

## **Climate Science, Awareness and Solutions, Inc.**

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Honorable Magistrates, Superior Court  
Judicial District of Bogota, Civil Chamber, ESD

Regarding: Tutela Action:

José Daniel Rodríguez Peña, et al. v. Presidency of the Republic of Colombia, et al.

### **Amicus Curiae Brief of Dr. James E. Hansen**

This Amicus Curie Brief is submitted on behalf of Dr. James E. Hansen, Director of the program on Climate Science, Awareness and Solutions at the Earth Institute, Columbia University.

Dr. Hansen is a leading climate scientist whose pioneering work has raised awareness about the dangers of unarrested global warming and effective solutions to preserve a functioning climate system for the sake of young people and future generations. Attached, as Exhibit 1, please find Dr. Hansen's curriculum vitae.

#### **I. Summary and Background**

The purpose of this brief is to convey Dr. Hansen's expert opinion about procedural requirements and principles underlying the Tutela.

Dr. Hansen's purpose also is to provide this Honorable Court with information that presents the Action in a somewhat broader context. In particular, Dr. Hansen believes that the specific relief sought by petitioners is necessary not only to ensure that Columbia will honor its present international commitment but also for the nation to retain the option to assume a global leadership role in restoring the planet's climate system.

As further background and support, we direct the Court to three papers in the public domain of which Dr. Hansen is the lead author. Their analysis and determinations constitute the specific basis of the expert opinions Dr. Hansen expresses herein. These are *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*. PLoS ONE (2013)<sup>1</sup>; *Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observations that 2°C global warming could be dangerous*, Atmos. Chem. Phys. (2016)<sup>2</sup>; and *Young people's burden: requirement of negative CO<sub>2</sub> emissions*, Earth Syst. Dynam. (2017).<sup>3</sup>

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<sup>1</sup> See <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648>.

<sup>2</sup> See <https://www.atmos-chem-phys.net/16/3761/2016/>.

<sup>3</sup> See <https://www.earth-syst-dynam.net/8/577/2017/>.

## II. Requirements and Principles Underlying the Tutela

In brief, we understand that, by this Tutela, twenty-five young persons, representing future generations (and represented in Court by the attorney César Augusto Rodríguez Garavito of the noted national organization Dejusticia) seek action by this Court to compel federal, state and local authorities to protect certain of their fundamental rights. They allege those rights are threatened by dangerous climate change, and they further allege that dangerous climate change is caused and exacerbated in part by CO<sub>2</sub> emissions deriving from permitted and illicit deforestation activities across Colombia, including in the Colombia Amazon.

Among Plaintiff's rights alleged to be endangered are the Rights to a Healthy Environment, to a Dignified Life, to Health, to Food, and to Water.

Plaintiffs seek, among other things, Orders from this Court directing federal, state and local authorities to reduce the rate of deforestation across the nation, including a reduction in the rate of deforestation in the Colombia Amazon to zero by 2020.

Plaintiffs' initial procedural requirements are to establish subsidiarity, immediacy and legitimacy. Although these appear to be virtually established on the basis of the pleadings in this type of action, Dr. Hansen's relevant opinion as to them includes the following:

First, as to subsidiarity, the alleged failure of Colombia to honor its international commitment to reduce CO<sub>2</sub> emissions implicates more than the collective right to a healthy environment. The rights to life, health, food and water are retained by the Plaintiffs, and it is therefore reasonable that this Court should deem that by and through Plaintiffs the rights of future generations of Colombians may be represented.

A well-functioning climate system is critically important to natural and human systems that are essential to Plaintiffs' lives, livelihoods, health and wellbeing, including for present and future fresh water supplies and food production. As Dr. Hansen and his colleagues discuss in the aforementioned papers, human-induced climate change is already in the danger zone and, in order to avoid calamitous and irreversible national and global consequences, human-derived CO<sub>2</sub> emissions, including those from deforestation, must be reduced to a net of zero within decades, among other things. At the required scale and pace, termination of deforestation activities can be achieved only through coordinated action undertaken at the national, state and local level.

Second, as to immediacy, Plaintiffs' Jan. 29, 2018 filing in this Tutela Action, citing data from the Institute of Hydrology, Meteorology and Environmental Studies, documents a dramatic increase in emissions from deforestation in Colombia. This establishes that the nation is moving rapidly in the wrong direction. These facts present an immediate crisis because deforestation rapidly transforms land that may have been an important sink for CO<sub>2</sub> into a source of such emissions. The climate crisis will only become more severe as deforestation continues and associated emissions are additionally generated.

Third, as to legitimacy, the Plaintiffs' group is comprised of persons ranging from 7 to 26 years of age. They will be burdened more than will be the average Colombian – whose

median age is 30.<sup>4</sup> Significant impacts from human-induced climate change is already experienced in Colombia and other nations -- from sea level rise, hydrological change, increased heat, amplified severe weather, altered pathogens, and related disruptive factors. But those and other impacts will become extreme, if climate change remains essentially unarrested. Far worse is still to come. Plaintiffs, and the future generations for which they ineluctably must stand, will be disproportionately burdened, stressed, tested, and harmed.

Finally, for this part, Dr. Hansen agrees with the Plaintiffs as to the relevant principles for proper adjudication of this Tutela.

While we are late in acting with purpose to arrest global warming, the precautionary principle still counsels us to act now to avert calamitous climate change before every last detail is fully known (or fully appreciated). Similarly, while sea level rise and ocean acidification derived from deforestation-induced regional and global warming conflicts with the fundamental rights and interests of the present generation, it will impact and thus violate the rights of future generations more severely still.

Accordingly, the principle of intergenerational equity compels action without further delay so as not to burden disproportionately young persons and future generations. As well, the principles of solidarity, participation, and the best interest of children counsel consideration of interests retained by persons beyond those wielding present political authority. Considered interests, as well, must not be limited to those within the specific region of this Court's usual jurisdiction. Neither should they be limited to those of the present generation.

### **III. The Planetary Context**

The obligation to reduce greenhouse gas emissions including, in particular, by CO<sub>2</sub> emissions deriving from permitted and illicit deforestation activities across Colombia, including in the Colombia Amazon, was articulated in the national submission to the United Nations Framework Convention on Climate Change (UNFCCC). Plaintiffs in this Tutela argue, however, that in addition to being necessary to satisfy national requirements under the Paris Agreement to the UNFCCC, satisfaction of the obligation is necessary to uphold their fundamental rights.

Dr. Hansen's specific purpose in this section is to raise, albeit briefly, yet another highly related point – one underscored by the more extensive discussion in the aforementioned paper by Hansen et al., *Young People's Burden*.

In Dr. Hansen's expert opinion, based on decades-long research, in order to stave off the most severe consequences of climate change we must strive to keep global warming from exceeding about 1°C relative to the pre-industrial level. That is fully consistent with Dr. Hansen's prior conclusion that we must aim to reduce CO<sub>2</sub> to less than 350 ppm. See, for example, discussion in the aforementioned paper, Hansen et al., *Assessing "Dangerous*

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<sup>4</sup> Central Intelligence Agency, *World Factbook*, <https://www.cia.gov/library/publications/the-world-factbook/fields/2177.html>, visited March 14, 2018.

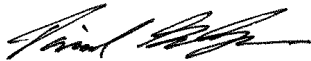
*Climate Change.*” These conclusions were developed and reached by a cadre of some of the best scientists in the world in relevant disciplines. The appropriate limits for global temperature and atmospheric CO<sub>2</sub> may be lower, but they certainly are not higher.

Achieving those goals now requires “negative emissions,” i.e., extraction of CO<sub>2</sub> from the air. If phasedown of fossil fuel emissions begins soon, most, if not all, of this extraction can still be achieved via improved agricultural and forestry practices, including reforestation and steps to improve soil fertility and increase its carbon content.

In a highly useful recent study in the U.S. Proceedings of the National Academy of Scientists, leading researchers attempted to quantify the capacity of natural systems to extract atmospheric CO<sub>2</sub> on a nation-by-nation basis. Reforestation, by their estimate, accounted for 73 percent of the total potential of such “Natural Climate Solutions.”<sup>5</sup> Colombia’s potential for such extraction by reforestation ranks among the top ten nations on the planet, and substantially ahead of Bolivia, Ecuador, Paraguay, Venezuela, and Argentina. Indeed, Colombia’s reforestation potential to arrest climate change rivals that of the United States and the Russian Federation.

Accordingly, in the view of Dr. Hansen, this Tutela Action raises two important questions. First, will Colombia honor its obligation to undertake action that is minimally necessary to cease its flagrant violation of the fundamental rights of Plaintiffs and future generations? Second, will Colombia undertake related, additional action that is within its grasp so as both to safeguard those rights and serve as a model for other nations in this uniquely dangerous moment?

Respectfully submitted this 16<sup>th</sup> day of March, 2018, on behalf of Dr. James E. Hansen.



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<sup>5</sup> Grisholm, et al., *Natural climate solutions*, Proceedings of the National Academy of Sciences of the United States (Sept. 5, 2017) available at <http://www.pnas.org/content/114/44/11645/tab-article-info>.