

FIRST ASSESSMENT OF THE IMPACTS OF SAHARAN DUST EVENTS ON THE RESPIRATORY HEALTH IN WEST AFRICA: A CASE STUDY IN THE NORTHERN BENIN

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More than 50% of the global dust emitted into the atmosphere comes from the Sahara. About 60% of the Saharan dust move southwards to the Gulf of Guinea (Engelstaedter et al., 2006). Once in the air, these dust contribute to increase the concentrations of particles smaller than 10 microns (PM_{10}), which are respirable particles (Ozer et al. 2005). A number of adverse health effects have been associated with desert dust, including respiratory diseases (Goudie, 2014). Quantitative studies on health impacts of desert dust generally focus on Asia and in recent years, many authors have identified significant health impacts of Saharan dust events in Southern Europe (de Longueville et al., 2013b), although PM_{10} concentrations were well below those recorded in West Africa. The scarcity of information about air quality relating to the African continent is a reality and consequently, no study about dust impacts on air quality and human health have been conducted in West Africa (de Longueville et al., 2010). Based on the combination of two information sources, it was possible to determine the dust events having affected the region of Kandi (northern Benin) over the period 2003-2007 during dry seasons. On the whole study period, 61 days with dust events were noted in this region. The daily PM_{10} concentrations were multiplied by 18.5 during these dust events, what contributes to strongly exceed the WHO standards. From health data (consultations of children for acute lower respiratory infections (ALRI)), we calculated a 12.5% increase of the monthly rates of ALRI during months having recorded dust event on the same period. Even if this increase is far from being unimportant, it seems relatively limited compared with the impacts which we could expect considering reached PM_{10} concentrations (de Longueville et al., 2013a). So, it is necessary to multiply such researches in West Africa to better quantify the impacts of Saharan dust on the health of its populations.

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