

# Are the September 2023 floods in Thessaly the Greek equivalent of Katrina? A preliminary, comparative analysis.

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**Abstract.** This paper identifies and discusses a list of early drawn similarities between two otherwise different disasters, namely the flooding of the valley of Thessaly, in Greece, following Mediterranean storm Daniel in September 2023 and the landfall of Hurricane Katrina in New Orleans in August 2005. I argue that while the two hazards are not comparable, the reasons why the two locations flooded are. Likewise, similarities can be found in the ways the people affected experienced these two disasters, which were primarily driven by socioeconomic and not natural factors. Setting off from the position that, given the global attention and amount of scholarly work on disaster management that followed Katrina, the wrongdoings of 2005 should have been avoided 18 years later, and further motivated by the long-lasting impact the floods in Thessaly are expected to have both for their survivors as well as the Greek state more broadly as the climate crisis deepens, this comparative analysis is provided so that any future national disaster risk management plan does, at the very least, make use of lessons already learnt from previous disasters.

**Keywords:** floods; Thessaly; New Orleans; Katrina; disaster preparedness; disaster management; internal displacement.

## Introduction

The flooding of the valley of Thessaly in early September 2023<sup>1</sup>, with Greek media broadcasting images of buildings submerged up to their tiles in floodwaters, people finding shelter on rooftops and awaiting to be rescued by boats or helicopters, and stagnant waters covering even the national highway, brought to mind similar images also broadcasted by Greek media 18 years ago, at that time coming from the Katrina hit New Orleans. As more information gradually becomes available about the reasons that led to the flood in Thessaly as well as the (lack of) response to the risk of flooding, the similarities between these two very different disasters increase.

The aftermath of Katrina, with the Hurricane acknowledged as ‘the most destructive natural disaster in American history’ (Committee on Homeland Security and Governmental Affairs, 2006, p. 2), mobilised such an amount of scholarly work and disaster response reforms (such as the Post-Katrina Emergency Reform Act of Oct. 4, 2006 (FEMA, 2021)), that a reasonable expectation would have been that the wrongdoings which led to the deadly flood of New Orleans in 2005 would have turned into lessons learnt for preparedness actions of global importance. As it appears though that this was not the case for Thessaly, this paper attempts a preliminary<sup>2</sup>, comparative analysis of disaster preparedness and early response between 2005 New Orleans and

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1 The Region of Thessaly flooded twice in September 2023, first in the week of 4 September 2023 and then the week of 25 September 2023, both times after being hit by storms and both times with destructive consequences. This paper was written in response to the first flood and before the second occurred, therefore it only covers the events of the week of 4 September 2023 and their aftermath. A complete timeline and assessment of that first flood is provided by the Copernicus Emergency Management Service (2023).

2023 Thessaly, focusing on the wrongdoings that were – much unnecessarily and tragically – repeated 18 years later at the other side of the Atlantic.

### **Hit by different hazards, yet flooding for similar reasons**

While Katrina was a Category 5 Atlantic Hurricane when it made landfall in New Orleans on Monday, 29 August 2005, and the floods in Thessaly were triggered by Mediterranean storm Daniel<sup>3</sup>, and thus the intensity of these two different hazards cannot be compared, the reasons that led to the flooding of both New Orleans and Thessaly can. Three of these reasons, as things stand at the moment of writing, are juxtaposed below, without the following list being exhaustive.

#### **Failing engineered water-control systems and collapsing levees**

Both locations flooded not strictly as a result of a natural hazard, but because the local engineered water-control systems proved detrimental for, or simply incompatible with, the surrounding environment when put under severe force of water (Lemann, 2020; News247gr, 2023). Characteristically, during both disasters levees were reported as collapsing one after the other. However, areas across New Orleans as well as across Thessaly were differently impacted by the broken levees. The French Quarter, the highly prosperous neighbourhood and tourist landmark of New Orleans, saw much less destruction due to, in contrast to the majority of other areas in the city, being located above water level and having been built along a natural levee (Landphair, 2007). This alludes to the socioeconomic connotations of Katrina's impact, with the city's less privileged populations already living in 'flood-prone backswamps' (ibid, p. 839). In the case of Thessaly, it has so far been reported that levees were intentionally broken amidst the water rise from surrounding rivers so that areas at immediate risk would be protected from flooding; it turns out that this may have happened at the expense of other areas (News247gr, 2023). It also appears, with greater clarity and more data available, that levees were not maintained and assessed for their effectiveness as they should have, with the required, EU-standardised revisions of national river basin management plans as well as flood risk management plans pending in Greece since 2019 (European Commission, 2023; Rigopoulos, 2023).

#### **Disregarding weather history and prediction models**

Floods are no stranger to the valley of Thessaly, with several of its areas having been destructively flooded before, for example in the passing of the medicane Ianos in 2020 (Kotsira, 2021), or in a deluge that had hit the valley in 1994 (Zafeiropoulos, 2023). Both central and local government had at their disposal meteorological predictive models about the expected magnitude of storm Daniel in the region on Thessaly, but neither this information nor the region's proneness to flooding were acted upon, and no preparedness was planned (To Vima – Podcasts, 2023). Ironically, such were also some of the key factors that had led to Katrina's disastrous impact, as it was concluded by the Committee on Homeland Security and Governmental Affairs (2006, p. 585) in their special report:

*Four overarching factors contributed to the failures of Hurricane Katrina:*

*(i) long-term warnings went unheeded and government officials neglected their duties to prepare for a forewarned catastrophe;*

*(ii) government officials took insufficient actions or made poor decisions in the days immediately before and after landfall;*

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2 While there is a breadth of resources in the bibliography analysing Katrina as a natural as well as socioeconomic disaster, given the proximity of the floods in Thessaly, the majority of information available at the moment for the Greek case come from the media or are findings of investigative journalism.

3 Note that Daniel eventually developed into a 'medicane', but that was only before making landfall in Libya (Earth Observatory – NASA, 2023), thus after passing over Greece.

(iii) systems on which officials relied to support their response efforts failed, and

(iv) government officials at all levels failed to provide effective leadership.

### **Creating, or deepening, vulnerability with unequal evacuations**

The lack of preparedness for storm Daniel mentioned above was exacerbated by delayed or even faulty evacuation alerts sent to residents of the valley surrounding the city of Karditsa, in Thessaly, towns and villages of which flash flooded in the early morning hours of 7 September 2023 (To Vima – Podcasts, 2023). It is telling that while some of those locations had their buildings sunk in floodwaters within 30 minutes, evacuation alerts were sent three hours later (News247gr, 2023). Additionally, while the population requested to evacuate in the valley around Karditsa mainly consisted of elderly people with no means of escape, there was no provision for public means of transport that could facilitate the evacuation (To Vima – Podcasts, 2023). This further intensifies the socioeconomic aspect of the disaster, just like it had happened during Katrina.

The special report on Hurricane Katrina had concluded that while the City of New Orleans was responsible for its citizens evacuating and furthermore ‘had language in its plan stating the city’s intent to assist those who needed transportation for pre-storm evacuation’, nonetheless ‘had no actual plan provisions to implement that intent’ (Committee on Homeland Security and Governmental Affairs, 2006, p. 585). Katrina made landfall with an estimated number of the city’s residents between 100,000 (ibid, p. 588) and 120,000 (Oliver-Smith, 2009, p. 23) not owning a car and not being able to evacuate. Anthropologist Anthony Oliver-Smith (2009, p. 13) discusses the example of residents’ inability to evacuate from New Orleans as one of those aspects that can place people in a vulnerable position and thus ‘exacerbate the impact of a hazard’. Vulnerability can be traced in ‘how social systems generate the conditions that place different kinds of people, often differentiated along axes of class, race, ethnicity, gender, or age, at different levels of risk from the same hazard and suffering from the same event’ (ibid, p. 14). Vulnerability can thus lie in a multitude of aspects concerning one’s life, including living in flood-prone areas as mentioned earlier, but evacuations during a disaster stand out as perhaps the most evident placement of people in immediate need within a vulnerable context – and constitute a recurring deficiency, or simple neglect, in disaster management.

### **Divine excuses for human-driven disasters**

Shifting from disaster preparedness to early response, it is currently a surprise seeing the term ‘act of god’ (in Greek *theominia*) making its way back to Greek public discourse and being repeatedly used to describe the September 2023 floods in Thessaly. While the term used to be undoubtedly popular in the Greek society, in the recent years its use had decreased as the discourse about climate change and the climate crisis had facilitated its replacement with scientific or technical terms.

It should be noted that the use of term ‘act of god’ should not be seen as implying religiosity. When I was conducting research on the deluge that in September 2017 hit and destructively flooded Samothraki, a small and remote island in NE Greece, the term ‘act of god’ was the one used the most by the people who had endured the disaster, but research findings suggested that the term was mobilised to emphasise the danger and long-lasting impact of their experience (Kotsira, 2020). Other research also infers similar findings, suggesting that where people attribute the causes of a disaster to a supposed deity, the motive behind this choice is usually for those affected to regain a sense of control and minimise their anxiety in the midst of an uncertain situation by attributing purpose and meaning to the events that have occurred (Stephens *et al.*, 2012).

Returning to the use of ‘act of god’ to describe extreme weather phenomena in a time of human-induced climate change can be problematic though because the term is essentially an attempt to revoke human liability. The following two examples from the field of Law are particularly interesting given the current degree of post-flood pollution across Thessaly and while waters in many areas remain stagnant. According to Casey Kaplan (2007) describing Hurricane Katrina as an ‘act of god’ could serve for granting lack of liability for the environmental pollution caused due to oil spills from refineries or tank farms while the Hurricane lasted. The term is improper for the discussion of liability because ‘[w]hen God came to Noah and told him a great flood

would come and cover the earth, Noah had forewarning. The storm was anticipated' (ibid, p. 181). Anticipated was also Hurricane Katrina and its potential damage given the weather forecasts and the existing vulnerabilities of the Gulf Coast (ibid, p. 156). Therefore Kaplan (ibid, p. 181) concludes that 'if Noah had been an oil producer, he would have been expected to prepare for the impending doom, so as not to damage the environment'. Along the same lines, Myanna Dellinger (2016, p. 1617) suggests that in the face of anthropogenic climate change attributing severe weather events to "superior forces" or "God" to which we now know that we – mankind – have contributed to a very large extent' is close to irrational, not to mention costly. For parties to no longer be able to avoid liability at court on the grounds of – again – an 'act of god', she suggests that potential climate risks and a series of measures responding to them should constitute mandatory clauses in contracts.

### **Conclusion: the necessity of forward planning**

The reasons why such obvious and widely reported wrongdoings in managing Hurricane Katrina had to be repeated 18 years later in Thessaly require meticulous research and detailed scrutiny to be identified and analysed – this goes beyond the present time and the objectives of this paper. There is no doubt that the first priority should be that a recovery plan is devised and implemented in the valley, which of course will not be short of challenges or facing further repercussions of unpreparedness; people's physical and mental health, financial insecurity and property loss, business continuity for administrative and professional services, especially where non-digitised archives have been destroyed or equipment lost, and the colossal work of restoring public infrastructure and road networks, to mention only a few.

Yet, the impact of the floods in Thessaly has already shown its teeth, with people reportedly already abandoning their places of residence and seeking to permanently relocate. Of course, there have been in the past internal displacements in the country; for example, 67,000 internal displacements had been recorded during 2021 as a result of the wildfires and subsequent flash floods on the island of Evia as well as the high magnitude earthquakes in Larissa, Thessaly, and the island of Crete, but these appeared to be temporary, with the total number of internally displaced people (IDPs) at the end of the year dropping to 1,600 (IDMC, 2022). However, considering the extent of the disaster on the occasion discussed in this paper and the numbers of the population it affected – the total population of the Region of Thessaly according to the 2021 census is 688,255 people – it is very likely that the country will see its first internal climate migration. A well-informed and easily applicable national disaster risk management plan is then a vital necessity for Greece, especially as it is solid scientific fact that extreme weather will sooner or later become the norm in the country. With reference to the latter, it suffices to note that the Mediterranean Basin is recognised as 'an example of a region with high vulnerability' (IPCC, 2018, p. 200) to climate change and its associated hazards, with drought in particular being seen as an imminent threat due to the increase of the Earth's average temperature between 1.5°C and 2°C in the near future (ibid).

The present comparative analysis is then provided with the hope that any future national disaster risk management plan will, at the very least, make use of lessons already learnt from previous disasters.

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