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Air travel for global health: flying in the face of sustainable development?

As the 2019 UN Climate Action Summit was underway, one of us arrived home after attending scientific meetings abroad, somewhat jaded from two overnight flights in less than a week. This type of travel is common for many involved in global health projects. Yet air travel presents a conundrum for work intended to support improved human health and development.

Carbon dioxide (CO₂) emissions from this trip were around 1130 kg per economy class passenger.¹ When, in addition, non-CO₂ effects are taken into account, including emissions of nitrogen oxides, contrails, and cirrus cloud formation, the effective greenhouse gas emissions almost double (around 2000 kg).² The global per person emissions estimated to be compatible with limiting global temperature rise this century to below 2°C above pre-industrial levels is 1610 kg CO₂ equivalent per annum³—400 kg less than the effective emissions for this single trip.

Air travel contributes 4 to 5% of total energy related to greenhouse gas emissions, including non-CO₂ effects.² The past 30 years have seen improvements in air travel efficiency, but this has been more than countered by increased numbers of flights. Indeed, between 1990 and 2014 the global burn of jet kerosene from civil aviation increased by 86%.²

Without effective action, over the coming decades anthropogenic greenhouse gas emissions will lead to substantial increases in morbidity and mortality including from illnesses related to heat, poor air quality, reduced food security and quality, and increases in some vector borne diseases.⁴ Additionally, there are increased extreme weather events, and growing pressures leading to conflicts and forced migration.⁴ Human health and wellbeing are indivisible from planetary health and as planetary boundaries are exceeded,⁵ it is vulnerable populations who will suffer the greatest negative impacts.⁶

There is a major inconsistency between undertaking work to promote sustainable development and travelling in a way that undermines sustainability. This is not a new concern. More than 15 years ago, Dave Reay, now Chair in Carbon Management and Education at the UK's Edinburgh University, argued that the scientific community should set an example to the wider world.⁷ His response has been to stop travelling by air, to promote the use of technology

for virtual meetings and conferences, and to travel by coach and train to meetings when feasible. However, for many of us, long distance air travel for research collaborations and scientific meetings is commonplace and the value from it is rarely questioned by research funders or institutions.

Global health requires building and nurturing equitable working relationships across countries and disciplines. Face-to-face meetings and experience of others' settings are an invaluable part of building new relationships, collectively identifying and agreeing on problems to be addressed, co-designing and implementing research, and building capacity. However, it is reasonable to question what is gained from air travel, and whether the objectives of the journey could not be met without such travel. Arguably, the global health community should move towards less travel for short meetings with a greater emphasis on what might be termed immersion travel, such as staff and student exchanges that have the potential to lead to institution level changes and improvements. A focus on building long-term institutional partnerships—eg, over several grant funding cycles—would also facilitate restricting air travel to higher value immersion activities.

Research funders are in a good position to raise awareness and promote change on air travel for global health. For example, at the grant application stage funders could require applicants to provide an estimate of the greenhouse gas costs of the travel in the proposal and a justification as to why alternative, lower carbon cost travel and meeting arrangements will not suffice. Funders might also appraise or require a statement on the capacity of research institutions to hold virtual meetings, and on how institutions are working to improve such capacity. It would be essential that such a requirement did not disadvantage resource-constrained institutions in low-income and middle-income countries (LMIC) in grant applications, but rather be used to help identify capacity building potential and needs. Funders that are willing to provide specific funding to help improve and maintain capacity for effective participation in virtual meetings, especially in LMICs, would be particularly valuable.

If air travel is considered essential, the carbon costs of this travel should at least be offset through accredited schemes.⁸ Such offsetting could be included in the research costs, and thus factored into the travel costs at the grant application stage. Where air travel for work is not covered by a grant, then offsetting costs could be covered by the institution paying for the travel. Offsetting is not without controversy, not least because flying less is more effective than attempting to mitigate the damage caused.

Air travel is set to double over the next 20 years⁹ and will increase greenhouse gas emissions.² The challenges of global health and sustainable development require more, not less, international collaboration but there is a pressing need to lead by example in reducing greenhouse gas emissions. Research funders and institutions should require explicit estimates of carbon costs and promote more climate friendly approaches to international collaboration.

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