

## THE USE OF SMOKE-BASED FUMIGATION: A WIDESPREAD BUT NEGLECTED SOURCE OF AIR POLLUTION IN ETHIOPIA.

### Association of Physicians of Great Britain and Ireland Links with Developing Countries Scheme 2018/2019

Report on grant awarded to Prof David Phillips, MRC Lifecourse Epidemiology Unit, University of Southampton.

#### ACTIVITIES COMPLETED DURING THE DURATION OF THE GRANT

We are very grateful to the Association for the award of this grant which has enabled us (1) to bring two researchers from Ethiopia to the UK to develop appropriate collaborations with the Universities of Southampton, Durham and King's college, London, and (2) to carry out pilot work in Ethiopia to investigate the use of smoke-based fumigation.

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#### PART 1. (UK BASED)

Prof Mirgissa Kaba and Mr Yohannes Kidemariam of the University of Addis Ababa were awarded visas and visited Southampton between 7<sup>th</sup> and 21<sup>st</sup> May 2019.

##### Activities undertaken included:

- Visits to the University of Durham's department of Anthropology for discussions with Dr Andrew Russell and Dr Jed Stevenson.
- Participation in a research workshop at the MRC Unit to consider the reasons, sources and consequences of air pollution in sub-Saharan Africa (attended by 22 researchers including Prof Stephen Holgate, RCP special adviser on air quality).
- Development of questionnaires and procedures to be used in Ethiopian studies.
- Writing a research ethics application (for Universities of Southampton/Addis Ababa).

In addition, a meeting was held to develop collaboration with atmospheric researchers at King's College, London (led by Prof Martin Wooster) who have agreed to assist with the Ethiopian studies.

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#### PART 2. (ETHIOPIA BASED)

A pilot project was set up in Dessie, Amhara, a city 400km NE of Addis Ababa where during Sept-Oct 2019, the questionnaires and procedures developed in Southampton were used in a mixed methods study (house to house prevalence in 300 households together with detailed semi-structured qualitative interviews in 25 informants) to assess the widespread cultural belief that smoke has purifying properties and its use in a wide range of hygienic and healing processes. The field work was carried out by Profs Dan Levene (University of Southampton), David Phillips (AP member) and Mirgissa Kaba from the University of Addis Ababa and assisted by a number of local field workers. Although it was not possible to carry out direct measurements of particulate emissions using portable measuring apparatus, samples of the substances used in Ethiopia have been bought back to the UK for analysis in a combustion chamber at Rothamsted Research.

The data are currently being analysed and will form the basis for a publication and presentations at appropriate scientific meetings. These will acknowledge the support provided by the Association of Physicians.