

## THE 2018 MATI DISASTER

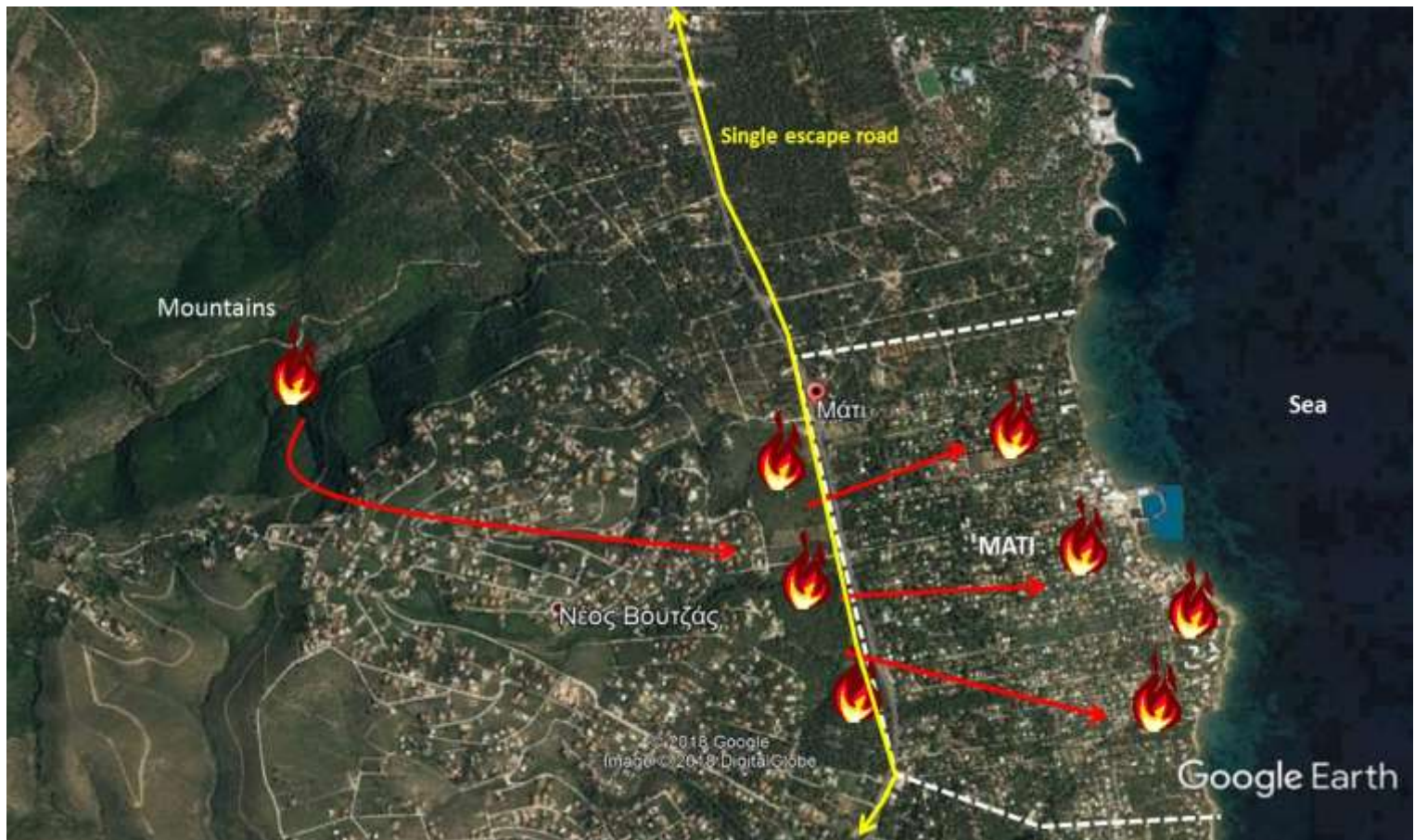
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### The location

Mati is a coastal resort (population 25,000) with a mountain in the back and sea in the front. In between, a virgin green area mainly with pines, low vegetation located approximately 40km from Athens.

### The July 2018 incident

Mega fire started from the mountains and to wild winds (~120 km/hr. - downslope spread)



attacked the village of Mati via wildland [mostly *Pinus halepensis*] urban interface.

### The structure of the village

The village has very narrow vertical and horizontal streets but only one main road (in yellow at the photo above) leading to nearby villages (almost adjusted to Mati). Most of these roads are bidirectional– one way roads are absent; there are many end roads as well. Access to the many beaches and small ports is not always available for many reasons. It should be noted that sea level is NOT at the same level with land with a height difference of 15-20m (small cliffs). Signs indicating safe passage to the beach were either absent or very limited (now sure if bilingual: Greek/English).

### The people of the village

Many people reside in Mati permanently while other have summer houses and stay there during summer time. In addition there are tourists staying at hotels and rented rooms or apartment. Finally, there are weekend visitors who visit Mati due to its proximity to Athens. The two latter

categories are not expected to be aware of the structure of the village and possible escape routes.

### The [traditional] “firewall”

In previous fires, the Marathon Avenue (the [yellow] escape road in the photo above) acted as a fire barrier and never a fire crossed the avenue. However in reality the road provides only space for defense from fires that have low-medium intensity. Very-high intensity fires can't be extinguished with water. They can be only stopped by cutting trees and disrupting the continuity of the fuel. The water is evaporated in such cases and the fire fighters can't withstand radiant heat. Forest fires are controlled fighting the flanks of the fire. Firefighting is almost forbidden in front of a moving active fire head. Ultimately a working road is a different fuel type (cars burning and carrying the fire) which contributes to fire propagation.

This time, wild Western winds make it very easy to jump over the 4-lanes road and burn the village. This is the first negligence in emergency response planning. Never thought that one day



this might happen the moment that all experts recognize the fact that the fire spray can jump over 100-300m and ignite a new fire. In addition, on both sides of the avenue there were ~20yo pine [*Pinus pinea*] trees (5yo trees were implanted in 2004 for the Olympic Games for which the avenue was constructed).

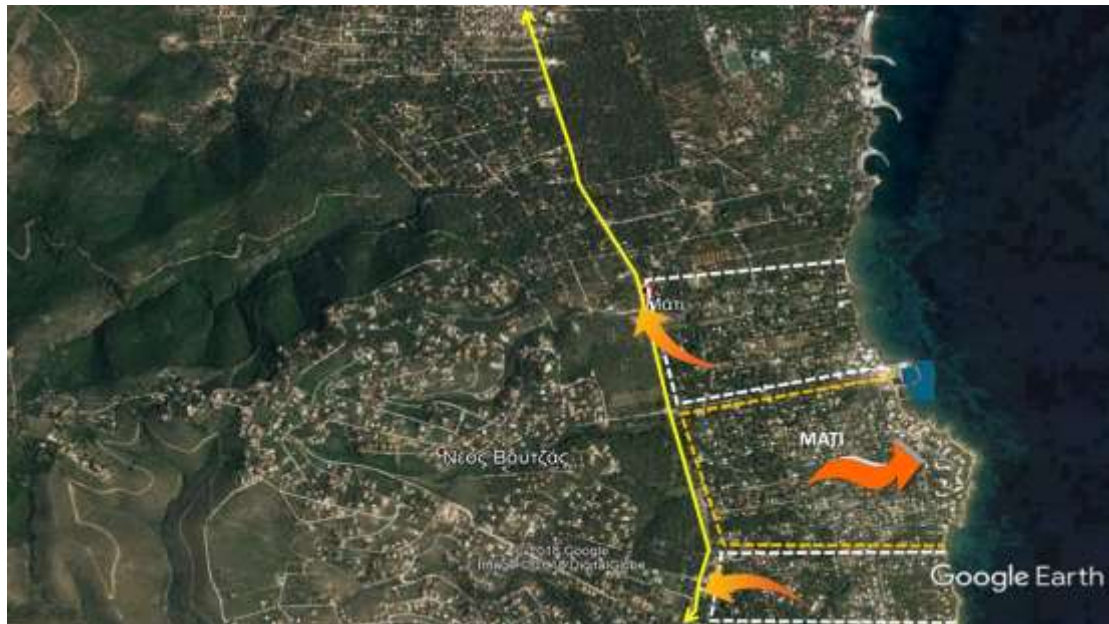
### The terrain

Fire started from the Mount Penteli in areas that were previously burned producing lower smoke than it should be for a forest fire but progressive faster. As crawling fire was progressing, it reached intact vegetation areas where forest was mingling with urban areas and instantly grew up (changed to crown fire) due to winds exceeding 8BFT. Now the strong fire was amplified by vegetation, houses, gas tanks and many other highly flammable materials and turned to an aerial lava storming everything all the way to the sea.

### What went wrong?

First of all the attitude that “it will not happen to us” and that “any fire will never cross the avenue”.

**Second**, the lack of a local leader (i.e. the Mayor or similar) that would envision the progress of the fire and order the following:



Cut the escape avenue into 3 sections (by police): two at the sides of the village directing people to evacuate with their cars or on foot towards nearby villages (Ag. Andreas and Rafina), while the main middle part of the village should evacuate on foot towards the sea waiting to be rescued by Coast Guard and if required by Hellenic Navy. The distance from Marathon Avenue to the beach ranged from 830m to 1029m. How to do that? Loud speakers, patrol cars, word of mouth from one person to the other. And what about sirens – only for bombarding in case of war? Of course sirens or church bells need to be interpreted correctly by the people and this means population awareness and related education. Not done. Modern technologies permit massive emergency SMSs via mobile phones. It is of note that Mati does not have its own police department or station – covered by Marathon PD.

**Third**, the lack of real operational picture that could have been provided from a drone remotely piloted from a safe area or from a vessel. Real picture could rang many bells at the right moment. Close collaboration between drones and



flying fire planes will avoid any accidents.

**Fourth**, sea rescue operation was unacceptably late and as a result many people remained at sea for hours (in the dark as time was passing by) or drawn. In addition, many find refuge in small

gulfs surrounding the area. Not a slight blame for sea men/women but they were called late and even then they saved more than 700 people. The blame is on the fact that in a crisis like this,



even without orders, the head of an organization takes over and order “full speed” to Mati village coast line, if no-one replies to his telephone calls. A mega fire is equivalent to war; in war both big and small leader take decisions and act accordingly.

**Fifth**, access to the beaches: village authorities record the passages; clean the passages [bushes, branches of high trees]; put related directive signs in at least two languages: “To the Beach” or “Dead End”. Even install a solar light on a post above the sign. Not done; 26 people were trapped in a piece of land and burned because they thought that it was the way to the beach.



**Sixth**, the roads and more. Disasters somehow resemble abscesses; they are ok if intact but can cause death if broken. Everybody were happy with what they had and, in a high percentage,

“accepted” existing chronic urban violations (illegal buildings; poor construction and engineering standards; low-quality materials; narrow roads; bi-directional roads; no fire hydrants (at least in strategic locations); a local tavern built on a stream and many more).



**Seventh**, cleaning/removing garbage process. Mati belongs to the Marathon Municipality – the same that the village I live belongs as well. Many victims complained that despite their efforts the Authorities didn't respond to their requests to remove cut grass and tree branches and other garbage from their premises with the excuse that they are sort of money. Same response for fixing public lighting. Same response to my village as well where many lights are out of operation since 2016. Cleaning the biomass under the pines? This is the joke of the decade! Cutting the loan at the side of roads and in fenced pieces of land? This is the most hilarious one. Of course the latter is also the responsibility of the citizens both inside their estate but also in a 10-15m perimeter around the estate – although if you do it, one day a court clerk will give you an outward call for property abuse (personal experience).



Once upon a time there was a Paradise on earth...

**Eighth**, the evacuation plan. Although firemen are great in the field and have proved that all the times during all types of fires, high ranked firemen are not sufficient at strategic level and many times have been accused for failing to counter severe fires. When those in high places learn how to react based on real time operational picture and info and test their plans with a variety of worst case scenarios, then there is hope that the Mati incident might be the last deadly fire. In between, it would be better to let the military (Army) handle the mega disasters because they have the knowledge and most import the means in close collaboration with other first responders.

**Ninth**, the missing people. Four operational centers (police, fire service, coast guard, and ambulance service) have their own missing people lists and is estimated that it will take 20-30 days to have an official list. However, DNA identification process of the burned corps started quite early and will follow the timeline of the missing people list.

**Tenth**, the distribution of help. One more proof of a problematic response plan was the fact that during the first 48hrs incoming help (volunteers, food, water, clothes) was not specifically



organized to be more effective and directed to those in need (victims and first responders [and animals/pets]).



### **In conclusion**

The only good thing was the fact that the Mati incident happened on Monday. If it was during weekend, death toll and missing people numbers might be enormous.

Many of the gaps identified herein should become lessons learned tomorrow. But similar gaps from previous/recent wild fires or floods continue to remain gaps and those responsible for loss of lives and properties are still free to enjoy life and govern their fellow citizens without shame and sense of responsibility. *C' est la vie* (in Greece)... ■