académie Nantes
RÉGION ACADÉMIQUE PAYS DE LA LOIRE
MINISTÈRE DE L'ÉDUCATION NATIONALE, DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE

BACCALAURÉAT GÉNÉRAL ET TECHNOLOGIQUE

ÉPREUVE SPÉCIFIQUE MENTION « SECTION EUROPEENNE »

Académie de Nantes
Binôme : Anglais/SVT

Thème 1 – La Terre dans l'Univers, la vie, l'évolution du vivant

1-B – Le domaine continental et sa dynamique

The Controversy Behind Italy's Quake

Using the document:
- Explain the geological context and how it relates to the earthquake frequency.
- In your opinion, should scientists be accused of homicide if they can't predict an earthquake?

Document 1: A magnitude 6.2 earthquake shook the Apennine Mountains—and given the region's geology, that's no surprise

By Erin Blakemore, August 24, 2016

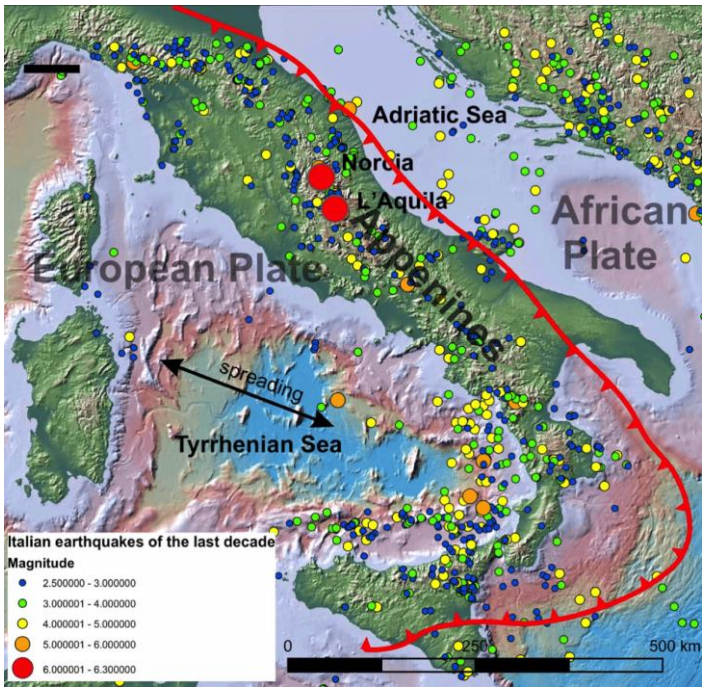
At least 73 people died in the mountains of central Italy this morning when a magnitude 6.2 earthquake and a series of at least 40 aftershocks shook the Umbria, Lazio and Marche regions. The Apennine Mountains, where the quake struck, stretch downward along nearly the entire "boot" of Italy—and they intersect with the boundary between the Eurasian and African tectonic plates near the quake's epicenter that lies close to Norcia, Italy. The mountain range was formed due to subduction, but the Tyrrhenian basin, which is located beneath the western Mediterranean Sea, is opening up slowly. This spread is complicated by counter-clockwise movement in the Adriatic plate, which sits right at the boundary between the Eurasian and African plates. Since so much is going on at the plate boundary at one time, geological events like this morning's earthquake can happen at any moment. All of that tectonic possibility can translate into chaos and death in Italy in the shift of a plate—and makes predicting earthquakes within an area known for its tightly-packed cities and historic buildings a high-stakes[1] proposition.

In 2012, six scientists—three seismologists, two seismic engineers and a volcanologist—were accused of manslaughter[2] for failing to accurately assess the risk of an aftershock to the deadly 2009 L'Aquila earthquake, a magnitude 6.3 quake, which killed 309 people.

Though the scientists were eventually acquitted, the uproar illustrates how vital it is that the experts get it right—and how outsized public reaction can be when they don't. Of course, scientists can't predict earthquakes, but they can calculate the probability of future tremors. The more they understand the complex regional tectonic forces at play, the more information they'll have at their disposal when assessing future risk.

http://www.smithsonianmag.com

1 : *à enjeu élevé* ; 2 : homicide



Document 2: Italian earthquakes of the last decade
Data source: USGS (United States Geological Survey)