Management

Dr. George Woodwell, Founding Director Woods Hole Research Center, Ecologist and leading climate scientist who helped initiate the UN Framework Convention on Climate Change, Member US National Academy of Sciences