

Provenance of the Miocene Sequence in Southern Israel: a multi proxy isogeochemistry study

N. KEDEM^{*1,2}, Y.HARLAVAN², R. CALVO², D. AVIGAD³

¹Institute of Earth Sciences, The Hebrew University,
Jerusalem 91904, Israel (*corospondance
:Nadavkg@gmail.com)

²Geological Survey of Israel, 30 Malkhe Israel, Jerusalem
95501, Israel (y.harlavan@gsi.gov.il,
rani.calvo@gsi.gov.il)

³Institute of Earth Sciences, The Hebrew University,
Jerusalem 91904, Israel (dov.avigad@mail.huji.ac.il)

The early Miocene in southern Israel was a highly active tectonic and fluvial environment. During this time, deposition of a massive (up to 2000 meter thick) clastic sequence named the Hazeva-Formation took place. Large spatial distribution and thickness may indicate that the entire area was once covered by over a kilometer of sandstones. The sequence is divided to three depositional cycles, depicting tectonic evolution during the Miocene. Research of this formation has shed light on the paleogeography and the environmental processes that took place in the region. However, the sediments sources and long-scale drainage pathways have yet to be identified. The isotopic systems of Sr, Pb, and Nd combined with REE, are useful for identifying magma reservoirs, and mantle extraction ages. Analysing three mineralogical phases separated from the siliciclastic sequence and comparing data with possible provenances from the African-Plate, will enable to identify a geochemical-fingerprint and determine the sediments sources. Results show a different source from the Paleozoic siliciclastic sequence of southern Israel. Model ages indicate a possible mixture from sources in southern Africa and the Arabian Nubian Shield.