

GEOCHEMISTRY AND HEALTH DATA TO INFORM PUBLIC HEALTH OUTCOMES IN WESTERN KENYA

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Environmental geochemistry data can reveal spatial differences in dietary intake with implications for health status. For example, soil and subsequently crop chemistry data is influenced by changes in soil type, pH, geology and geographical features (amongst other factors). Specific soil and food composition data can support estimates of dietary mineral supplies (Watts et al. 2019, 2021a). However, additional metrics can supplement the understanding of links between geochemistry and health in Western Kenya. Here we present a summary of data from a survey of soil and crops, but will focus in particular on the private drinking water and urines as an estimate of nutritional status or exposure to potentially harmful elements collected across 20 Counties in Western Kenya. We discuss the potential for interpreting health metrics, including: food dietary estimates, drinking water and biomonitoring data (urine – Watts et al. 2020; 2021b). Comparisons between these metrics will be discussed, along with the limitations in interpreting these data. These datasets were presented to stakeholders from each of the 20 Counties in June 2022 to provide feedback on data outcomes and to co-design the data delivery to assist in dissemination. Stakeholders included the leaders of agriculture and public health offices in each County government office and from academia. This second point of discussion will raise the importance of information flow back and the challenges in doing so e.g. mis-/over-interpretation of data, opportunities to incorporate into decision making and the stimulation of new research. In particular, the value of undertaking a multi-disciplinary research project to encourage stakeholders to plan intervention strategies with a multi-disciplinary consideration.

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