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EUROPE AND CENTRAL ASIA (ECA)
RISK PROFILES

Albania

GDP $11.6 billion*

Population 2.9 million*

AFFECTED BY 100-YEAR FLOOD	AFFECTED BY 250-YEAR EARTHQUAKE	CAPITAL LOSS FROM 250-YEAR EARTHQUAKE
$700 million (6%)	$10 billion (83%)	$2 billion (18%)
200,000 (7%)	2 million (79%)	3,000 (<1%)

*2015 estimates

Albania's population and economy are exposed to earthquakes and floods, with earthquakes posing the greater risk of a high impact, lower probability event. The model results for present-day risk shown in this risk profile are based on population and gross domestic product (GDP) estimates for 2015. The estimated damage caused by historical events is inflated to 2015 US dollars.

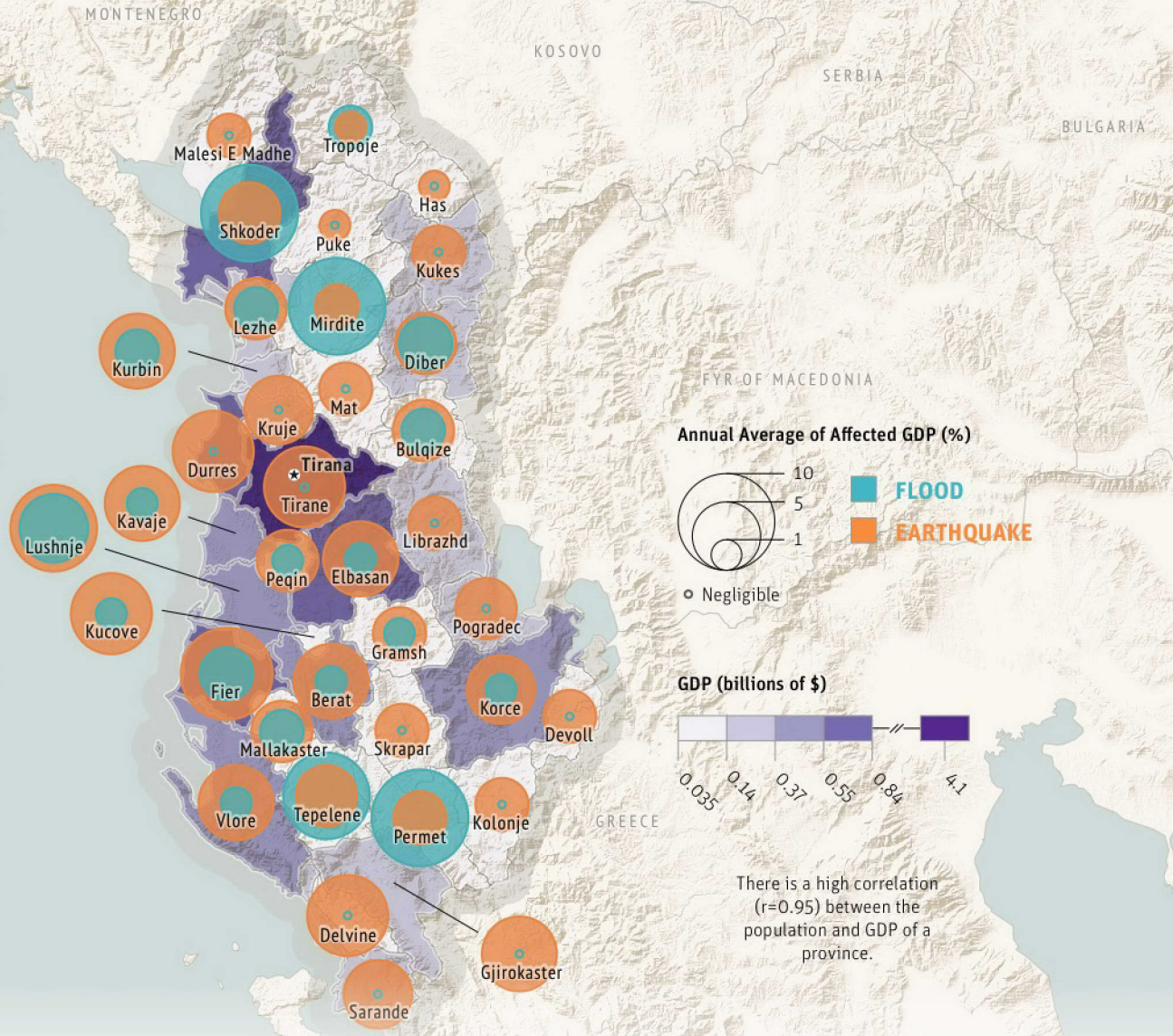
Just over half of Albania's population lives in urban environments. The country's GDP was approximately US$11.6 billion in 2015, with close to 70 percent derived from services and with industry and agriculture generating the remainder. Albania's per capita GDP was $3,990.

This map displays GDP by province in Albania, with greater color saturation indicating greater GDP within a province. The blue circles indicate the risk of experiencing floods and the orange circles the risk of earthquakes in terms of normalized annual average of affected GDP. The largest circles represent the greatest normalized risk. The risk is estimated using flood and earthquake risk models.

The table displays the provinces at greatest normalized risk for each peril. In relative terms, as shown in the table, the province at greatest risk of floods is Shkoder, and the one at greatest risk of earthquakes is Tirane. In absolute terms, the province at greatest risk of floods is also Shkoder, and the one at greatest risk of earthquakes is Tirane.

TOP AFFECTED PROVINCES

FLOOD ANNUAL AVERAGE OF AFFECTED GDP (%)		EARTHQUAKE ANNUAL AVERAGE OF AFFECTED GDP (%)	
Shkoder	14	Fier	9
Mirdite	10	Lushnje	8
Permet	10	Tirane	7
Tepelene	8	Durres	7
Lushnje	5	Kucove	7
Fier	3	Delvine	7
Diber	3	Kavaje	6
Kurbin	2	Gjirokaster	6
Tropoje	2	Vlore	6
Mallakaster	2	Kurbin	6



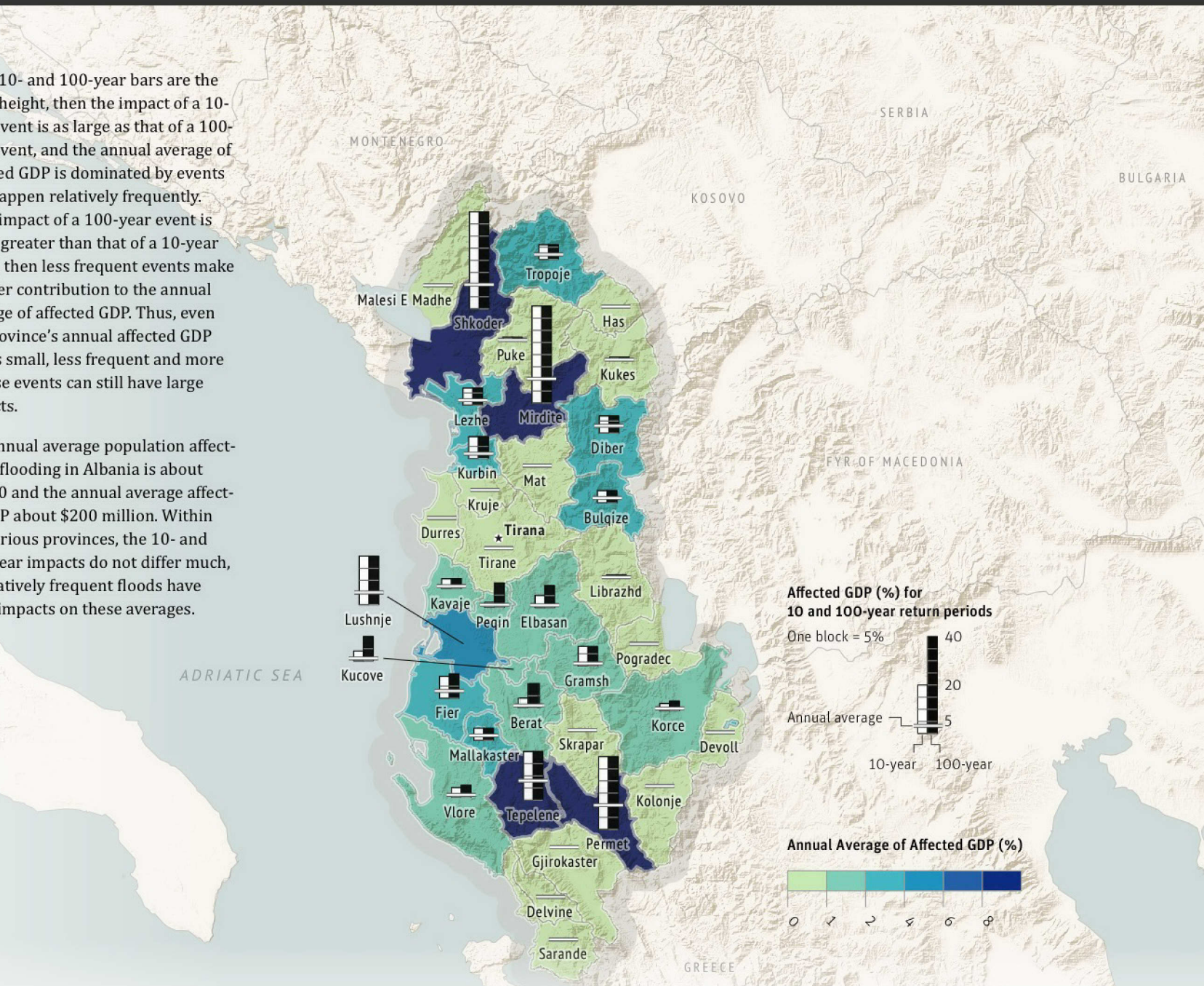
The most deadly flood in Albania since 1900 occurred in 1992. It killed 11 Albanians and caused close to $12 million in damage. Flooding in 2002 caused one fatality but about twice the damage ($23 million) of the 1992 flood. Damaging flooding also took place on the Drina River in 2010.

This map depicts the impact of flooding on provinces' GDPs, represented as percentages of their annual average GDPs affected, with greater color saturation indicating higher percentages. The bar graphs represent GDP affected by floods with return periods of 10 years (white) and 100 years (black). The horizontal line across the bars also shows the annual average of GDP affected by floods.

When a flood has a 10-year return period, it means the probability of occurrence of a flood of that magnitude or greater is 10 percent per year. A 100-year flood has a probability of occurrence of 1 percent per year. This means that over a long period of time, a flood of that magnitude will, on average, occur once every 100 years. It does not mean a 100-year flood will occur exactly once every 100 years. In fact, it is possible for a flood of any return period to occur more than once in the same year, or to appear in consecutive years, or not to happen at all over a long period of time.

If the 10- and 100-year bars are the same height, then the impact of a 10-year event is as large as that of a 100-year event, and the annual average of affected GDP is dominated by events that happen relatively frequently. If the impact of a 100-year event is much greater than that of a 10-year event, then less frequent events make a larger contribution to the annual average of affected GDP. Thus, even if a province's annual affected GDP seems small, less frequent and more intense events can still have large impacts.

The annual average population affected by flooding in Albania is about 50,000 and the annual average affected GDP about $200 million. Within the various provinces, the 10- and 100-year impacts do not differ much, so relatively frequent floods have large impacts on these averages.



Albania's most deadly earthquake since 1900 took place in 1920 in Tepelene, with a magnitude of 6. The earthquake and the tsunami that followed caused about 600 fatalities. Since then, Albania has experienced many earthquakes of varying severity. A significant earthquake that occurred in 1967 caused 18 fatalities and $140 million in damage.

This map depicts the impact of earthquakes on provinces' GDPs, represented as percentages of their annual average GDPs affected, with greater color saturation indicating higher percentages. The bar graphs represent GDP affected by earthquakes with return periods of 10 years (white) and 100 years (black). The horizontal line across the bars also shows the annual average of GDP affected by earthquakes.

When an earthquake has a 10-year return period, it means the probability of occurrence of an earthquake of that magnitude or greater is 10 percent per year. A 100-year earthquake has a probability of occurrence of 1 percent per year. This means that over a long period of time, an earthquake of that magnitude will, on average, occur once every 100 years. It does not mean a 100-year earthquake will occur exactly once every 100 years. In fact, it is possible for an earthquake of any return period to occur more than once in the same year, or to appear in consecutive years, or not to happen at all over a long period of time.

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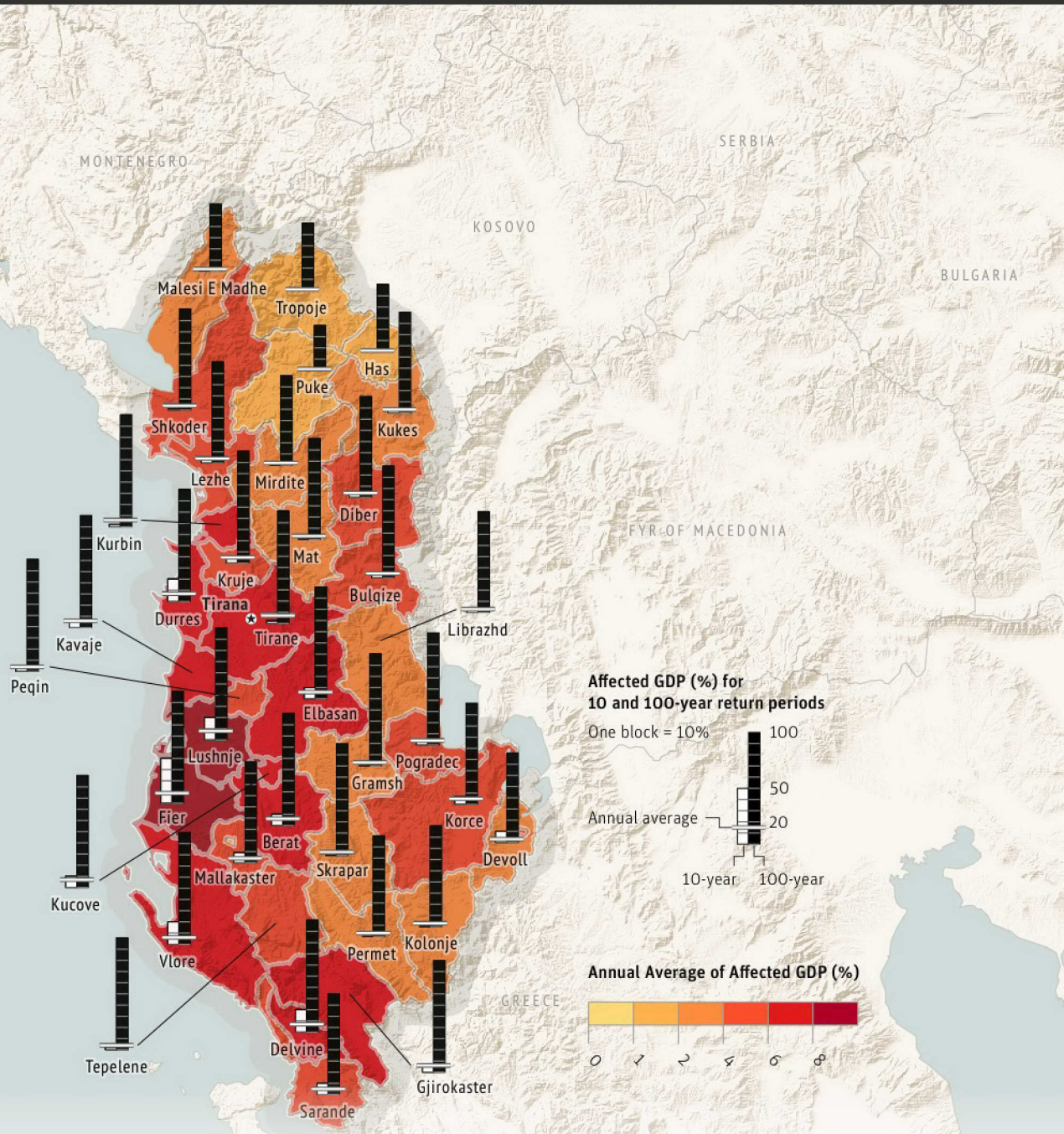
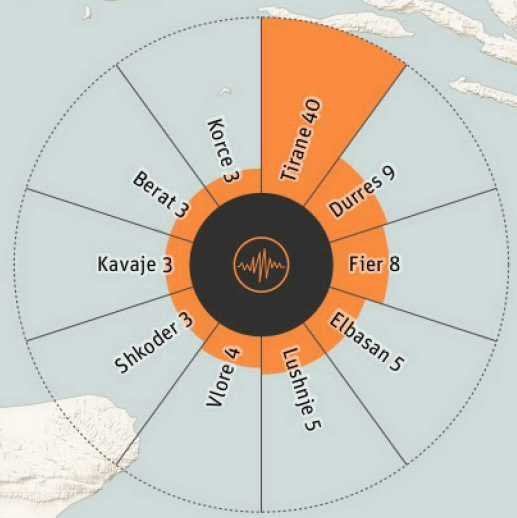
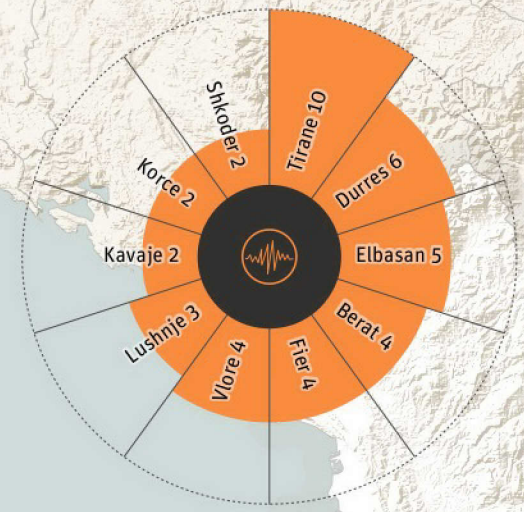
The annual average population affected by earthquakes in Albania is about 200,000 and the annual average affected GDP about $700 million. The annual averages of fatalities and capital losses caused by earthquakes are about 50 and about $100 million, respectively. The fatalities and capital losses caused by more intense, less frequent events can be substantially larger than the annual averages. For example, an earthquake with a 0.4 percent annual probability of occurrence (a 250-year return period event) could cause nearly 3,000 fatalities and $2 billion in capital loss (about 20 percent of GDP).



EARTHQUAKE
ANNUAL AVERAGE CAPITAL LOSS (MILLIONS $)

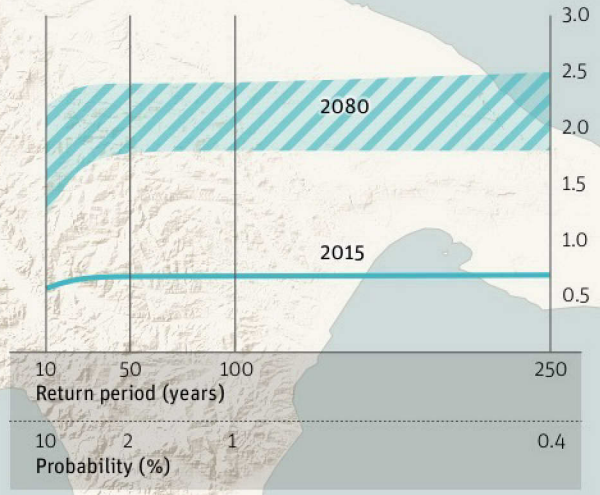


EARTHQUAKE
ANNUAL AVERAGE FATALITIES

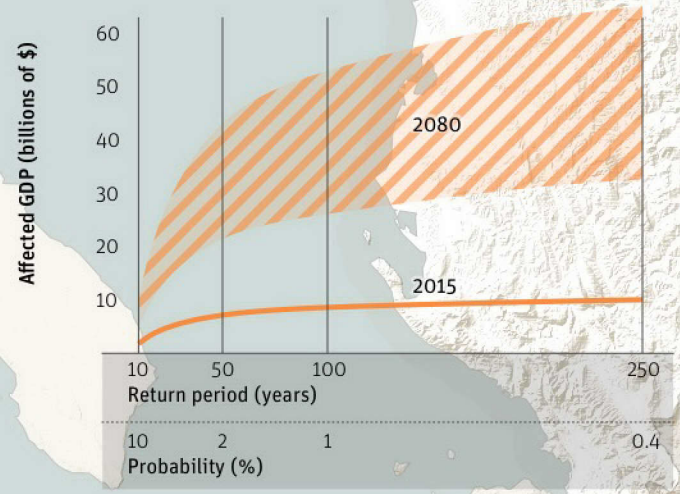


The rose diagrams show the provinces with the potential for greatest annual average capital losses and highest annual average numbers of fatalities, as determined using an earthquake risk model. The potential for greatest capital loss occurs in Tirane, which is not surprising, given the economic importance of the province.

FLOOD
EXCEEDANCE PROBABILITY CURVE, 2015 AND 2080



EARTHQUAKE
EXCEEDANCE PROBABILITY CURVE, 2015 AND 2080



The exceedance probability curves display the GDP affected by, respectively, floods and earthquakes for varying probabilities of occurrence. Values for two different time periods are shown. A solid line depicts the affected GDP for 2015 conditions. A diagonally striped band depicts the range of affected GDP based on a selection of climate and socioeconomic scenarios for 2080. For example, if Albania had experienced a 100-year return period flood event in 2015, the affected GDP would have been an estimated $700 million. In 2080, however, the affected GDP from the same type of event would range from about $2 billion to about $2.5 billion. If Albania had experienced a 250-year earthquake event in 2015, the affected GDP would have been about $10 billion. In 2080, the affected GDP from the same type of event would range from about $30 billion to about $60 billion, due to population growth, urbanization, and the increase in exposed assets.

All historical data on floods and earthquakes are from, respectively, D. Guha-Sapir, R. Below, and Ph. Hoyois, EM-DAT: International Disaster Database (Université Catholique de Louvain, Brussels, Belgium), www.emdat.be, and the National Geophysical Data Center/World Data Service (NGDC/WDS), Significant Earthquake Database (National Geophysical Data Center, NOAA), doi:10.7289/V5TD9V7K. Damage estimates for all historical events have been inflated to 2015 US$.