

n in a Kenyan village.

Wafula, E.M; Onyango, F.E.; Thairu, H; Boleij, J.S.; Hoek, F.; Ruigewaard, P; Kagwanja, S; De Koning, H; Pio, A.; Kimani, E

Abstract:

In April 1986, a study was carried out within rural households in Maragua area, Muranga District, Republic of Kenya, to assess the degree of indoor air pollution and to find its relationship, if any, to acute respiratory infections (ARI) among children aged below 5 years within the study. This study was carried out within an ongoing aetiological and epidemiological community study on ARI as a collaborative effort between the Department of Paediatrics, University of Nairobi; the Department of Chemistry, Kenyatta University; the Department of Environmental Sciences, Agricultural University, Wageningen, The Netherlands; the World Health Organization; and the Ministry of Health, Republic of Kenya. Repeated 24 hour measurements of respirable suspended particles (RSP) and nitrogen dioxide (NO₂), were carried out in 36 randomly selected houses where most of the cooking was done on open fires using firewood and crop residues as fuel. Data on house characteristics and activity in the study were gathered by questionnaire. The mean of 24 hour average RSP concentration (1400mg/m³), average during the 7 hours of daily burning (3000-4000mg/m³), and evening peak levels (up to 3600mg/m³) indicate that deleterious health effects due to exposure to excessive levels of toxic pollutants in smoke from biomass combustion are likely to occur especially among pre-school children and women. Concentrations of selected polycyclic hydrocarbons in the particulate material were found to be high. It was not possible to demonstrate a relationship between the indoor air pollution and episodes of ARI partly because of small sample size and also the more or less homogeneous nature of pollution among all the households.