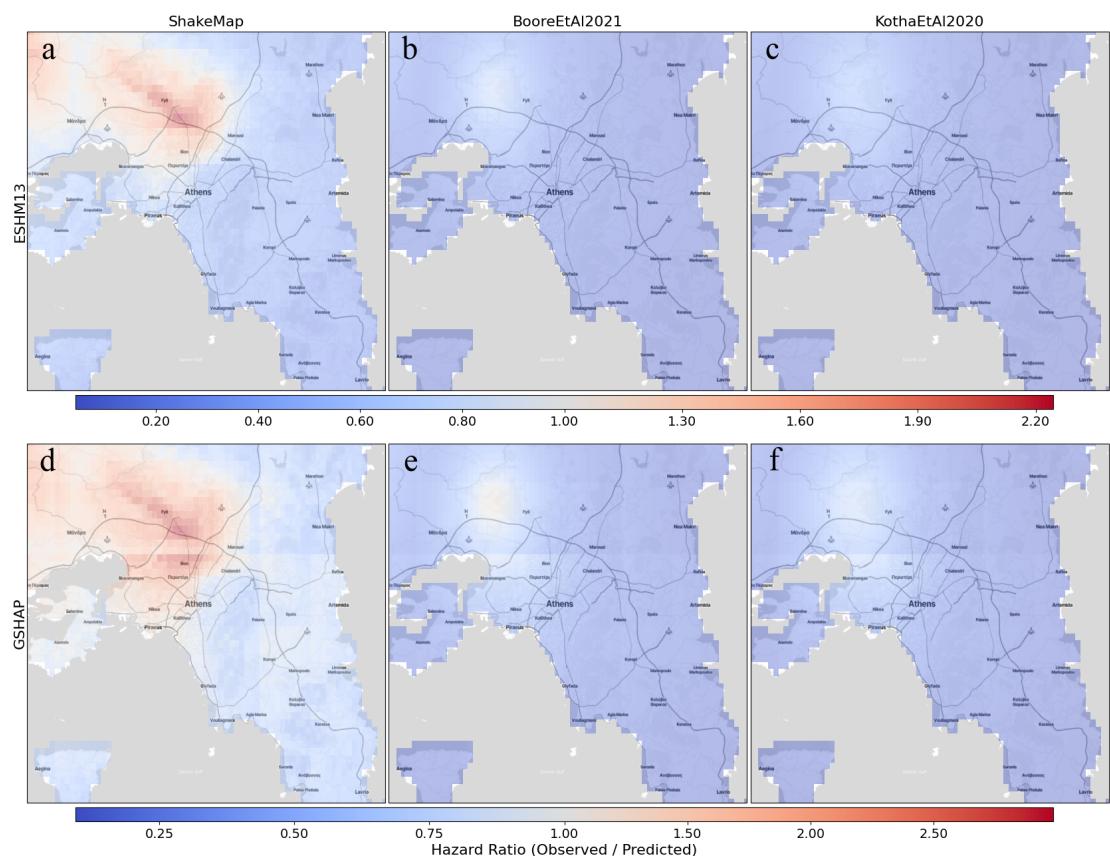
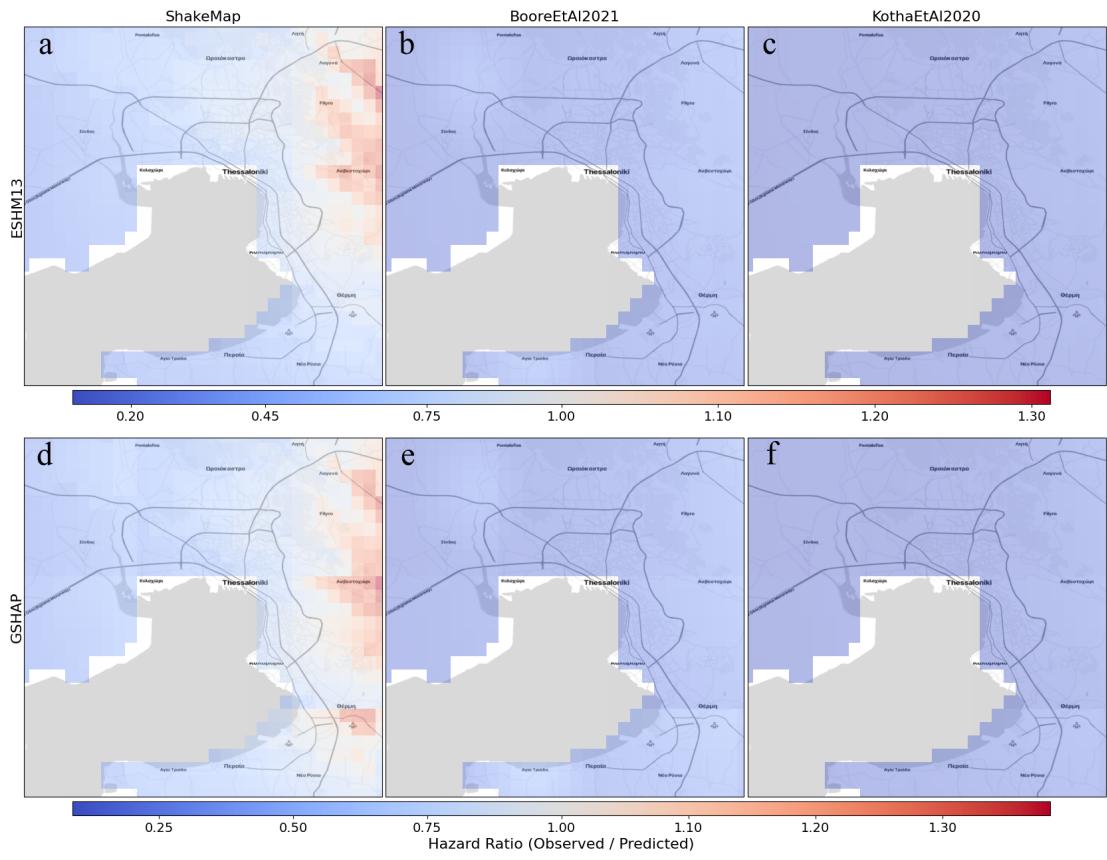


# SUPPLEMENT A

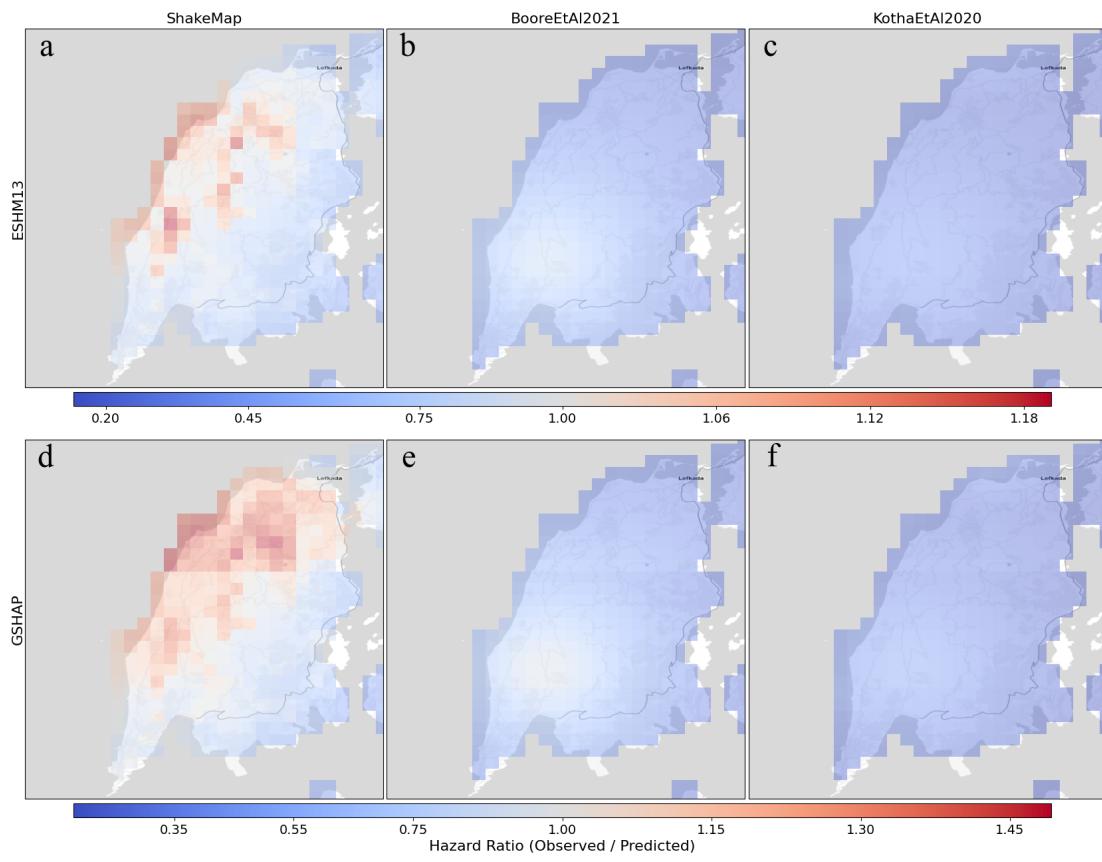
## Figures



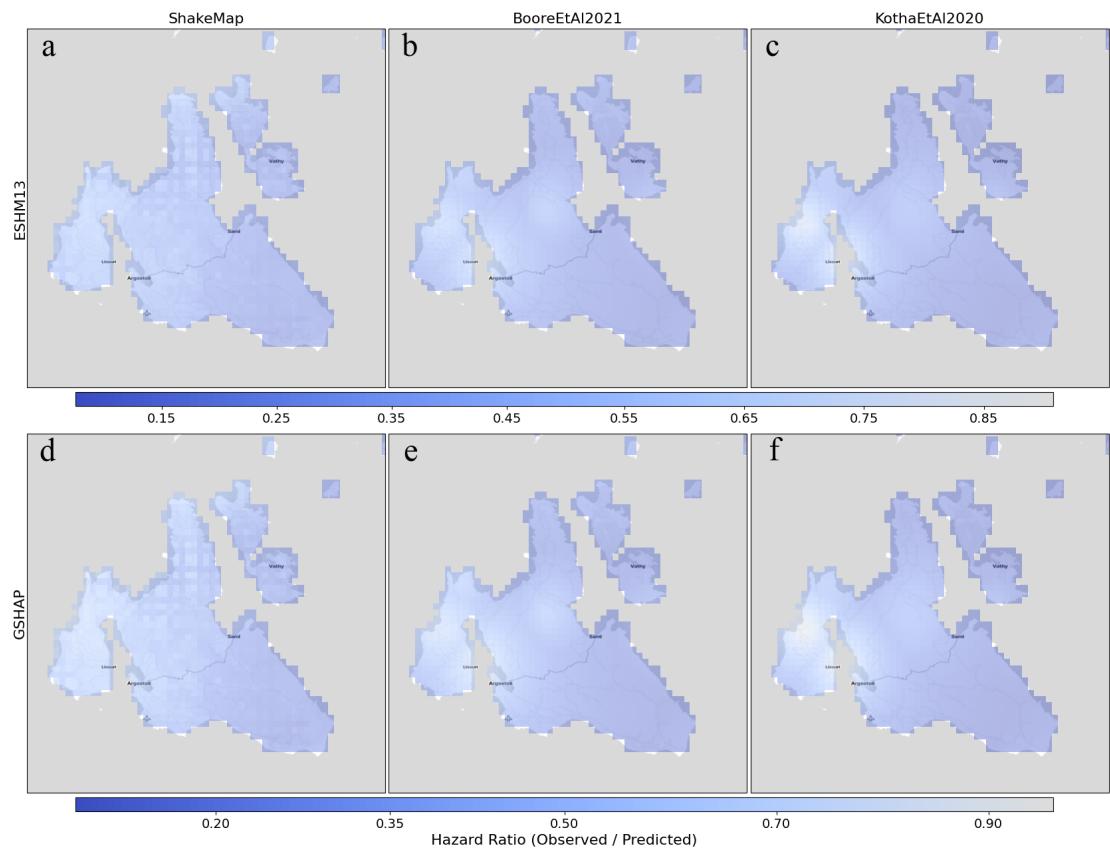
**Figure S-1.** Hazard Ratio for Athens of (a,d) the 1973-2023 ShakeMap footprints PGA, (b,e) Boore et al. (2021), and (c,f) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) ESHM13, (d,e,f) GSHAP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



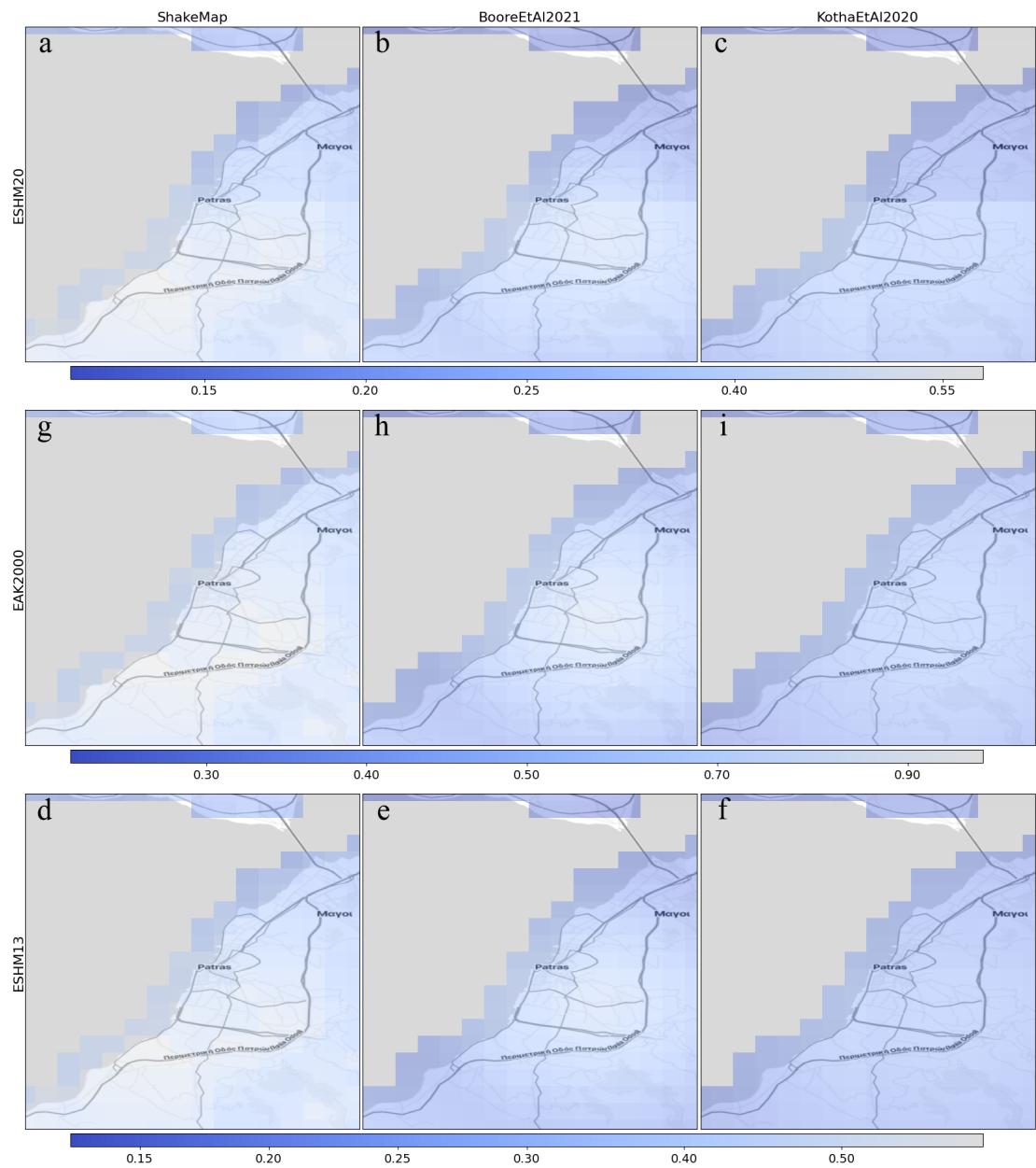
**Figure S-2.** Hazard Ratio for Thessaloniki of (a,d) the 1973-2023 ShakeMap footprints PGA, (b,e) Boore et al. (2021), and (c,f) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) ESHM13, (d,e,f) GSHAP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



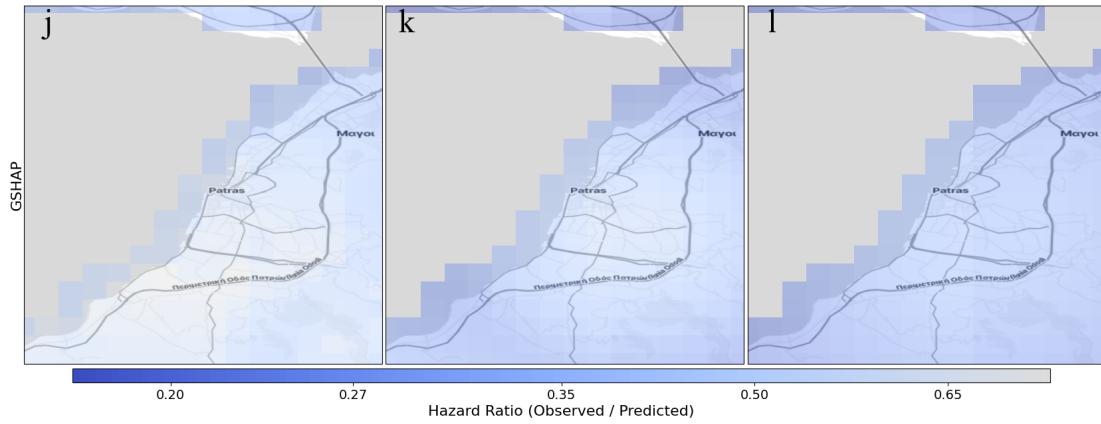
**Figure S-3.** Hazard Ratio for Lefkada of (a,d) the 1973-2023 ShakeMap footprints PGA, (b,e) Boore et al. (2021), and (c,f) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the island, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) ESHM13, (d,e,f) GSHAP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



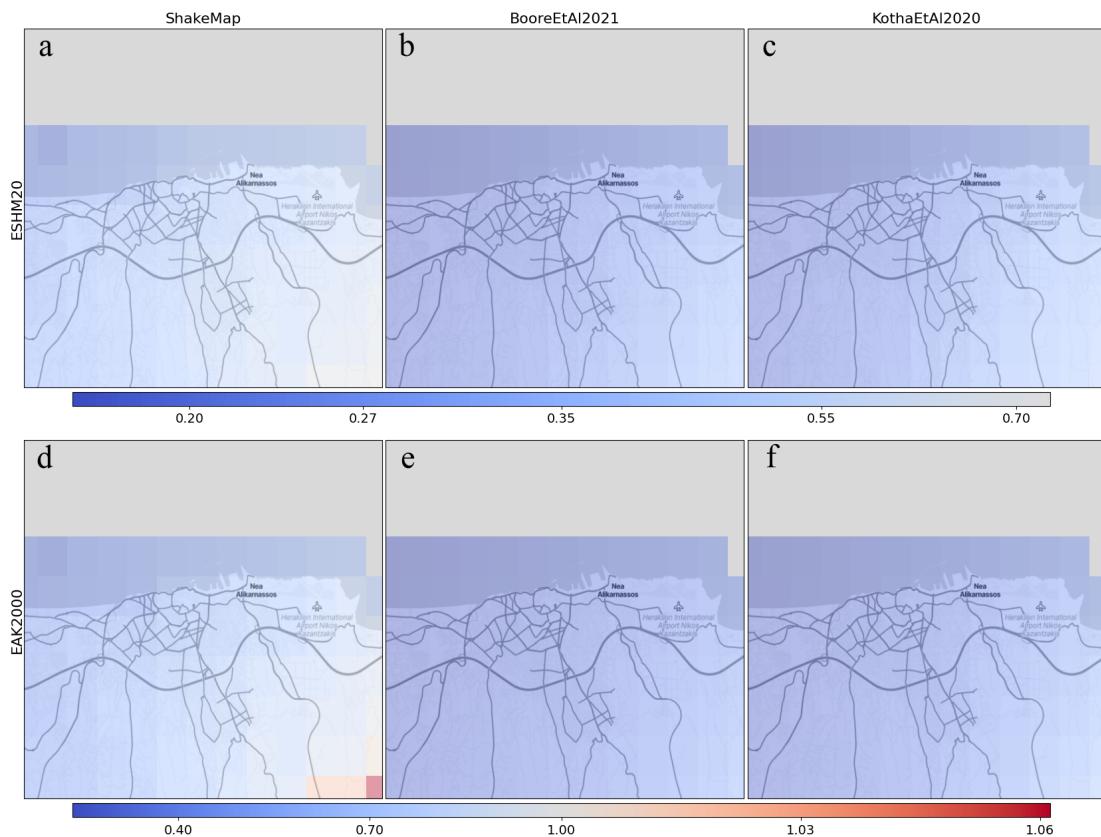
**Figure S-4.** Hazard Ratio for Kefalonia of (a,d) the 1973-2023 ShakeMap footprints PGA, (b,e) Boore et al. (2021), and (c,f) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the island, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) ESHM13, (d,e,f) GSHAP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



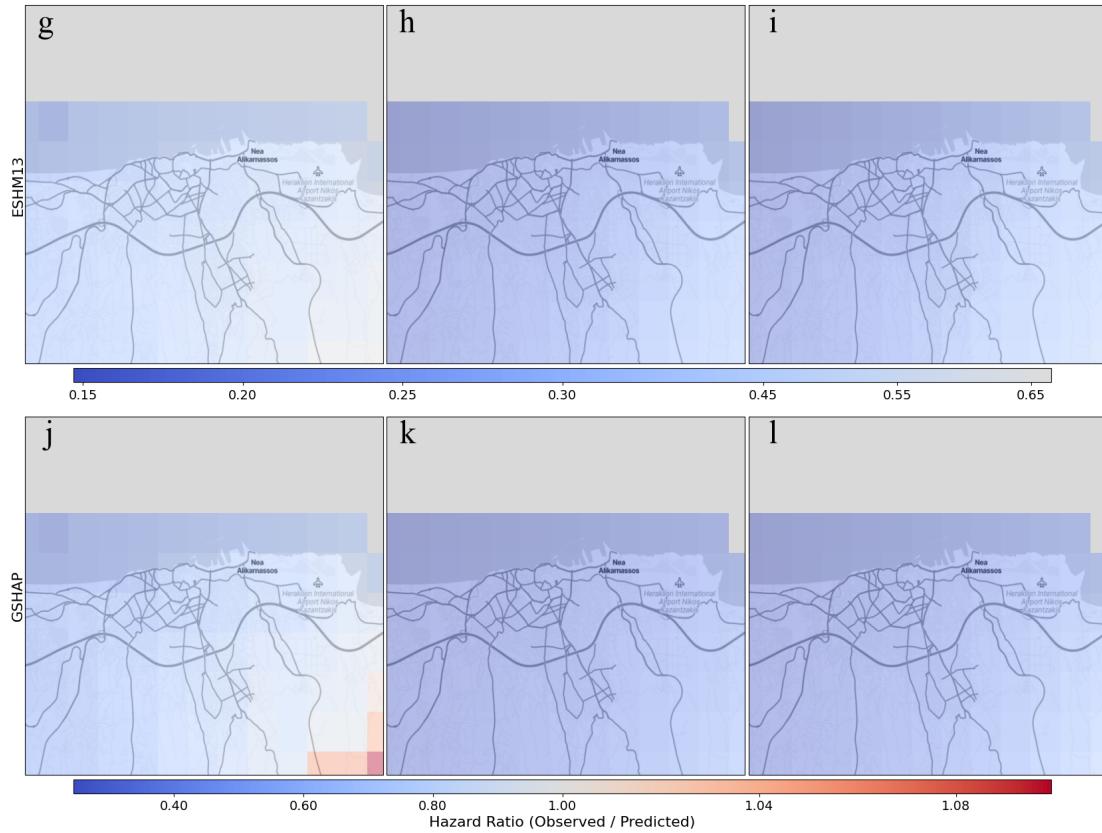
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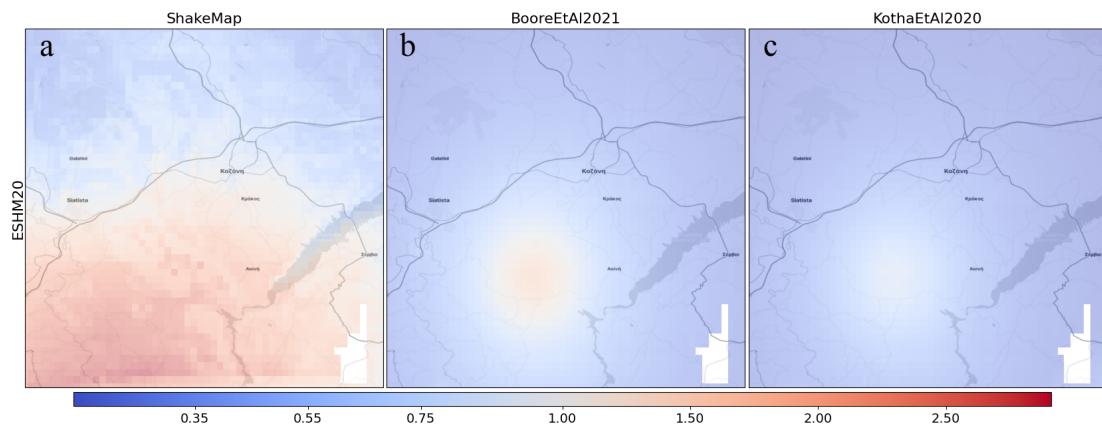
**Figure S-5.** Hazard Ratio for Patras of (a,d,g,j) the 1973-2023 ShakeMap footprints PGA, (b,e,h,k) Boore et al. (2021), and (c,f,i,l) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) the ESHM20, (d,e,f) EAK2000, (g,h,i) ESHM13, and (j,k,l) GSHAP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



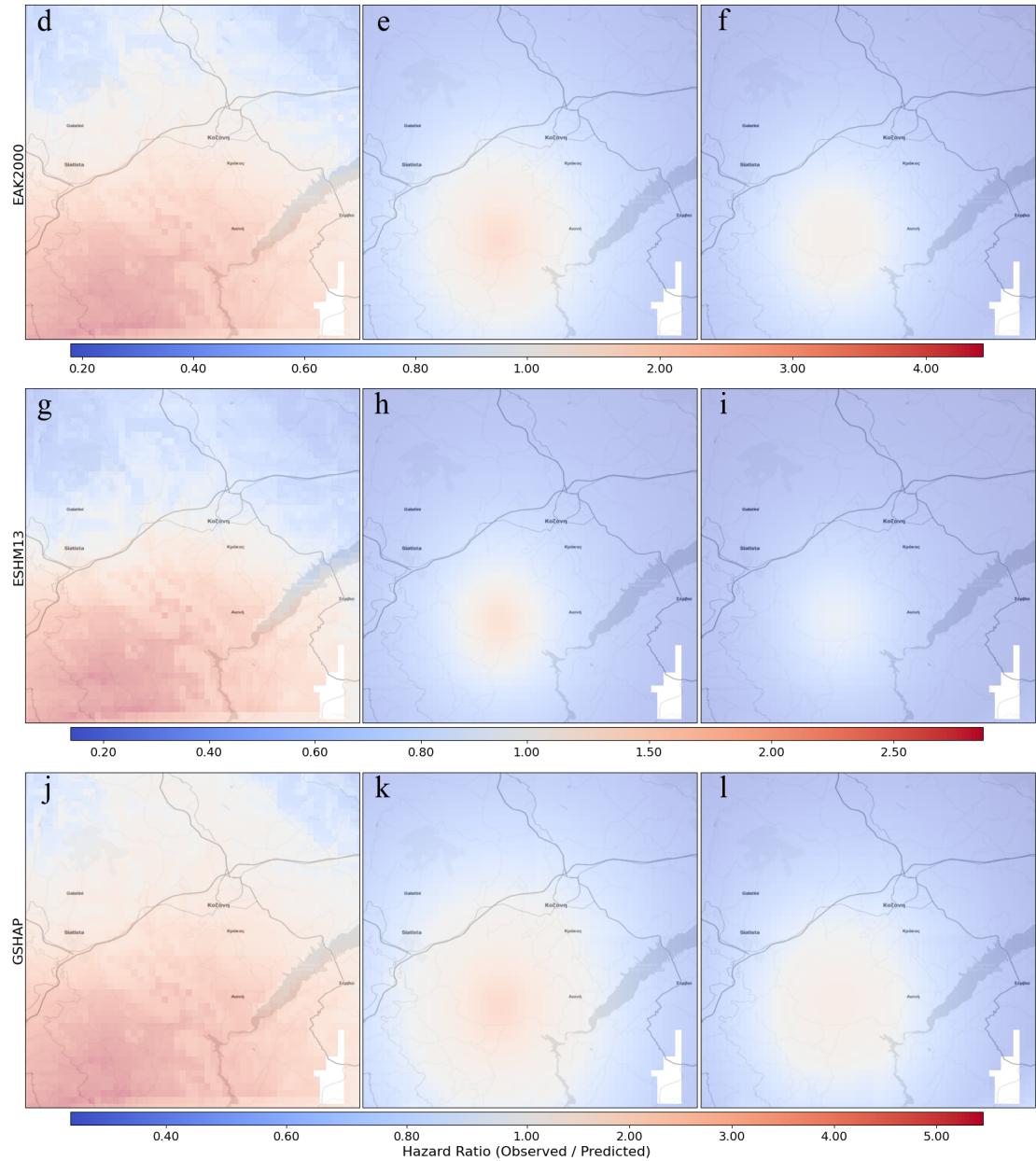
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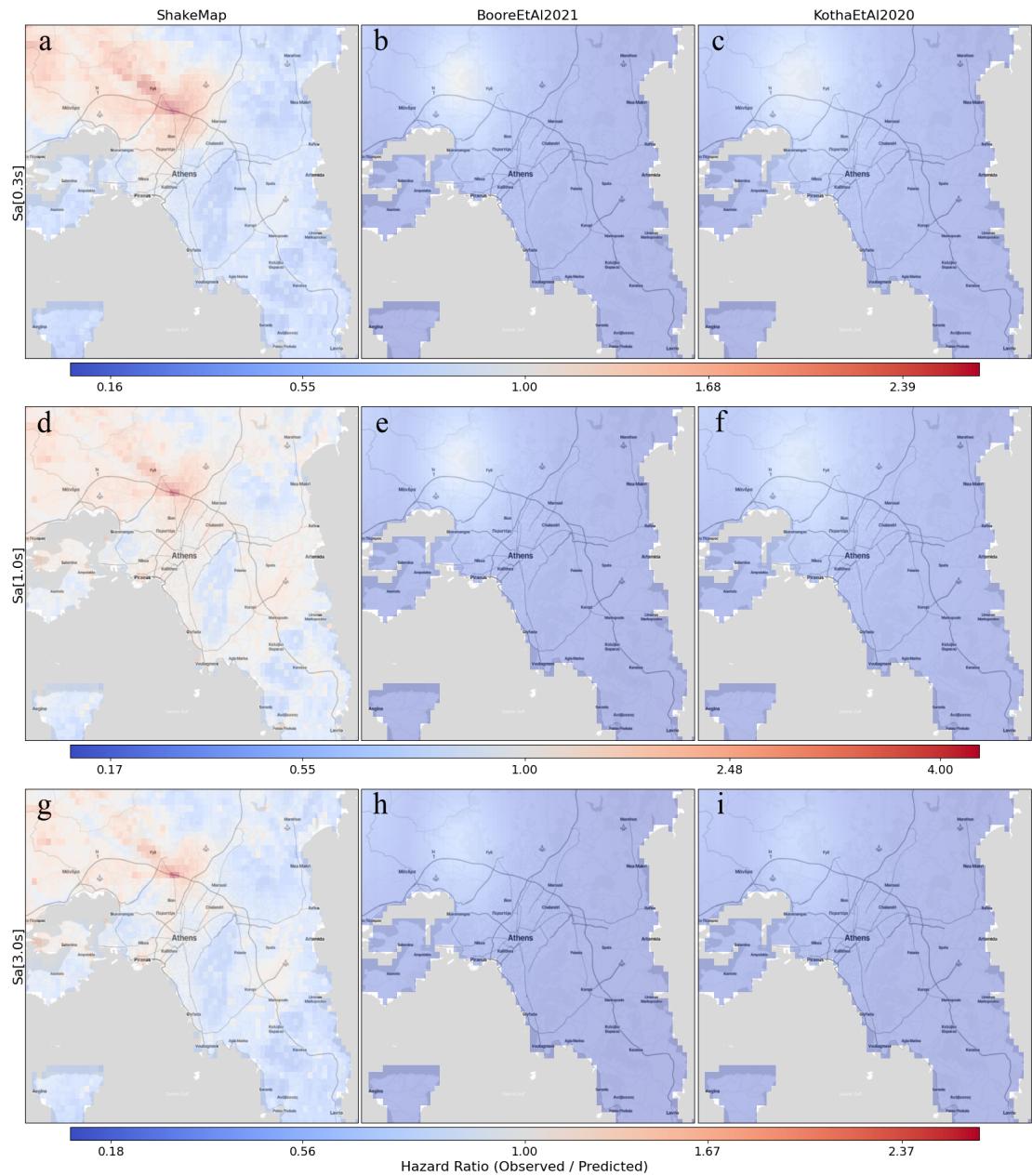
**Figure S-6.** Hazard Ratio for Heraklion of (a,d,g,j) the 1973-2023 ShakeMap footprints PGA, (b,e,h,k) Boore et al. (2021), and (c,f,i,l) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) the ESHM20, (d,e,f) EAK2000, (g,h,i) ESHM13, and (j,k,l) GSHAP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



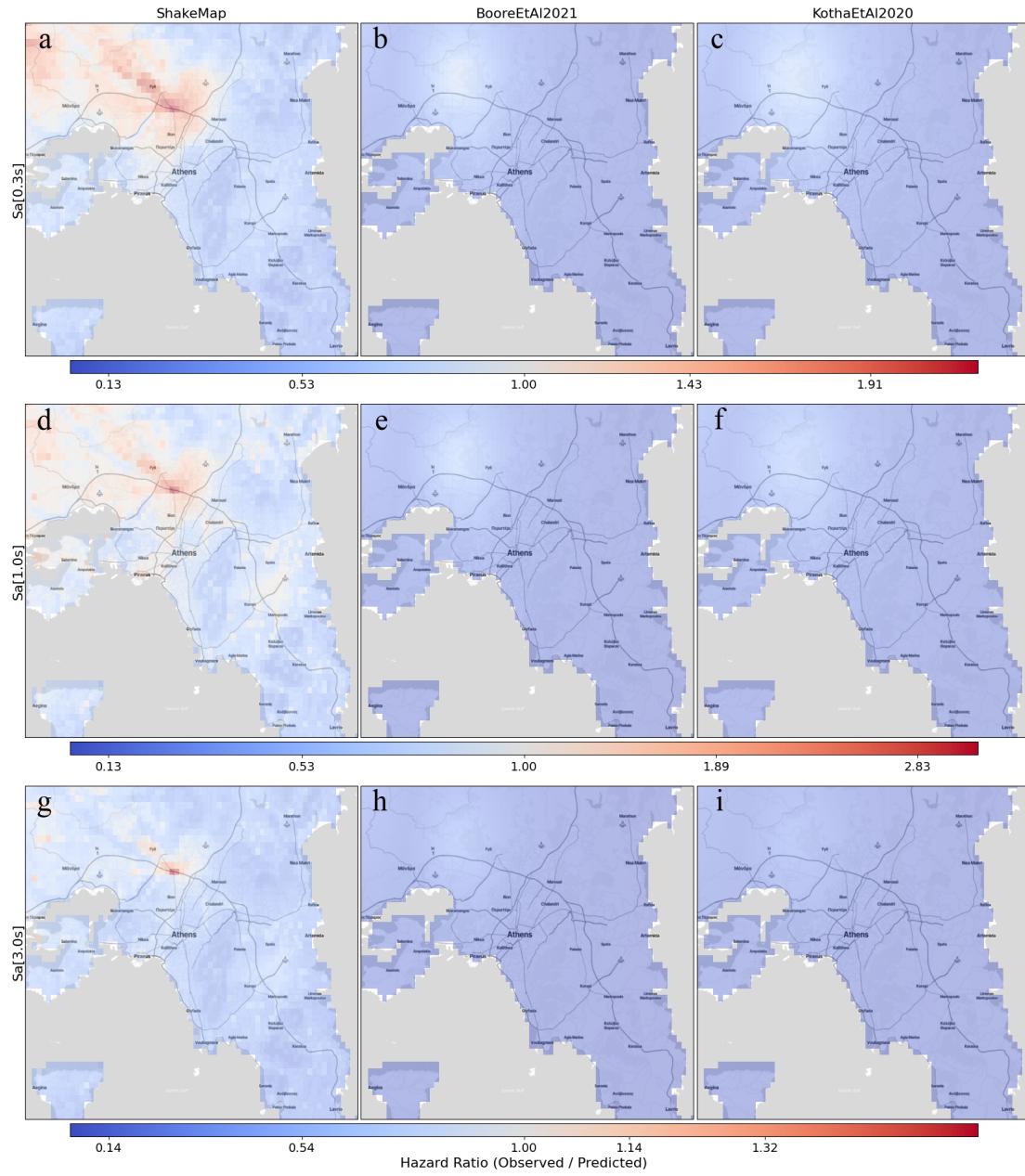
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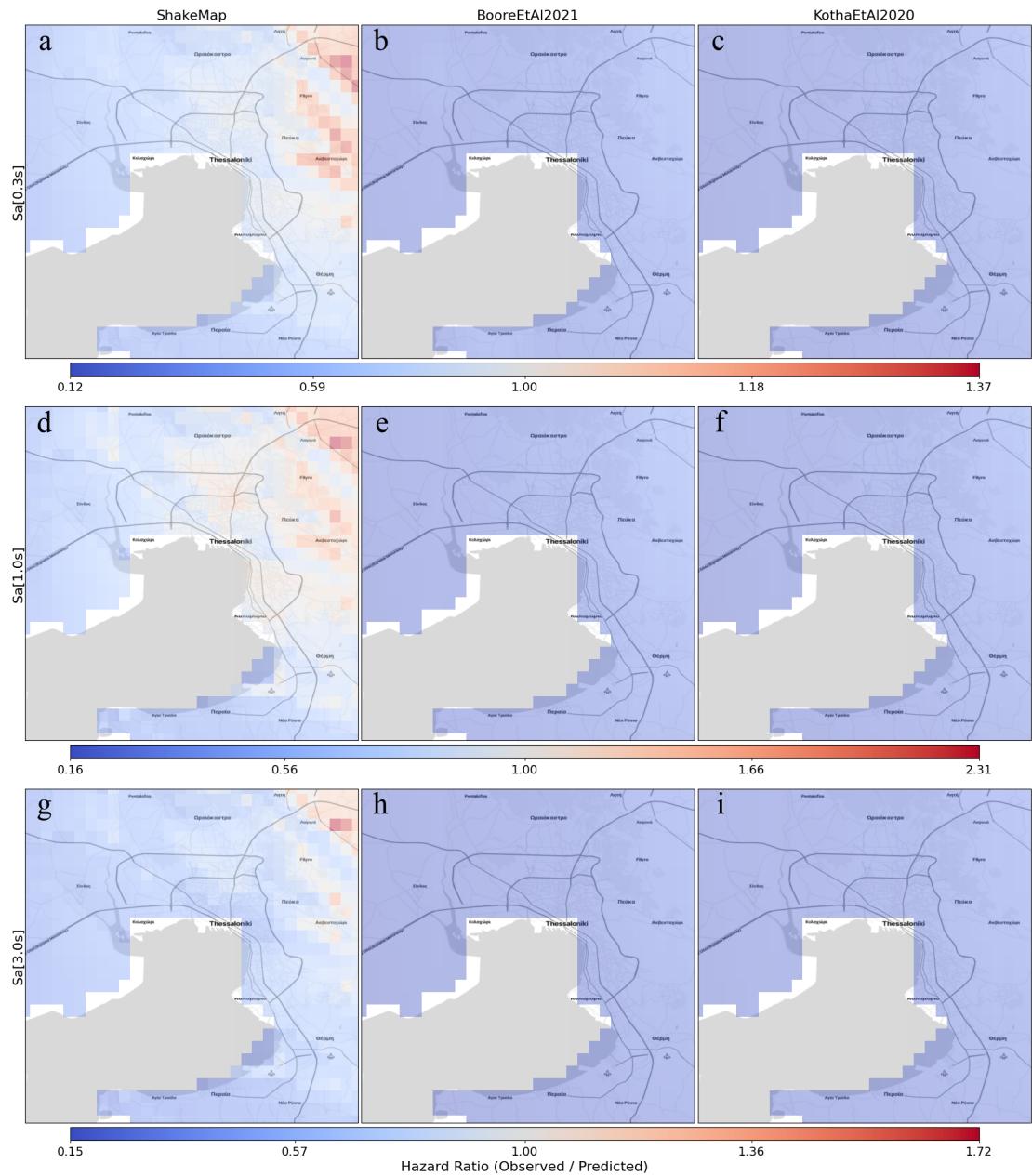
**Figure S-7.** Hazard Ratio for Kozani of (a,d,g,j) the 1973-2023 ShakeMap footprints PGA, (b,e,h,k) Boore et al. (2021), and (c,f,i,l) Kotha et al. (2020) estimated PGA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated PGA for 10% probability of exceedance in 50 years. Ratio maps are plotted for (a,b,c) the ESHM20, (d,e,f) EAK2000, (g,h,i) ESHM13, and (j,k,l) GSHP. Values greater than 1.00 show where the PGA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



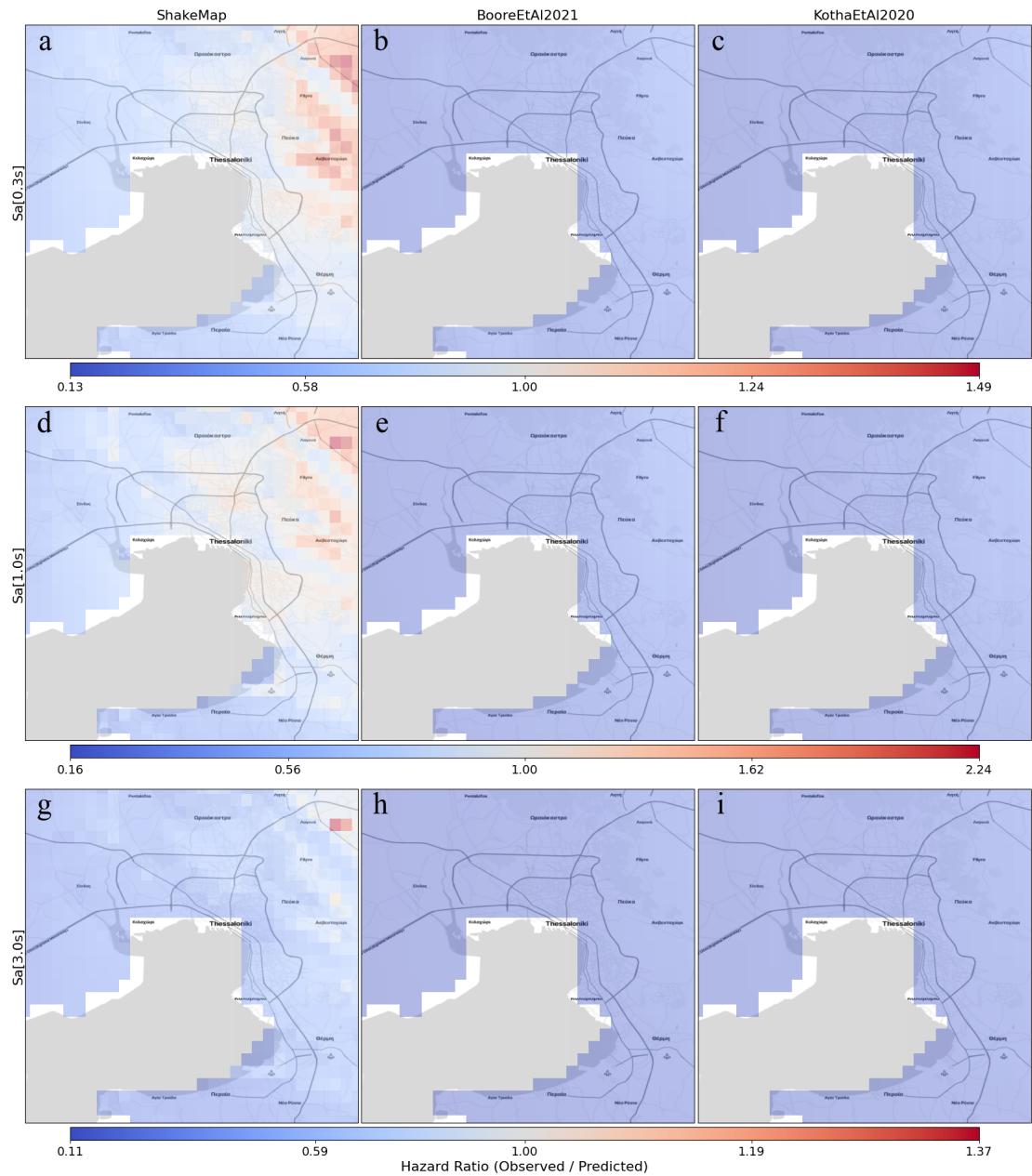
**Figure S-8.** Hazard Ratio for Athens of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for Sa(0.3s), (d,e,f) for Sa(1.0s), and (g,h,i) for Sa(3.0s). Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



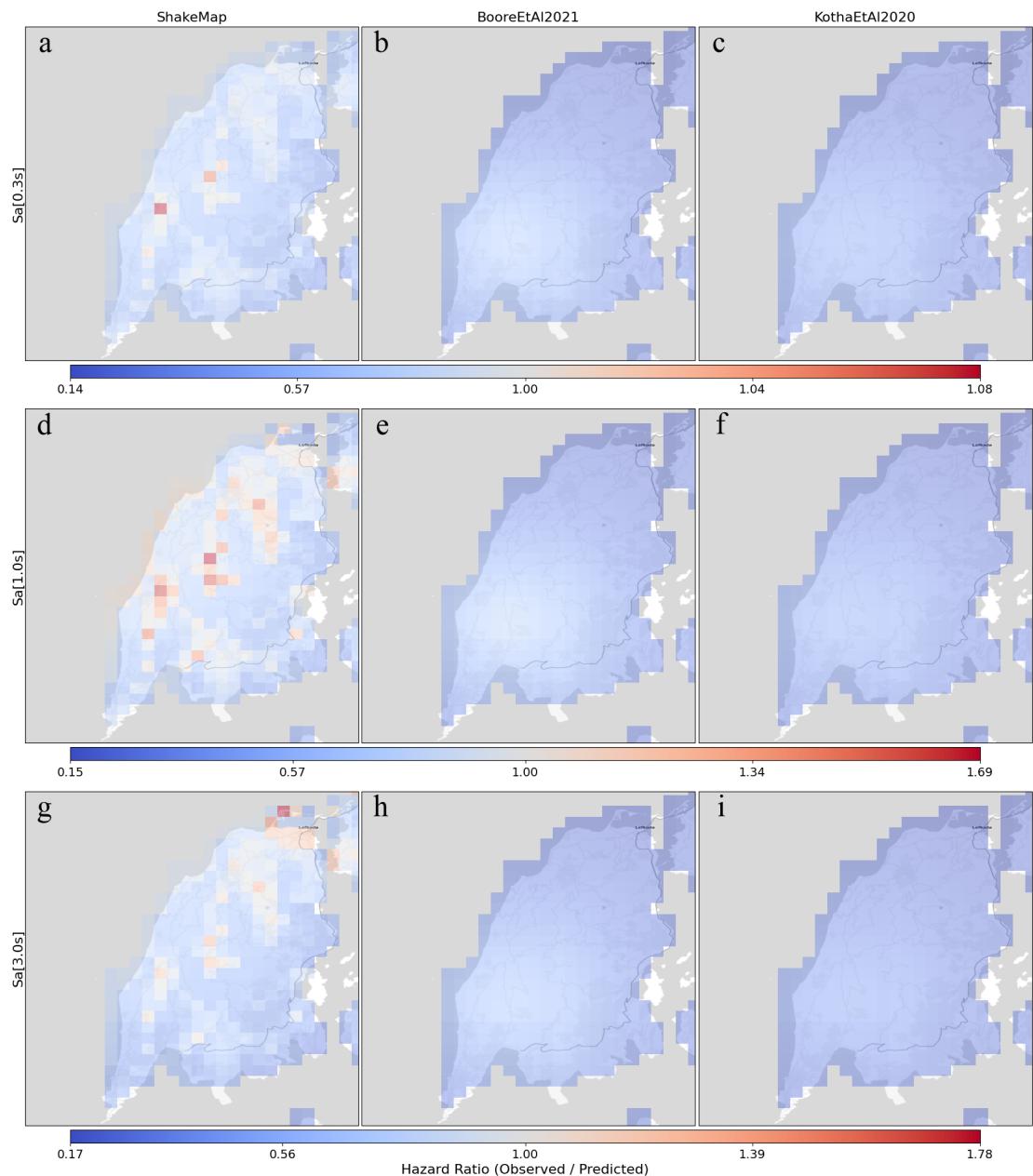
**Figure S-9.** Hazard Ratio for Athens of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



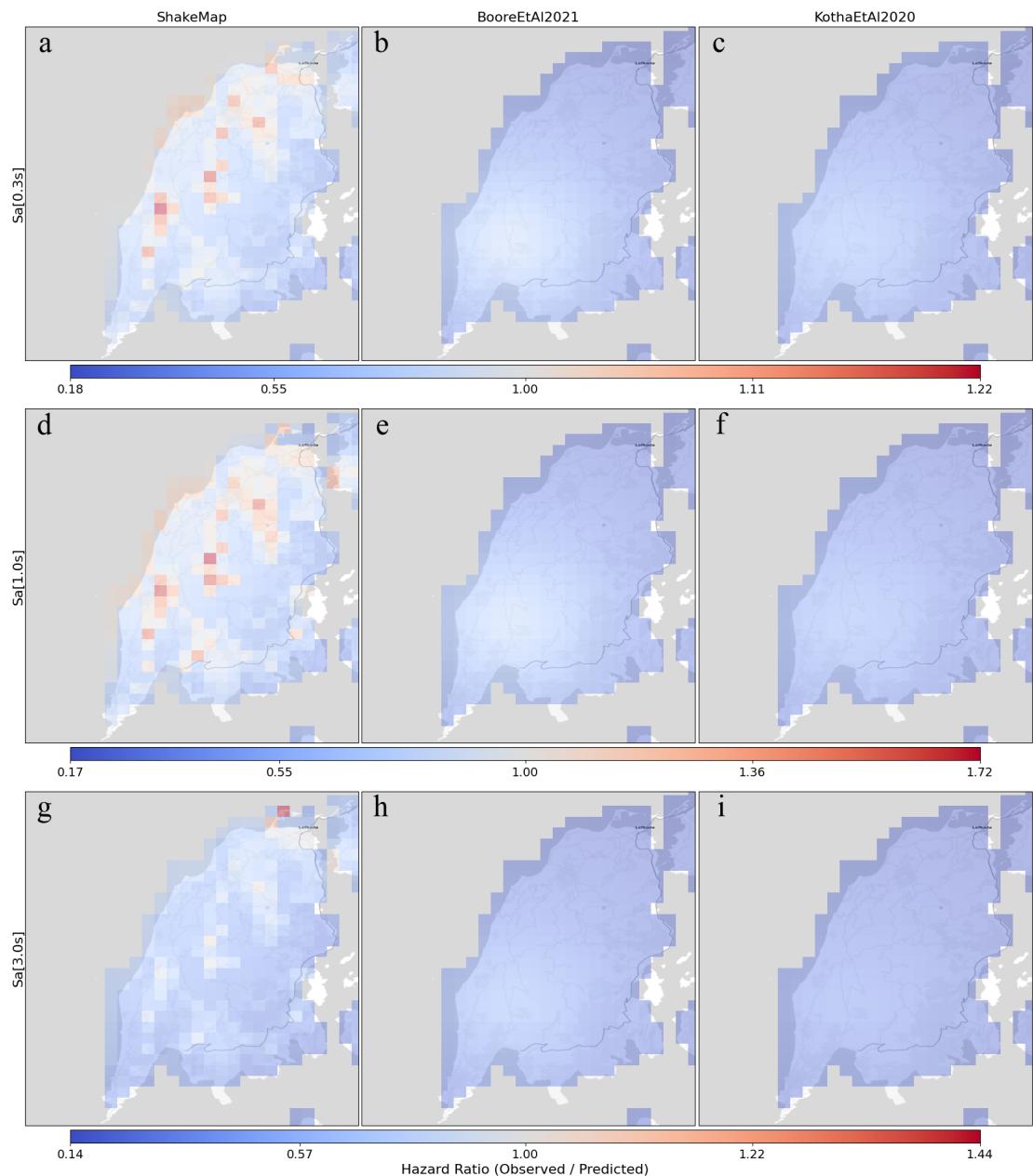
**Figure S-10.** Hazard Ratio for Thessaloniki of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



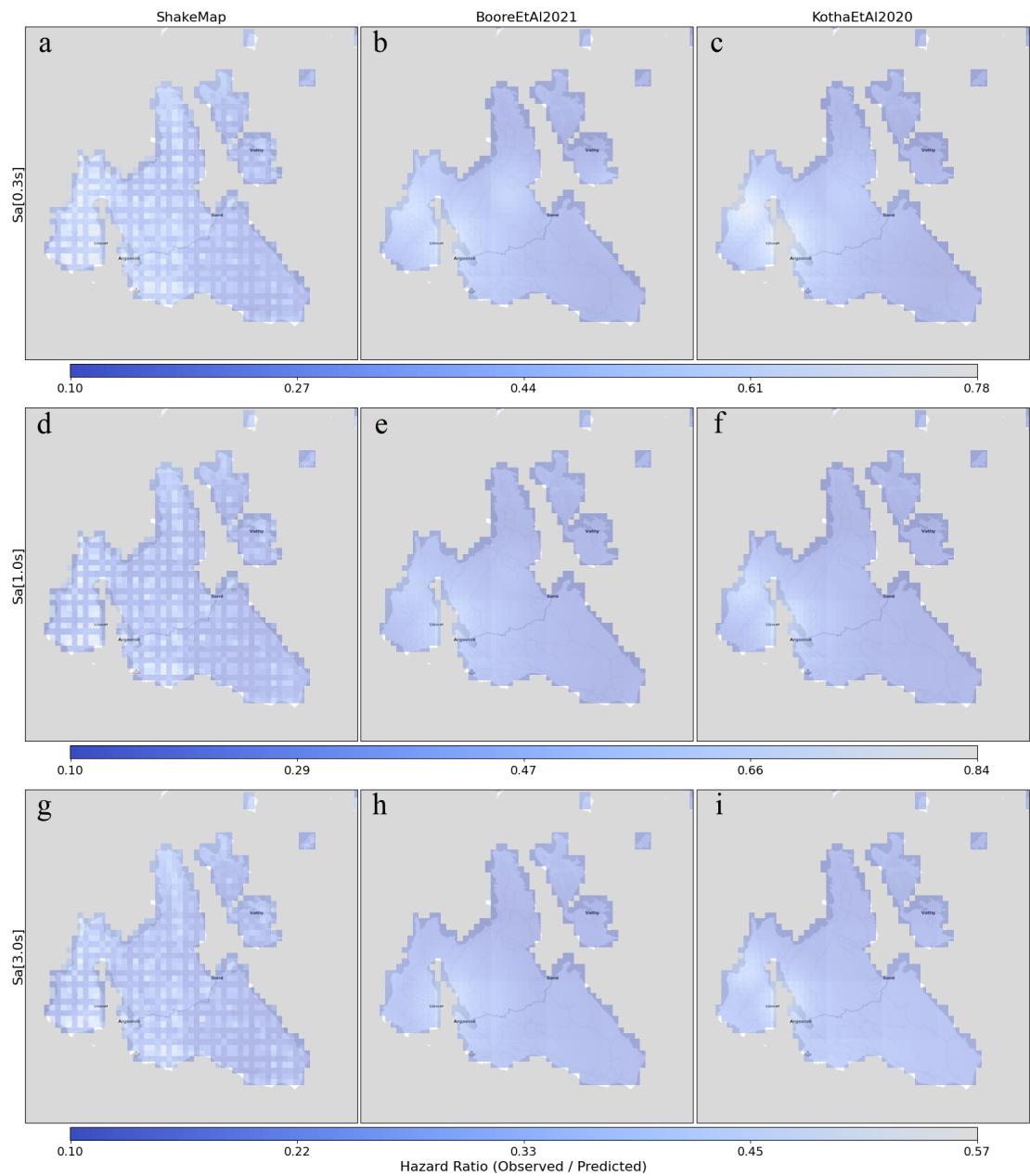
**Figure S-11.** Hazard Ratio for Thessaloniki of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



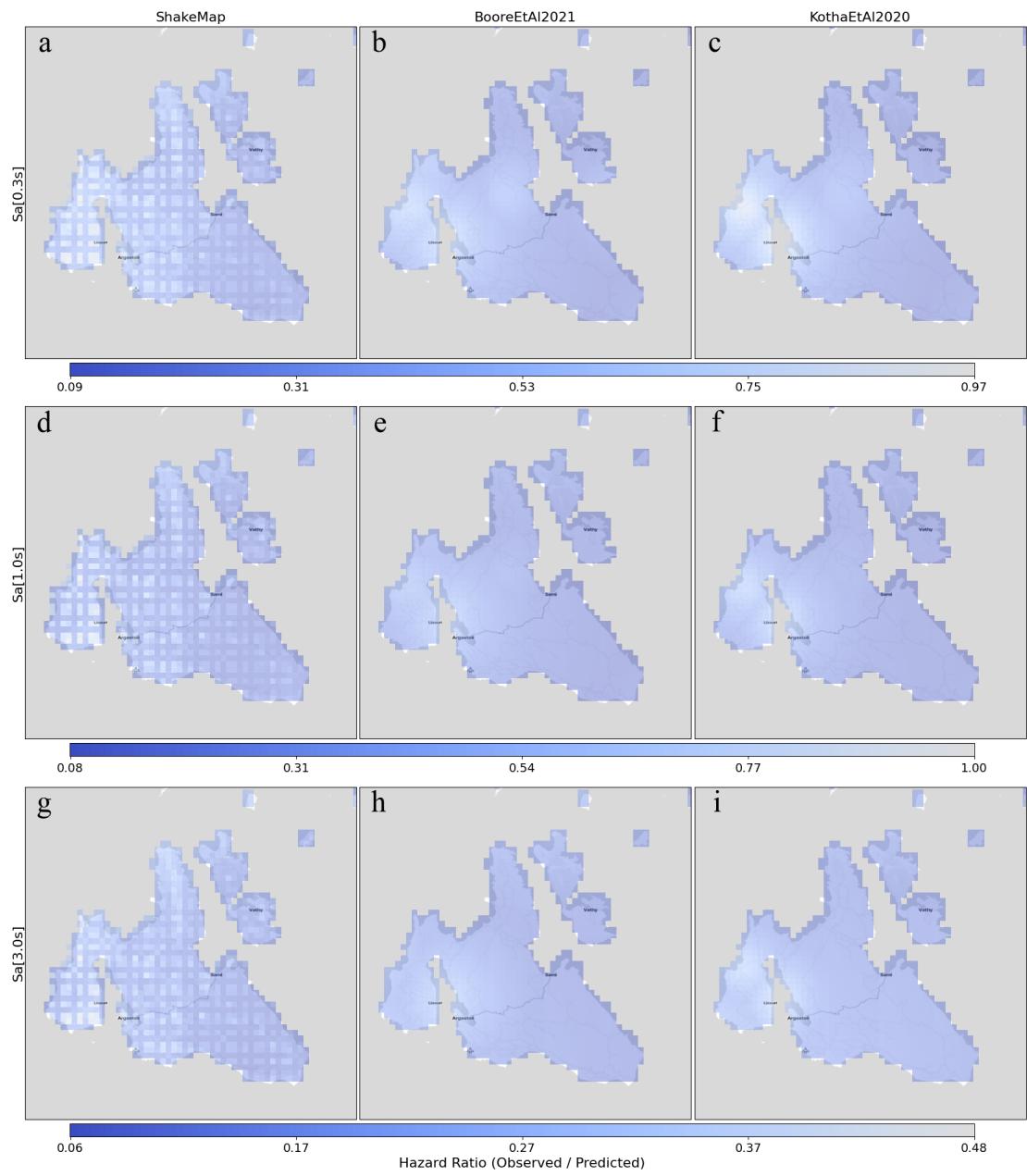
**Figure S-12.** Hazard Ratio for Lefkada of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the island, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for Sa(0.3s), (d,e,f) for Sa(1.0s), and (g,h,i) for Sa(3.0s). Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



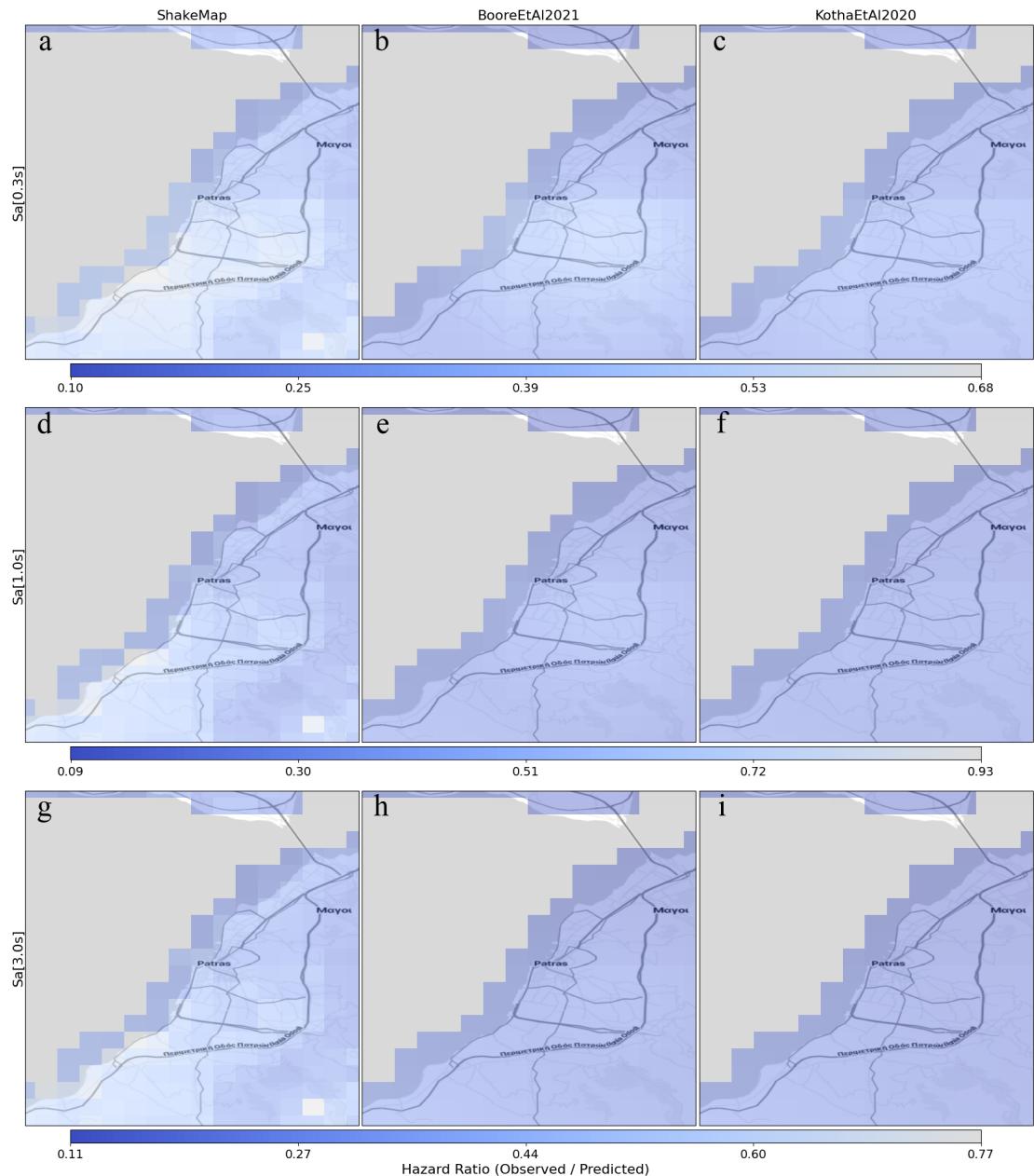
**Figure S-13.** Hazard Ratio for Lefkada of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the island, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



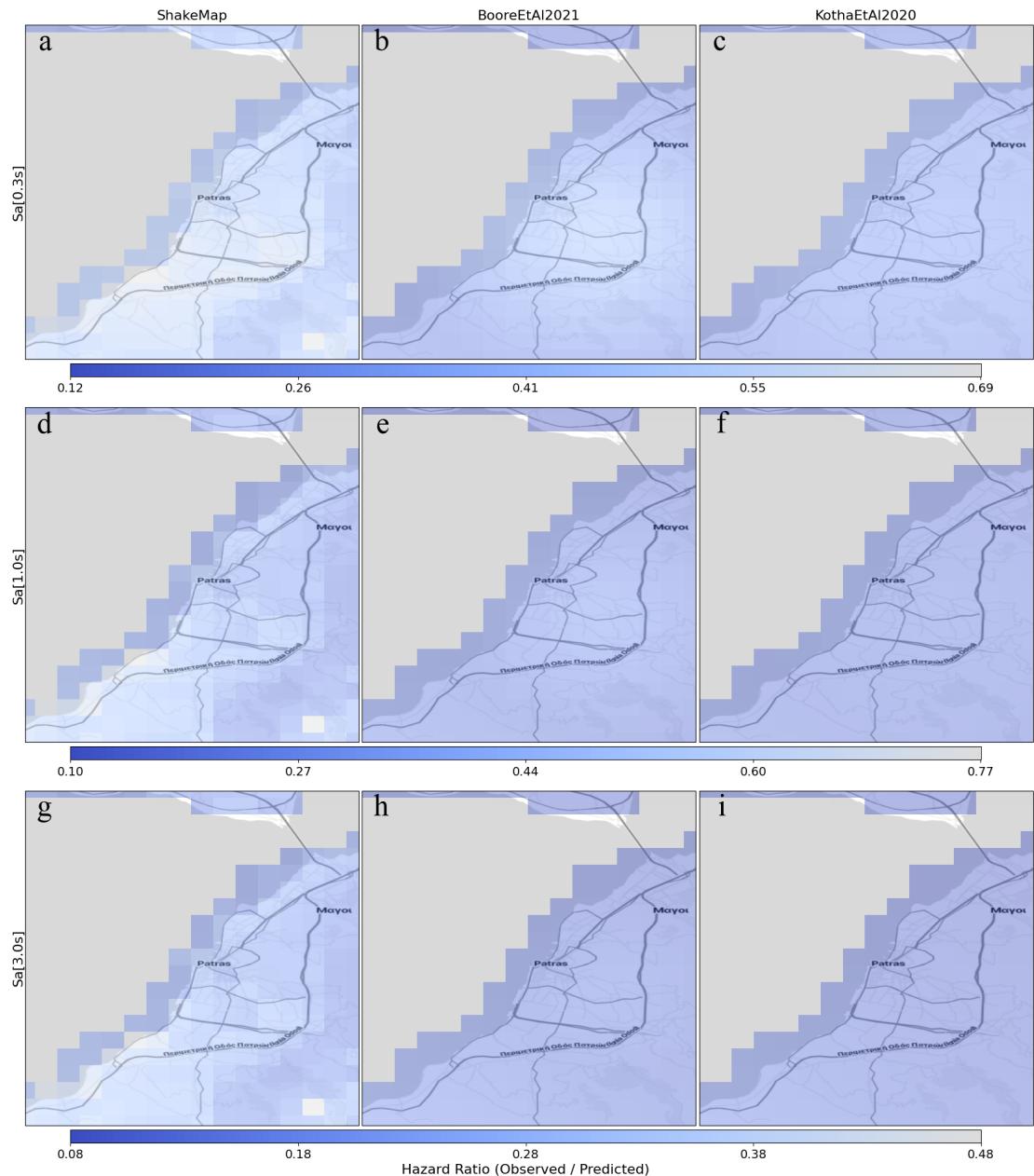
**Figure S-14.** Hazard Ratio for Kefalonia of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the island, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for Sa(0.3s), (d,e,f) for Sa(1.0s), and (g,h,i) for Sa(3.0s). Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



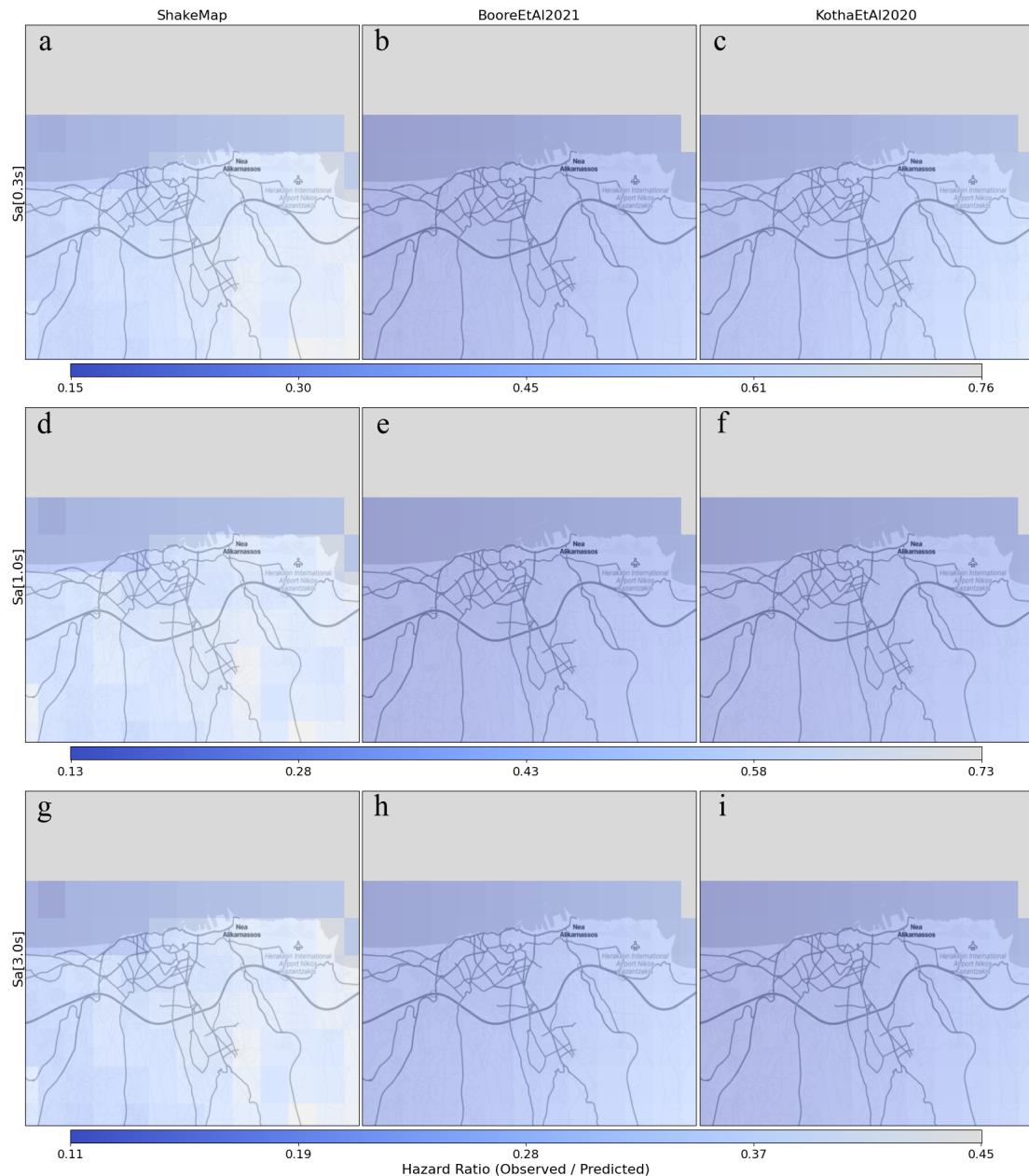
**Figure S-15.** Hazard Ratio for Kefalonia of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the island, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



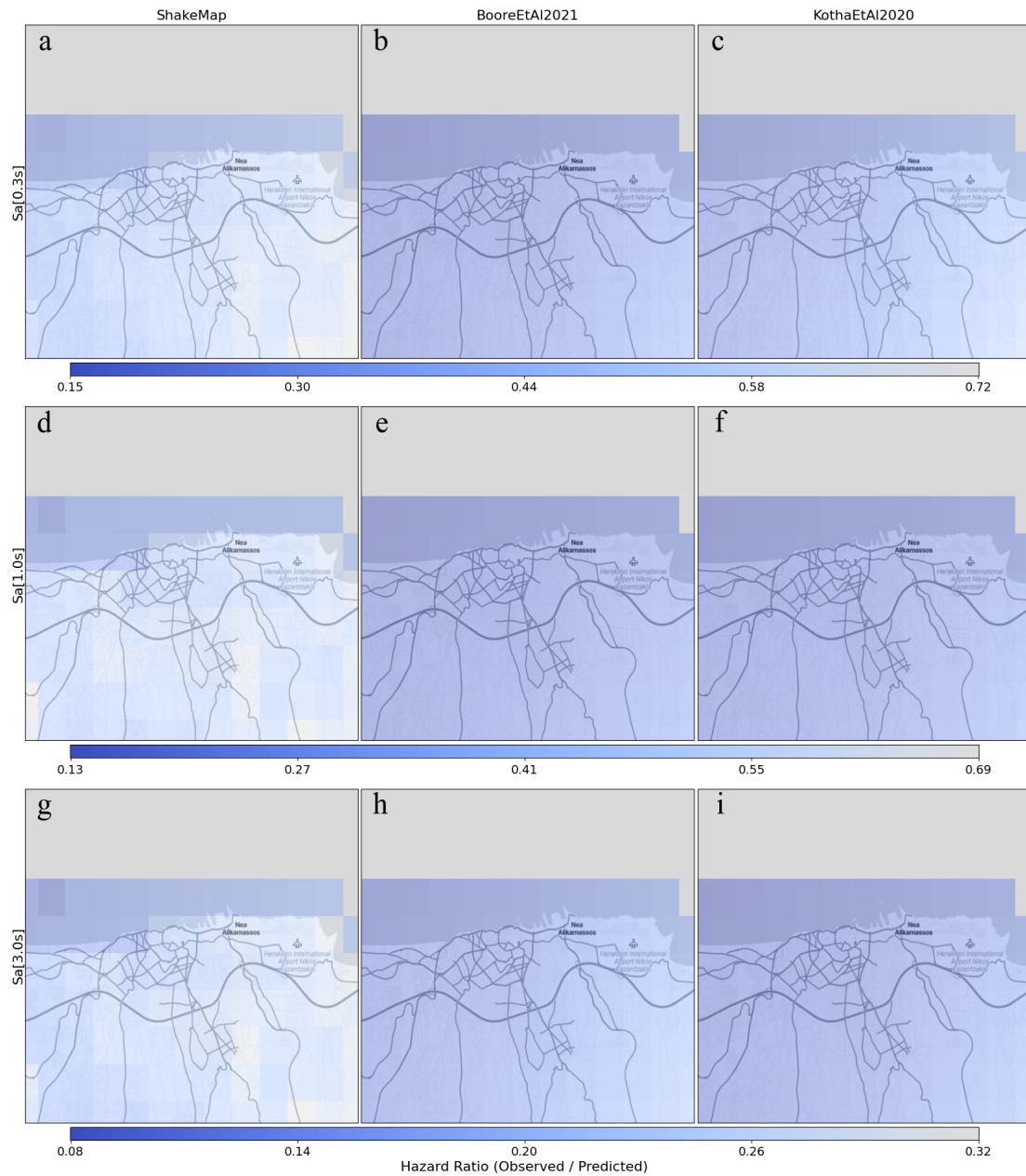
**Figure S-16.** Hazard Ratio for Patras of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



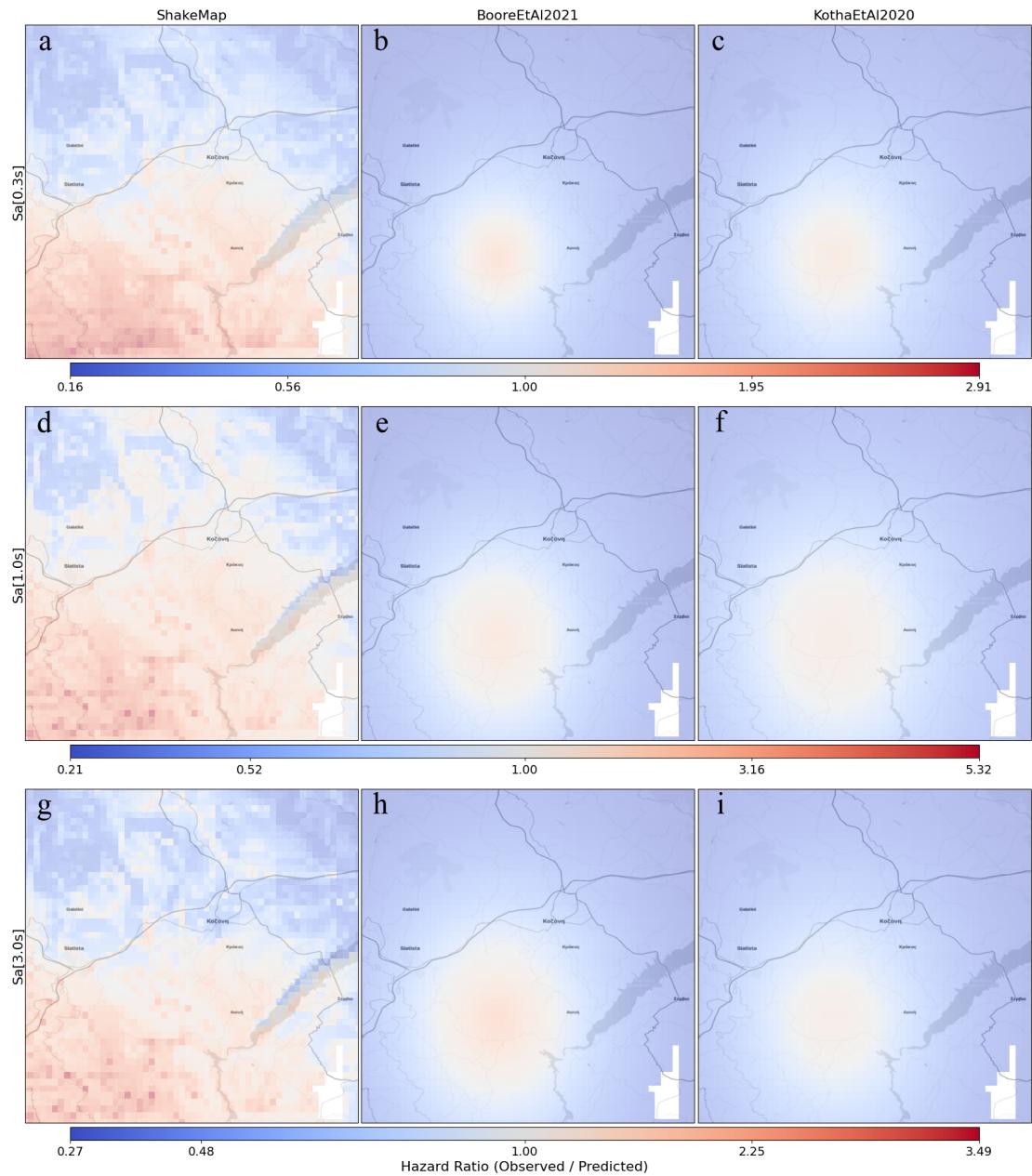
**Figure S-17.** Hazard Ratio for Patras of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



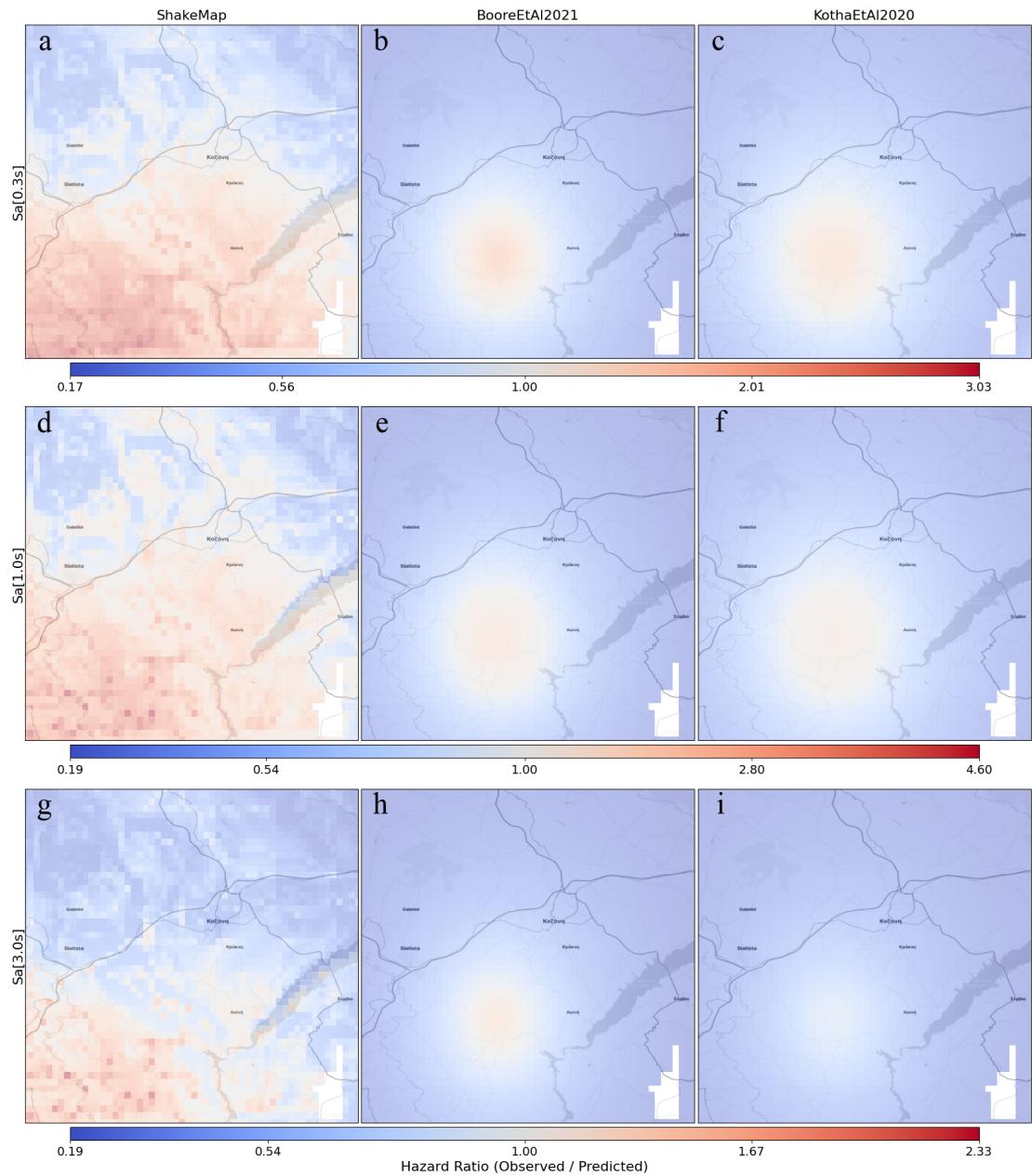
**Figure S-18.** Hazard Ratio for Heraklion of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



**Figure S-19.** Hazard Ratio for Heraklion of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



**Figure S-20.** Hazard Ratio for Kozani of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM20 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.



**Figure S-21.** Hazard Ratio for Kozani of (a,d,g) the 1973-2023 ShakeMap footprints SA , (b,e,h) Boore et al. (2021), and (c,f,i) Kotha et al. (2020) estimated SA from 1973-2023 ANSS catalog (USGS) earthquakes for 100km radius from the city, to the estimated SA for 10% probability of exceedance in 50 years. Ratio maps are plotted for the ESHM13 map. (a,b,c) show the results for  $Sa(0.3s)$ , (d,e,f) for  $Sa(1.0s)$ , and (g,h,i) for  $Sa(3.0s)$ . Values greater than 1.00 show where the SA from ShakeMap footprints or GMPEs exceeds the correspond estimated from the PSHA maps.