The east Aegean Sea seismic tsunamis of 12 June and 20 July 2017: lessons learned for the tsunami potential and the early warning in the Mediterranean

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On 12 June and 20 July 2017 two strong earthquakes of Mw6.3 and Ww6.6 occurred in east Aegean Sea. They ruptured to the south of Lesvos Isl. (Greece) and between Bodrum peninsula (W. Turkey) and Kos Isl. (Greece). Both earthquakes produced tsunamis which although local are important since they have been the first tsunamis occurring after various Tsunami Service Providers supporting the NEAMTWS/IOC/UNESCO became operational. These tsunamis have been documented in both the Greek and Turkish sides by tide-gauge records, video records, pictures, reports by authorities and eye-witnesses accounts. The first tsunami was of wave height of around 0.5 m but likely up to 1 m in south Lesvos. No damage was reported. After the second event we performed post-event field-surveys in Bodrum peninsula and Kos Isl. and collected detailed observations on the wave inundation. The maximum wave height was estimated at 2 m in Karaada islet (Turkey) and 1.5 m at Kos. For both earthquakes finite-fault models were produced by inverting P-wave records from 30 teleseismic stations. A first effort has been made to simulate the tsunamis using as inputs the fault models obtained. The operational and social lessons learned from both tsunamis are examined as regards both the upstream and downstream components of the early warning procedure. NOA co-authors acknowledge support by the project "GEORISK – Developing Infrastructure and Provision of Services through Actions of Excellence to Reduce the Impact of Geodynamic Hazards" (MIS 5002541), "Action for the Strategic Development of Research and Technology Organizations", Operational Programme "Competitiveness, Entrepreneurship and Innovation" (NSRF 2014-2020) co-financed by Greece and the European Regional Development Fund-EU.