Written evidence submitted by Dr Karen Johnson, Durham University

I am writing to clarify the results of our study which we discussed in the Government’s Environmental Audit Committee Inquiry on soil health. We have published two papers of relevance to this issue.

The first one, to which I was referring was a national-level study (Bambra et al, 2014). The findings from this paper showed that after adjusting for potential confounders there is a strong and significant association between brownfield land and self-reported health measures across England: 'The average rate of ‘not good health’ is about 15.4 units higher than expected (given the age and sex structure of these wards) in those wards that have a large proportion of brownfield land. Similarly, limiting long-term illness rates are about 14.3 units higher'. However, we did not find a significant association between mortality and brownfield land.

The second paper (Bambra et al, 2015), to which I believe you were referring, examined inequalities both WITHIN and BETWEEN English regions. The within-region analysis results showed that two regions had significant within-region inequality for not good health: North West and South West. However, and importantly, the results of the between-region (Table 5) analysis did show that six regions (North West, North East, Yorkshire & Humber, South West, East and West Midlands) had additional not good health compared to the reference region (South East) and this was statistically significant for each of the six regions. These within and between region results were similar to the findings for limiting long-term illness (Tables 6-7). For within-region analysis for premature mortality (Table 2) the results showed significant additional mortality in three regions (South East, North East and North West). The between-region analysis (Table 3) for premature mortality also revealed statistically significant additional mortality in the North West compared to the reference region (South East) but in no other region. Therefore, the results are less clear for mortality based on just one region experiencing additional mortality.

Overall, we conclude that for self-reported health and limiting long-term illness there is a strong, adjusted significant association between brownfield land and these health outcomes across England and between regions. We do not have sufficient evidence to say that this is a causal relationship. The results are less clear for within-region inequality in these outcomes as the only consistent significant results were shown for inequalities within the North West region. Based on these findings we stand firm in our view that brownfield land is a potential public health issue and would support plans for remediation and redevelopment of brownfield land to potentially improve self-reported health. We hope this clarifies the points discussed in this inquiry.

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