



Slow and rapid Morphotectonic evolution and the associated hazards as exemplified from Anatolia

Y. Yılmaz

Kadir Has University

34230-01 Cibali Istanbul/Turkey

Anatolia is one of the most severely deformed continental regions in the World. Such deformation caused slow and rapid motions in the crust such as coastline changes, land slides, subsidence, volcanicity, earthquakes etc.

Deformation patterns are quite diverse in different parts of Anatolia. The Eastern Anatolia is squeezed under the North- South compressional forces. The rate of shortening is measured to be about 18-20 mm/year. This has led to excessive shortening of the lithosphere beneath the East Anatolian Plateau. Consequently thermal disturbances caused volcanism and also plateau uplift. Both of these events created significant changes and modifications on morphological features and in turn they have created different forms of hazards and thus modified living conditions.

Contrary to the eastern Anatolia, western Anatolia is extending in North-South. The continental stretching formed a number of East- West trending horsts and grabens. Along the grabens are placed main rivers which drain the land to the Aegean Sea and have transported increasing amount of clastic materials derived from the elevated regions. As a result of this the alluvial materials are deposited along the rivers and therefore the Aegean Sea coast line was retreated significantly.

The Eastern Anatolian shortening is linked to the Western Anatolian extensional province by the progressive westward escape of the Anatolian plate which is bounded by the two transform faults, the North Anatolia Transform fault and the East Anatolia Transform Fault. Devastating earthquakes occur along these

faults at some time intervals.

In this paper different deformation patterns of Anatolia observed in different regions will be discussed together with different types of hazards which occurred due to the slow and rapid morphotectonic changes.