

## Operationalising Climate Ethics Principles: Challenges of Moving from the Philosophical to the Applied

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### ABSTRACT

Distributive justice is critical to how climate change ought to be collectively dealt with by nation-states. Commonly, sharing of effort to address climate change is discussed as distributing financial *costs* by way of three *pays* principles: the polluter pays, the beneficiary pays, the ability to pay. Or allocating *rights* to emit greenhouse gases (GHGs) by way of two *emissions budget allocation* principles: grandfathering and variants of the equal per capita view. While a rich climate ethics literature has evolved to define and debate these principles in the abstract, there are relatively few instances of them being operationalised with appropriate data, especially the three pays principles. Motivated by this research gap and with the aim to present international climate negotiators and policymakers with a range of equitable effort-sharing scenarios, this doctoral research project explores how efforts to address climate change could be shared between countries through applying the five aforementioned principles. The research's multidisciplinary, multi-method design includes development of a novel dashboard-style tool, the Science and Ethics of Fair Shares (SEFS) dashboard, built in the programming language, python. This enables data rich applied ethics, which incorporates outputs from a simple climate model and the method of input-output analysis. Results from the dashboard highlight that countries' perceived responsibilities for addressing climate change are highly sensitive to the time period over which countries' contributions to the issue are considered, and whether contributions from one or multiple GHGs are included, in the case of emissions- or warming-dependent principles. This is not the case for principles which have a solely forward-looking focus or rely on 'proxy' metrics as indications of countries' current circumstances, where distributions of state-level responsibility according to applications of these principles are very different. The research also revealed challenges that come with moving from ethical theory to practice. Specifically, the dashboard's use of proxy metrics has called into question whether implementing such principles remains plausible in the face of data constraints. This will be of importance to international climate negotiators and policymakers, who will benefit from engaging with applied ethics tools, like the SEFS dashboard, to test their ethical intuitions while assessing equitable effort-sharing scenarios as climate change progresses.

**Keywords:** distributive justice, climate change, applied ethics, ethical principles, effort sharing