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Dear Professor Papale,

I am writing to you on behalf of the 'Global Volcano Model network', to express our strong and enthusiastic support for your proposal 'Extreme Earth'.

Extreme Earth represents an urgent and transformative step forward in bringing together the Earth Science, Atmospheric science and Informatics/Technology communities in Europe to provide scientific evidence upon which risk reduction and resilience can be built. The plans for Earth-system prediction models and assimilation of observational data real-time and across scales demonstrate world leading vision, coordination and capabilities. Such scientific evidence and technological capability is essential to underpin effective decision-making, to build resilience and to enable timely mitigation, risk reduction and sustainable development in anticipation of environmental change and natural extremes.

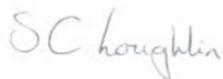
The international GVM network began in 2012 to create a sustainable, accessible information platform on volcanic hazard and risk with systemic evidence, data and analysis of volcanic hazard and risk at regional and global scales. It supports volcano observatories at a local scale. The GVM network is developing capabilities to anticipate future volcanism and its consequences. Importantly, this is a *network*, so capabilities and resources are being developed at multiple sites but with common standards, designs and approaches. Despite increasingly effective community networking (e.g. GVM network) and research infrastructures (e.g. EPOS and EUROVOLC), volcano science communities working at local to global scales are currently held back by limited access to appropriate technical and computing resources. This was a key finding of a consultation process held within the GVM network in 2016 and now Extreme Earth directly addresses this barrier to progress.

The GVM network will contribute to planning and implementation of Extreme Earth. Our network includes research institutions, practitioners (e.g. volcano observatories), public sector (e.g. civil protection), private sector (e.g. reinsurance) and NGOs who will work together to ensure that our combined knowledge and experience contributes to development of technical plans combined with an understanding of diverse needs. We can offer support in many ways but some examples are as follows:

- The GVM network coordinated 130 scientists from 86 institutions in nearly 50 countries to produce evidence on global volcanic hazard and risk and the first global model of ash fall hazard for the UN 'Global Assessment Report' 2015. We will contribute a similar level of coordination for the UN Global Assessment Report in 2021 and commit to doing so in collaboration with Extreme Earth which could take a key and leading role.
- The GVM network is developing a series of global relational databases with common data collection standards, volcano ids and opportunities for use in modelling hazard and risk. We will continue to ensure that data, databases and resources are being developed that contain appropriate standards (of data collection), metadata, uncertainties and content so they can be effectively used for modelling purposes. The GVM network works closely with the Global Earthquake Model (GEM), developing data schema for multi-hazards and collaborating on the use of GEM exposure databases and other resources.
- The GVM network will come together to ensure that existing modelling capabilities and hazards tools in Europe are fully utilised for the benefit of Extreme Earth. In addition, the volcano community is increasingly generating evidence relating to impact and dynamic risk so we will ensure this learning and knowledge is accessible to Extreme Earth.
- We strongly advocate for co-design and co-development of research, resources, products and services with users and will support such approaches. We will engage with our networks of scientists and our networks of users on behalf of Extreme Earth.
- We also commit to align projects, resources and future endeavours to ensure the success of Extreme Earth.

On behalf of the GVM network I wish you the very best of luck with this proposal.

Yours sincerely

A handwritten signature in blue ink that reads "Sue Loughlin". The signature is written in a cursive, slightly slanted style.

Sue Loughlin  
Global Volcano Model (Chair of the Management Board)