

# Supplementary Materials: Revisiting the most destructive earthquake sequence in the re-cent history of Greece: environmental effects induced by the 9, 11 and 12 August 1953 Ionian Sea earthquakes

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## 1. Supplementary Information

**Table S1:** Primary effects induced by the August 1953 Ionian Sea earthquakes in the southern Ionian Islands and related ESI-07 intensities.

| PRIMARY EARTHQUAKE ENVIRONMENTAL EFFECTS |                            |                             |   |                |                               |                                   |                  |   |                           |
|--|----------------------------|-----------------------------|---|----------------|-------------------------------|-----------------------------------|------------------|---|---------------------------|
| Earthquake                               | Earthquake-affected island | Fault Block affected by EEE | Area affected by EEE  | EEE Category   | EEE Type                      | EEE Description                   | ESI-07 intensity | Source  | Information Reliability * |
| 12 August 1953                           | Cephalonia                 | Erissos peninsula           | In 3 sites along the coast located NE of Ayia Efimia village    | Primary effect | Permanent surface deformation | Coseismic uplift from 15 to 25 cm | VIII-IX          | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1                         |
|  |                            | Aenos Mt                    | Along the coast of Sami Bay, extending from Ayia Efimia to Sami | Primary effect | Permanent surface deformation | Coseismic uplift from 25 to 40 cm | VIII-IX          | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1                         |
|  |                            | Aenos Mt                    | Along the coast of Sami Bay, extending from Ayia Efimia to Sami | Primary effect | Permanent surface deformation | Coseismic uplift from 50 to 60 cm | IX               | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1                         |
|  |                            | Aenos Mt                    | Along the coast of Sami Bay, extending from Sami and NE of it   | Primary effect | Permanent surface deformation | Coseismic uplift of 30-40 cm      | VIII-IX          | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1                         |

|  |  |   |  |                |                               |                                |         |   |   |
|--|--|---|--|----------------|-------------------------------|--------------------------------|---------|---|---|
|  |  | Aenos Mt                                      | Along the coast from SE of Sami to SE of Poros   | Primary effect | Permanent surface deformation | Coseismic uplift of 50-70 cm   | IX      | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1 |
|  |  | Argostoli peninsula                           | In the southern coast of the fault block of Argostoli peninsula, along the coast south of Moussata village                       | Primary effect | Permanent surface deformation | Coseismic uplift of 30-50 cm   | VIII-IX | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1 |
|  |  | Argostoli peninsula                           | In the western end of the Argostoli peninsula, NW of Argostoli   | Primary effect | Permanent surface deformation | Coseismic uplift of 30-35 cm   | VIII-IX | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1 |
|  |  | Transition from Erissos peninsula to Aenos Mt | Myrtos coastal area, in the western coastal end of the transition zone from the fault block of Aenos Mt to the Erissos peninsula | Primary effect | Permanent surface deformation | Coseismic uplift from 40-45 cm | VIII-IX | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1 |
|  |  | Transition from Erissos peninsula to Aenos Mt | Myrtos coastal area, in the western coastal end of the transition zone from the fault block of Aenos Mt to the Erissos peninsula | Primary effect | Permanent surface deformation | Coseismic uplift of 70 cm      | IX      | Stiros et al. (1994)<br>Pirazzoli et al. (1994) | 1 |

|  |           |                         |   |                |                               |   |    |                         |   |
|--|-----------|-------------------------|---|----------------|-------------------------------|---|----|-------------------------|---|
|  | Zakynthos | Offshore Zakynthos town | Close to Zakynthos town, towards Cephalonia | Primary effect | Permanent surface deformation | Permanent coseismic uplift resulting in emergence of a small island | IX | Taxydromos (16.08.1953) | 1 |
|--|-----------|-------------------------|---|----------------|-------------------------------|---|----|-------------------------|---|

\* Information reliability: 1: high; 2: moderate; 3: low

**Table S2:** Secondary effects induced by the August 1953 Ionian Sea earthquakes in the southern Ionian Islands and related ESI-07 intensities.

| SECONDARY EARTHQUAKE ENVIRONMENTAL EFFECTS |                            |                             |  |                  |                |  |   |                     |   |                         |
|--|----------------------------|-----------------------------|--|------------------|----------------|--|---|---------------------|---|-------------------------|
| Earthquake                                 | Earthquake-affected island | Fault Block affected by EEE | Area affected by EEE   | EEE Category     | EEE Type       | EEE Description                            | Impact on the built environment and the local population  | I <sub>ESI-07</sub> | Source  | Information Reliability |
| 9 August                                   | Ithaki                     | Central fault block         | Along the main road leading from Vathi area, located in the southern fault block, to Stavros area, located in the northern fault block of the island | Secondary effect | Ground cracks  | Ground cracks along the main road          | Road damage in several sites resulting in temporary traffic disruption between the northern and the southern part of the island | VII-VIII            | Ethnikos Kirix (10.08.1953)<br>I Imera (11.08.1953)<br>Neologos Patron (11.08.1953) | 1                       |
|  |                            | Central fault block         | Along the main road leading from Vathi area, located in the  | Secondary effect | Slope failures | Rockfalls and landslides were generated in | Road damage in several sites resulting in temporary   | VII                 |   | 1                       |

|            |  |   |  |                |   |  |   |  |   |  |
|------------|--|---|--|----------------|---|--|---|--|---|--|
|            |  |   | southern fault block, to Stavros area, located in the northern fault block of the island |                |   | several sites along the road network of Ithaki Island. | traffic disruption between the northern and the southern part of the island |  |   |  |
| Cephalonia | Argostoli peninsula                                | In the quarries of Argostoli town, which were located close to the beach  | Secondary effect   | Slope failures | Rockfalls   | -  | VII   | Ethnikos Kirix (10.08.1953)  | 2 |  |
|            | Aenos Mt   | Along the road network between Argostoli and the northern part of the island and in particular along the western slopes of Ayia Dynati Mt | Secondary effect   | Slope failures | Rockfalls and landslides  | Temporary traffic disruption                           | VII   | Neologos Patron (11.08.1953)<br>Peloponnisos (11.08.1953)<br>Empros (11.08.1953) | 1 |  |
|            | Erissos fault block, northeastern part of Aenos Mt | Erissos and Pylaros areas   | Secondary effect   | Dust clouds    | Dust clouds were induced and they were attributed not only to collapse of | -  | VIII  | I Imera (11.08.1953)<br>Neologos Patron (11.08.1953)                             | 1 |  |

|  |  |  |  |  |  |   |  |  |                     |  |
|--|--|--|--|--|--|---|--|--|---------------------|--|
|  |  |  |  |  |  | buildings but also to the intense ground shaking and to the generation of slope failures. |  |  | Empros (11.08.1953) |  |
|--|--|--|--|--|--|---|--|--|---------------------|--|

| SECONDARY EARTHQUAKE ENVIRONMENTAL EFFECTS |                            |  |                                    |                  |                |                                  |  |                     |                              |                         |
|--|----------------------------|--|------------------------------------|------------------|----------------|----------------------------------|--|---------------------|------------------------------|-------------------------|
| Earthquake                                 | Earthquake-affected island | Fault Block affected by EEE  | Area affected by EEE               | EEE Category     | EEE Type       | EEE Description                  | Impact on the built environment and the local population                           | I <sub>ESI-07</sub> | Source                       | Information Reliability |
| 11 August 1953                             | Cephalonia                 | Southeastern Cephalonia  | Chionata, Skala and Poros villages | Secondary effect | Slope failures | Rockfalls along the road network | Destruction of the road network and temporary traffic and communication disruption | VII                 | TO VIMA (12.08.1953)         | 1                       |
|  |                            | Eastern part of the fault block of Aenos Mt and eastern Cephalonia | Sami                               | Secondary effect | Slope failures | Rockfalls along the road network | Destruction of the road network and temporary traffic and                          | VII                 | Neologos Patron (12.08.1953) | 1                       |

|  |  |  |  |                  |                |  |  |      |  |   |
|--|--|--|--|------------------|----------------|--|--|------|--|---|
|  |  |  |  |                  |                |  | communication disruption   |      |  |   |
|  |  | Eastern part of the fault block of Aenos Mt and eastern Cephalonia | Along the road network leading from Sami to Argostoli town | Secondary effect | Slope failures | Rockfalls along the road network   | Destruction of the road network and temporary traffic and communication disruption | VII  | TO VIMA (12.08.1953)                         | 1 |
|  |  | Western part of the Aenos Mt fault block                           | Western slopes of Ayia Dynati                              | Secondary effect | Slope failures | Rockfalls along the road network   | Destruction of the road network and temporary traffic and communication disruption | VII  | I Imera (12.08.1953)                         | 1 |
|  |  | Argostoli peninsula  | Lourdata   | Secondary effect | Slope failures | Detachment of scree from bedrock and subsequent landslides and rockfalls | -  | VII  | TO VIMA (12.08.1953)<br>I Imera (12.08.1953) | 1 |
|  |  | Aenos Mt   | Tzanata  | Secondary effect | Slope failures | Rockfalls  | Complete destruction of buildings, uprooting of trees and 14 fatalities            | VIII | Peloponnisos (12.08.1953)                    | 1 |

|  |        |                                |   |                  |                          |   |   |          |   |   |
|--|--------|--------------------------------|---|------------------|--------------------------|---|---|----------|---|---|
|  |        | Aenos Mt                       | Chaliotata                              | Secondary effect | Hydrological anomaly     | The water discharge of a spring, at a distance of about 100 m west of the village, increased after the earthquake.  | -   | VII      | IGUR (1954)   | 1 |
|  |        | Argostoli peninsula            | Metela square, next to Argostoli prison | Secondary effect | Ground cracks            | The square was affected by Ground cracks and subsidence   | Responsible for the collapse of an adjacent prison    | VII-VIII | Peloponnisos (12.08.1953)   | 1 |
|  | Ithaki | Southern fault block of Ithaki | Vathi                                   | Secondary effect | Anomalous wave / Tsunami | Waves of one meter height, inundation of a 1-km-long coastal area up to a distance of 200 m from the shore. Sea withdrawal and subsequent coastal inundation. | The Customs Office of Vathi flooded by the inundation | VIII     | Eleftheria (12.08.1953)<br>Empros (12.08.1953)<br>TO VIMA (12.08.1953)<br>Neologos Patron (12.08.1953)<br>Peloponnisos (12.08.1953) | 1 |

|  |           |                                |                |                  |                      |   |  |         |  |   |
|--|-----------|--------------------------------|----------------|------------------|----------------------|---|--|---------|--|---|
|  |           |                                |                |                  |                      | Similar phenomena mainly after the largest aftershocks.   |  |         |  |   |
|  |           | Southern fault block of Ithaki | Vathi          | Secondary effect | Hydrological anomaly | Earthquake-affected wells of questionable purity  | Lack of potable water and risk of infectious diseases outbreak | VIII-IX | Eleftheria, (1953)   | 1 |
|  |           | Southern fault block of Ithaki | Vathi          | Secondary effect | Ground cracks        |   |  | VI-VII  | TO VIMA (12.08.1953)   | 1 |
|  | Zakynthos | Skopos Mt fault block          | Zakynthos town | Secondary effect | Liquefaction         | The coast of Zakynthos town suffered Ground cracks attributed to Liquefaction-induced lateral spreading | The jetty suffered extensive cracking                          | VIII    | Peloponnisos (12.08.1953)<br>TA NEA (11.08.1953)<br>I Imera, (12.08.1953)<br>Empros (12.08.1953) | 1 |
|  |           | Not available                  | Not available  | Secondary effect | Hydrological anomaly | Sulphureous gas emissions and subsequent flames coming out of Ground                                    | -  | VIII-IX | Neologos Patron (12.08.1953)   | 3 |

|  |  |  |  |  |  |   |  |  |  |  |
|--|--|--|--|--|--|---|--|--|--|--|
|  |  |  |  |  |  | cracks indicating combustion of natural gas |  |  |  |  |
|--|--|--|--|--|--|---|--|--|--|--|

| SECONDARY EARTHQUAKE ENVIRONMENTAL EFFECTS |                            |                             |                      |                  |              |   |  |                     |  |                         |
|--|----------------------------|-----------------------------|----------------------|------------------|--------------|---|--|---------------------|--|-------------------------|
| Earthquake                                 | Earthquake-affected island | Fault Block affected by EEE | Area affected by EEE | EEE Category     | EEE Type     | EEE Description   | Impact on the built environment and the local population | I <sub>ESI-07</sub> | Source   | Information Reliability |
| 12 August                                  | Cephalonia                 | Argostoli peninsula         | Argostoli            | Secondary effect | Liquefaction | Extensive and deep cracks in Argostoli port   | Damage to the port                                       | VIII                | Taxydromos (14.08.1953)<br>TA NEA (12.08.1953, 13.08.1953) | 1                       |
|  |                            | Paliki peninsula            | Lixouri              | Secondary effect | Liquefaction | Ground cracks along the Lixouri coastal area resulting in dipping of the coast towards the sea. Ground cracks and subsidence of about 1 m in the quay of Lixouri. Submerged walls | Damage to the port                                       | VIII                | Loukeris (2013) published in I Kefanonitiki Proodos        | 1                       |

|  |  |   |                    |                  |                                  |  |   |        |                     |   |
|--|--|---|--------------------|------------------|----------------------------------|--|---|--------|---------------------|---|
|  |  |   |                    |                  | in the eastern part of the port. |  |   |        |                     |   |
|  |  | Erissos peninsula   | Markoulata village | Secondary effect | Slope failures                   | Rockfalls along an adjacent hill   | -   | VI-VII | IGUR (1954)         | 1 |
|  |  | Transition from Erissos peninsula to Aenos Mt fault block | Myrtos             | Secondary effect | Slope failures                   | Detachment of a boulder from the slope in Myrtos and ending up in the adjacent bay. Change of the color of the sea from the unstable materials that had fallen inside. | Total destruction of a small church   | VII    | Empros (14.08.1953) | 1 |
|  |  | Erissos peninsula   | Lekatsata          | Secondary effect | Slope failures                   | Rockfalls generated along a gorge between Karousata and Lekatsata  |   | VII    | IGUR (1954)         | 1 |
|  |  | Erissos peninsula   | Karousata          | Secondary effect | Slope failures                   | Rockfalls in a large scale   | Part of the damage observed in the building stock of these villages attributed to rockfalls | VIII   | IGUR (1954)         | 1 |
|  |  | Erissos peninsula   | Logarata           | Secondary effect | Slope failures                   | Rockfalls in a large scale   | Part of the damage observed in the building   | VIII   | IGUR (1954)         | 1 |

|  |  |   |                    |                  |                |  | stock of these villages attributed to rockfalls         |     |             |   |
|--|--|---|--------------------|------------------|----------------|--|---|-----|-------------|---|
|  |  | Eastern margin of Thinia valley, transition from Aenos Mt fault block to Paliki peninsula | Agonas             | Secondary effect | Slope failures | Rockfalls affected the upper part of Agonas, while its lower part was protected by series of olive trees, which acted as a barrier against down rolling boulders | Damage to buildings in the upper part of Agonas village | VII | IGUR (1954) | 1 |
|  |  | Eastern margin of Thinia valley, transition from Aenos Mt fault block to Paliki peninsula | Ayia Kyriaki coast | Secondary effect | Slope failures | The debris rockfall in Ayia Kyriaki area reached the sea causing local disturbance and temporary change to its color   | -   | VII | IGUR (1954) | 1 |
|  |  | Eastern margin of Thinia valley, transition from Aenos Mt fault                           | Over Sotiras beach | Secondary effect | Slope failures | Rockfalls from the mountain over Sotiras beach   | -   | VI  | IGUR (1954) | 1 |

|  |  |  |                          |                  |                |   |   |         |   |   |
|--|--|--|--------------------------|------------------|----------------|---|---|---------|---|---|
|  |  | block to Paliki peninsula                |                          |                  |                |   |   |         |   |   |
|  |  | Western part of the Aenos Mt fault block | Kourouklata              | Secondary effect | Slope failures | Rockfalls along the abrupt slopes of Tiganeto Mt surrounding Kourouklata                                  | Kourouklata was completely destroyed by falling debris  | VIII-IX | Peloponnisos (16.08.1953) IGUR (1954)                   | 1 |
|  |  | Western part of the Aenos Mt fault block | Kourouklata              | Secondary effect | Slope failures | Rockfalls along the abrupt slopes of Chalio Mt surrounding Kourouklata                                    | Kourouklata was completely destroyed by falling debris  | VIII-IX | Peloponnisos (16.08.1953) IGUR (1954)                   | 1 |
|  |  | Western part of the Aenos Mt fault block | North of Drapano village | Secondary effect | Slope failures | Extensive slope failures comprising rockfalls. Blocks ended up in the adjacent sea of the Argostoli Gulf. | -   | VI-VII  | Petratos (2013) published in I Kefalonitiki Proodos     | 1 |
|  |  | Eastern part of the Aenos Mt fault block | Sami                     | Secondary effect | Slope failures | Rockfalls generated along the western slopes of the Avgo Mt   | Structural and non-structural damage to buildings, many collapsed buildings, damage to the road network resulting | VIII    | TA NEA (12.08.1953) Taxydromos (14.08.1953, 19.08.1953) | 1 |
|  |  | Eastern part of the Aenos                | Zervata                  | Secondary effect | Slope failures | Rockfalls generated along the western   |   | VIII    | I Imera (13.08.1953) IGUR (1954)                        | 1 |

|  |  |  |            |                  |                |   |   |      |                         |   |
|--|--|--|------------|------------------|----------------|---|---|------|-------------------------|---|
|  |  | Mt fault block                           |            |                  |                | slopes of the Avgo Mt                                       | in traffic and communication disruption and effects on vegetation including destruction of olive trees and vineyards                        |      |                         |   |
|  |  | Eastern part of the Aenos Mt fault block | Katapodata | Secondary effect | Slope failures | Rockfalls triggered along the western slopes of the Avgo Mt | Further damage to some buildings of the village attributed to rockfalls   | VIII |                         | 1 |
|  |  | Eastern part of the Aenos Mt fault block | Dichalia   | Secondary effect | Slope failures | Rockfalls   | Failure of a coastal part with an area of 1000 m <sup>2</sup> took place before the August earthquakes and reactivated during the mainshock | VIII | IGUR (1954)             | 1 |
|  |  | Aenos Mt fault block                     | Pyrgi      | Secondary effect | Slope failures | Rockfalls triggered along the eastern slopes of Roudi Mt    | Boulders accumulated on the adjacent roads resulting in temporary traffic disruption  | VII  | Taxydromos (19.08.1953) | 1 |

|  |  |                               |             |                  |                |  |   |        |   |   |
|--|--|-------------------------------|-------------|------------------|----------------|--|---|--------|---|---|
|  |  | Aenos Mt fault block          | Valsamata   | Secondary effect | Slope failures | Rockfalls triggered along the slopes over the village                              | Contribution of rockfalls to the complete destruction of the village  | VIII   | Taxydromos (14.08.1953)                         | 1 |
|  |  | Aenos Mt fault block          | Monastiraki | Secondary effect | Slope failures | Rockfalls triggered along an abrupt slope northeast of Monastiraki                 |   | VI-VII | IGUR (1954)                                     | 1 |
|  |  | Aenos Mt fault block          | Tzanata     | Secondary effect | Slope failures | Rockfalls triggered along the slopes over the village                              | Heavy structural damage to buildings resulting in increase of fatalities and injured people   | VIII   | Taxydromos (14.08.1953)<br>I Imera (14.08.1953) | 1 |
|  |  | Southern part of Aenos Mt     | Atsoupades  | Secondary effect | Slope failures | Detachment of boulders from the abrupt slopes of Aenos Mt and subsequent rockfalls | Considerable non-structural and structural damage to buildings in the village. Accumulation of boulders on the road network and traffic disruption. | VIII   | IGUR (1954)                                     | 1 |
|  |  | Southeastern part of Aenos Mt | Kolaitis    | Secondary effect | Slope failures | Rockfalls along the slopes of Aenos Mt   | Kolaitis village completely   | VIII   | IGUR (1954)                                     | 1 |

|  |                               |                      |                  |                |   |   |        |  |   |
|--|-------------------------------|----------------------|------------------|----------------|---|---|--------|--|---|
|  |                               |                      |                  |                |   | destroyed by rockfalls  |        |  |   |
|  | Southeastern part of Aenos Mt | Arginia              | Secondary effect | Slope failures | Rockfalls along the slopes of Aenos Mt                                | -   | VII    | IGUR (1954)  | 1 |
|  | Southeastern part of Aenos Mt | Chionata             | Secondary effect | Slope failures | Rockfalls along the slopes of Aenos Mt                                | Heavy damage to buildings attributed to rockfalls resulting in many fatalities and injured people | VIII   | IGUR (1954)  | 1 |
|  | Southern part of Aenos Mt     | Plateies             | Secondary effect | Slope failures | Rockfalls triggered along slopes of Aenos Mt composed of limestone    | A fatality in the northeastern part of Plateies village was attributed to rockfalls               | VIII   | IGUR (1954)  | 1 |
|  | Southeastern Cephalonia       | Skala                | Secondary effect | Slope failures | Rockfalls and landslides remained active during the aftershock period | Large part of the village suffered damage from these failures                                     | VIII   | Taxydromos (14.08.1953)<br>Neologos Patron (14.08.1953)<br>TA NEA (19.08.1953) | 1 |
|  | Southeastern Cephalonia       | Anninata             | Secondary effect | Slope failures | Rockfalls close to Anninata   | Complete destruction of the village   | VIII   | Taxydromos (14.08.1953)  | 1 |
|  | Argostoli peninsula           | Kilns of Akrotiri in | Secondary effect | Slope failures | Detachment of boulders from the slopes and                            | -   | VI-VII | I Imera (14.08.1953, 16.08.1953)   | 2 |

|  |  |                     |                                      |                  |                        |   |   |         |   |   |
|--|--|---------------------|--------------------------------------|------------------|------------------------|---|---|---------|---|---|
|  |  |                     | Argostoli area                       |                  |                        | subsequent rockfalls  |   |         |   |   |
|  |  | Argostoli peninsula | Lassi area, southeast of Argostoli   | Secondary effect | Slope failures         | Activated many times during the aftershock period   | -   | VI-VII  | Neologos Patron (14.08.1953, 15.08.1953); Peloponnisos (14.08.1953); I Imera (15.08.1953); Grandazzi (1954) | 1 |
|  |  | Paliki peninsula    | Ntouri (Paliokastro) hill            | Secondary effect | Slope failures         | Rockfalls triggered along the slopes of the hill where the ancient fortified city of Pali was located | Falling material affected the vegetation of the area, as rolling blocks destroyed olive trees | VI-VII  |   | 1 |
|  |  | Paliki peninsula    | Southeastern end of Paliki peninsula | Secondary effect | Slope failures         | Rockfalls   | the upper part of the cape collapsed into the sea   | VI-VII  | Grandazzi (1954)  | 1 |
|  |  | Erissos peninsula   | Antipata                             | Secondary effect | Hydrological anomalies | Wells with depth of up to 5 m were completely drained   | Shortage of potable water   | VIII    | IGUR (1954)   | 1 |
|  |  | Paliki peninsula    | Lixouri                              | Secondary effect | Hydrological anomalies | Wells filled with muddy waters attributed to the  | Shortage of potable water carrying the risk   | VIII-IX | Taxydromos (19.08.1953)   | 1 |

|  |  |                     |            |                  |                        |   |   |         |   |   |
|--|--|---------------------|------------|------------------|------------------------|---|---|---------|---|---|
|  |  |                     |            |                  |                        | intense earthquake ground motion and subsequent water turbidity   | of outbreak of water-borne infections and gastrointestinal diseases |         | Loukeris (2013) published "I Kefalonitiki Proodos" journal      |   |
|  |  | Argostoli peninsula | Argostoli  | Secondary effect | Hydrological anomalies | Wells filled with muddy waters attributed to the intense earthquake ground motion and subsequent water turbidity      | Shortage of potable water   | VIII-IX | TO VIMA (18.08.1953)  | 1 |
|  |  | Aenos Mt            | Chaliotata | Secondary effect | Hydrological anomalies | The water of a spring, at a distance of about 100 m west of the village, stopped running after the mainshock          | -   | VII     | IGUR (1954)   | 1 |
|  |  | Aenos Mt            | Tzanata    | Secondary effect | Hydrological anomalies | Ejection of water reported after the earthquake in a site with no vegetation attributed to changes in the groundwater | -   | VII     | Neologos Patron (14.08.1953, 18.08.1953)<br>TA NEA (17.08.1953) | 1 |

|  |  |                         |                                    |                  |                        |  |  |          |  |   |
|--|--|-------------------------|------------------------------------|------------------|------------------------|--|--|----------|--|---|
|  |  |                         |                                    |                  |                        |  |  |          | Ethnikos Kirix (17.08.1953)  |   |
|  |  | Southeastern Cephalonia | Pastra                             | Secondary effect | Hydrological anomalies | Discharge increase in springs  | -  | VIII     | Neologos Patron (14.08.1953)   | 1 |
|  |  | Aenos Mt                | Pyrgi                              | Secondary effect | Hydrological anomalies | A lake in the Pyrgi area of Sami dried up and the watermills on its shores stopped working. Its water was poured into an adjacent lake called Avythos. | -  | VIII     | AVGI (1953)  | 2 |
|  |  | Argostoli peninsula     | Argostoli                          | Secondary effect | Ground cracks          | Extensive ground cracks were generated in the Maitland (Metela, local name) square located next to the Argostoli prison                                | The collapse of the prison could be attributed to the ground cracks and related subsidence | VII-VIII | Neologos Patron (13.08.1953)<br>Petratos (2013) published in the journal of I Kefalonitiki Proodos | 1 |
|  |  | Argostoli peninsula     | Lassi area, southeast of Argostoli | Secondary effect | Ground cracks          | Ground cracks in the road  | Destruction of the road  | VII-VIII | Grandazzi (1954)   | 1 |

|  |  |  |               |                  |                               |  |  |          |  |   |
|--|--|--|---------------|------------------|-------------------------------|--|--|----------|--|---|
|  |  |  |               |                  |                               | network leading to Faraon Hill   |  |          |  |   |
|  |  | Aenos Mt                               | Sami          | Secondary effect | Ground cracks                 | Ground cracks observed probably in zones susceptible to slope failures   | Damage on the road and traffic disruption                                    | VII-VIII | TO VIMA (13.08.1953)                           | 1 |
|  |  | Aenos Mt                               | Farsa         | Secondary effect | Ground cracks                 | Formation of extensive and wide Ground cracks  | A resident was trapped in one of the cracks and villagers helped to set free | VIII     | TA NEA (2014)                                  | 1 |
|  |  | Southeastern part of Aenos Mt          | Kolaitis      | Secondary effect | Ground cracks                 | Ground cracks with NW-SE direction observed in clayey marls. Among others, a ground crack with length of 150 m, depth of 4 m, width of 0.40 m and throw of 0.45 m. | -  | VIII     | IGUR (1954)                                    | 1 |
|  |  | Transition from Argostoli peninsula to | Argostoli Bay | Secondary effect | Anomalous sea waves / Tsunami | Sea boiling in several parts, whirlpools, repeated cycles of coastal   | Slight impact along the coast  | VI-VII   | Eleftheria (13.08.1953)<br>TA NEA (13.08.1953) | 1 |

|  |  |                           |               |                  |                               |  |   |      |   |   |
|--|--|---------------------------|---------------|------------------|-------------------------------|--|---|------|---|---|
|  |  | Aenos Mt fault block      |               |                  |                               | inundation and sea withdrawal in several parts of the bay, inundation up to Argostoli square.  |   |      | TO VIMA (13.08.1953)<br>Taxydromos (14.08.1953)<br>Petratos (2013)<br>published in I Kefalonitiki Proodos journal |   |
|  |  | Aenos Mt                  | Markopoulo    | Secondary effect | Jumping stones                | Large boulders (60 m <sup>3</sup> ) received a vertical push, detached from the ground, fell and remained in the same position due to the smoothness of the soil in the area | - | VIII | IGUR (1954)   | 1 |
|  |  | Aenos Mt                  | Markopoulo    | Secondary effect | Effects on vegetation         | The root system of shrubs and trees was destroyed, resulting in their drying   | - | VIII | IGUR (1954)   | 1 |
|  |  | Transition from Argostoli | Argostoli Bay | Secondary effect | Hydrocarbon-related phenomena | Offshore steam emissions   | - | -    | TA NEA (15.08.1953)   | 2 |

|           |  |                                   |                        |                  |                      |   |   |          |   |   |
|-----------|--|-----------------------------------|------------------------|------------------|----------------------|---|---|----------|---|---|
|           |  | peninsula to Aenos Mt fault block |                        |                  |                      |   |   |          |   |   |
| Zakynthos |  | Skopos Mt fault block             | Zakynthos town         | Secondary effect | Ground cracks        | Its coastal part was intensively deformed by ground cracks. Subsidence up to half meter in several sites. | -   | VII-VIII | Neologos Patron (13.08.1953<br>14.08.1953)<br>I Imera (13.08.1953,<br>14.08.1953)<br>Peloponnisos (16.08.1953)<br>Taxydromos (16.08.1953) | 1 |
|           |  | Skopos Mt fault block             | Kokkinos Vrachos       | Secondary effect | Ground cracks        | Ground cracks accompanying slope failures   | -   | VI-VII   |   | 1 |
|           |  | Skopos Mt fault block             | Ayios Dionysios temple | Secondary effect | Liquefaction         | Ground cracks, subsidence and water gushing   | -   | VIII     | TA NEA (13.08.1953)   | 1 |
|           |  | Skopos Mt fault block             | Zakynthos town         | Secondary effect | Hydrological anomaly | Water turbidity in wells, springs running dry in several sites  |   | VIII     | Eleftheria (13.08.1953)<br>I Imera (13.08.1953)   | 1 |
|           |  | Skopos Mt fault block             | Kryoneri               | Secondary effect | Slope failures       | Rockfalls triggered in Kryoneri area  | Destruction of the adjacent road network and complete destruction of the Kryo Nero spring | VIII     | Eleftheria (13.08.1953)<br>Taxydromos (14.08.1953)  | 1 |

|  |        |                                |                                   |                  |                               |  |   |        |   |   |
|--|--------|--------------------------------|-----------------------------------|------------------|-------------------------------|--|---|--------|---|---|
|  |        | Skopos Mt                      | Skopos Mt                         | Secondary effect | Slope failures                | Rockfalls and landslides                               | -   | VI-VII | Taxydromos (14.08.1953)                         | 1 |
|  |        | Northern Zakynthos fault block | Northern part of Zakynthos Island | Secondary effect | Slope failures                | Rockfalls  | -   | VI-VII | Eleftheria (15.08.1953)<br>TO VIMA (15.08.1953) | 1 |
|  |        | Skopos Mt fault block          | Zakynthos town                    | Secondary effect | Anomalous sea waves / Tsunami | Raised sea level in the coastal area of Zakynthos town | -   | VI-VII | TO VIMA (13.08.1953)                            | 1 |
|  |        | Skopos Mt fault block          | Zakynthos town                    | Secondary effect | Hydrological anomaly          | Sulphureous gas emissions                              | -   | VIII   |   | 1 |
|  | Ithaki | Northern fault block           | Frikes                            | Secondary effect | Slope failures                | Rockfalls  | Complete destruction of heavily earthquake-affected buildings, accumulation of material on the road and traffic disruption. | VIII   | I Imera (16.08.1953)                            | 1 |
|  |        | Central fault block            | Lefki                             | Secondary effect | Slope failures                | Rockfalls  | Complete destruction of heavily earthquake-affected buildings, accumulation of material on the                              | VIII   | I Imera (16.08.1953)                            | 1 |

|  |  |                      |                       |                  |                               |  |   |          |   |   |
|--|--|----------------------|-----------------------|------------------|-------------------------------|--|---|----------|---|---|
|  |  |                      |                       |                  |                               |  | road and traffic disruption.  |          |   |   |
|  |  | Central fault block  | Ayios Ioannis         | Secondary effect | Slope failures                | Rockfalls  | Complete destruction of heavily earthquake-affected buildings, accumulation of material on the road and traffic disruption.   | VIII     | I Imera (16.08.1953)  | 1 |
|  |  | Southern fault block | Vathi                 | Secondary effect | Anomalous sea waves / Tsunami | Tsunami  | Inundation of the coast up to the squares of Vathi, water marks of small seaweed pieces left on streets of the town, some people found along its course were swept away, but no casualties reported | VIII     | Empros (13.08.1953)<br>Taxydromos (13.08.1953)<br>TA NEA (13.08.1953);<br>Neologos Patron (14.08.1953);<br>Kolosenko (1955);<br>Ambraseys (1965a) | 1 |
|  |  | Central fault block  | From Vathi to Stavros | Secondary effect | Ground cracks                 | Ground cracks along the road leading from Vathi to Stavros | Damage to the road network  | VII-VIII | Empros (14.08.1953)   | 1 |

|  |  |                      |           |                  |                               |                                |   |        |                         |   |
|--|--|----------------------|-----------|------------------|-------------------------------|--------------------------------|---|--------|-------------------------|---|
|  |  | Southern fault block | Vathi     | Secondary effect | Liquefaction                  | Ground cracks in pier of Vathi | Damage to pier  | VI-VII | Eleftheria (15.08.1953) | 1 |
|  |  | Southern fault block | Vathi Bay | Secondary effect | Anomalous sea waves / Tsunami | Anomalous sea waves            | Passengers of a boat, which was at the anchorage close to Vathi village in Ithaki, were shaken with such force that they had the impression that the boat was sinking | VI     | Soloviev et al. (2020)  | 1 |