We examine the role of shapes and spatial distribution of rigid basement blocks on the progressive development of superposed cleavage patterns within surrounding weak metasedimentary rocks. This complex evolution is first defined by standard structural field mapping and verified using finite element modeling of deformation of thin viscous sheet surrounded by rigid indenters.

Cretaceous tectonic evolution of the Gemer unit is marked by three major distinct tectonic events: 1) Formation of the Gemer Cleavage Fan (GCF) structure affecting central part of the Gemer unit, 2) transpressional shearing affecting the western Vepor promontory and development of the Trans-Gemer Shear Zone (TGSZ), 3) extrusion of the Gemer complex over eastern Vepor promontory and development of the Trans-Gemer shear zones. Towards the NE, this 5 km wide zone of steep cleavage continues into central part of the Gemer unit. This NE-SW trending zone of shear deformation (TGSZ) overprinted all previously developed metamorphic fabrics and exhibits ~20 km sinistral offset of lithological stripes and axial zone of GCF. The displacement and intensity of deformation gradually disappears towards the NE edge of the Gemer unit.

The southern part of the Gemer unit is displaced along the sinistral TGSZ towards the NE, and consequently is thrust over eastern Vepor promontory along large-scale compressive shear zone – Eastern Gemer Thrust (EGT). This zone is marked by imbrications of basement and cover (both Paleozoic and Mesozoic), intense lower greenschist mylonitization of all lithologies across a width of several kilometers. Important feature is the incorporation of the Gemer Permo-Triassic cover as well as Triassic – Jurassic Vepor cover into imbricated thrust system in form of large-scale isoclinal synclines. The foreland dipping duplexes and mylonitic foliation of the EGT system are dipping to the SW, bear intense stretching lineation plunging to the SW and show top to the NE sense of shearing.

Based on the above – described structural features we have developed a numerical model (Ježek et. al, poster session) which allows us to verify a consistency of the proposed tectonic model. Numerous aspects and consequences will be briefly discussed.