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# Contemporary volcanic hazards in the Main Ethiopian Rift

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The Main Ethiopian Rift (MER) is the type example of a magma-assisted continental rift. We focus on the central MER (~7-9 °N), which includes regularly spaced silicic caldera complexes and central stratovolcanoes on the rift axis, as well as large fields of small eruptive centres, predominantly scoria cones of basaltic composition. The recent history of volcanism in the central MER is poorly known, and no eruptions have occurred in the living memory of the local population. The only way to assess contemporary volcanic hazards and associated risk is therefore based on the volcanic geology. We present a compilation of existing literature data, geomorphological and field observations, and new geochemical data on tephra deposits from the main centres of Late Quaternary volcanic activity in the central MER, and discuss the most recent styles of activity at each, with implications for contemporary volcanic hazards. Most central MER volcanoes host large calderas with associated widespread ignimbrite flow sheets. Our observations show that these systems have displayed highly contrasting eruptive behaviour in their post-caldera stages, despite similar magma compositions and tectonic controls. Post-caldera activity is dominated at most centres by eruptions of peralkaline rhyolitic magmas, which have generated obsidian flows and domes, and pumice cones. The frequency and magnitude of explosive events however varies up to an order of magnitude between individual volcanoes. Some systems suggest a strong dominance of basaltic volcanism in their post-caldera stage, which may be related to the tectonic development of different rift segments. This work indicates that (1) relatively low-cost reconnaissance of the volcanic geology of poorly known volcanoes can yield a wealth of crucial information on potential hazards; (2) seemingly similar volcanoes in a given tectonic context display highly contrasting behaviour, which raises concerns about the use of analogues to inform hazard and risk mitigation policies.