METEOR: Modelling Exposure Through Earth Observation Routines, a step towards Disaster Risk Reduction for ODA countries

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METEOR (Modelling Exposure Through Earth Observation Routines) is a three year ODA project funded by the UK Space Agency International Partnership Programme to develop innovative application of Earth Observation (EO) technologies to improve understanding of exposure with a specific focus on the countries of Nepal and Tanzania. http://meteor-project.org/

The escalating impacts of natural hazards are caused mostly by increasing exposure of populations and assets. A major challenge when making Disaster Risk Management (DRM) decisions is poor understanding of the distribution and character of exposure in ODA countries. Exposure needs to be mapped, monitored and modelled by Governments, NGOs, affected communities and businesses, seeking to bolster resilience and growth. Robust, quantitative methods are required to justify resilience decisions and risk mitigation. Projects have aimed to map exposure using Earth Observation (EO) using a range of approaches, though the application of these in DRM has been greatly limited by the fact that many have been poorly calibrated, for instance by being based solely upon readily available data, or were designed only for a particular setting.

METEOR takes a step-change in the application of EO exposure data by developing and delivering rigorous and open routines (protocols) and standards to allow quantitative assessment of exposure, with explicit uncertainties. These protocols and standards will be co-developed for broad application to ODA countries and will be tested and validated in two contexts (Nepal and Tanzania) to ensure they are fit-for-purpose. Geohazard footprints will also be developed for those two countries. The process of building capacity and co-delivering new consistent data will promote welfare and economic development in these countries, and demonstrate the applicability of the techniques elsewhere. METEOR will deliver country-wide openly-available exposure data for the 47 least developed ODA countries. Better-informed DRM decisions that meet the demands of international drivers (e.g. SDGs, Sendai Framework) will be underpinned by our national-scale data.

The project is led by the British Geological Survey with partners from Disaster Management Department of the Prime Minister's Office, Tanzania; the National Society for Earthquake Technology (NSET), Nepal; Fathom Global; Global Earthquake Model Foundation; Humanitarian OpenStreetMap Team; ImageCat Inc; and Oxford Policy Management Limited.