

## Goldman Sachs released a 34-page analysis of the effects of climate change. And the results are terrifying.

<https://markets.businessinsider.com/news/stocks/goldman-sachs-climate-change-threatens-new-york-tokyo-lagos-cities-2019-9-1028552494>

By Yusuf Khan  
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REUTERS/Lucas Jackson

- **A Goldman Sachs report on the effects of climate change on cities across the world makes for grim reading.**
- **The report, released earlier this month, said rising temperatures would lead to "changing disease patterns," "more intense and longer-lasting heatwaves," "more destructive weather events," and "pressure on the availability and quality of water for drinking and agriculture."**

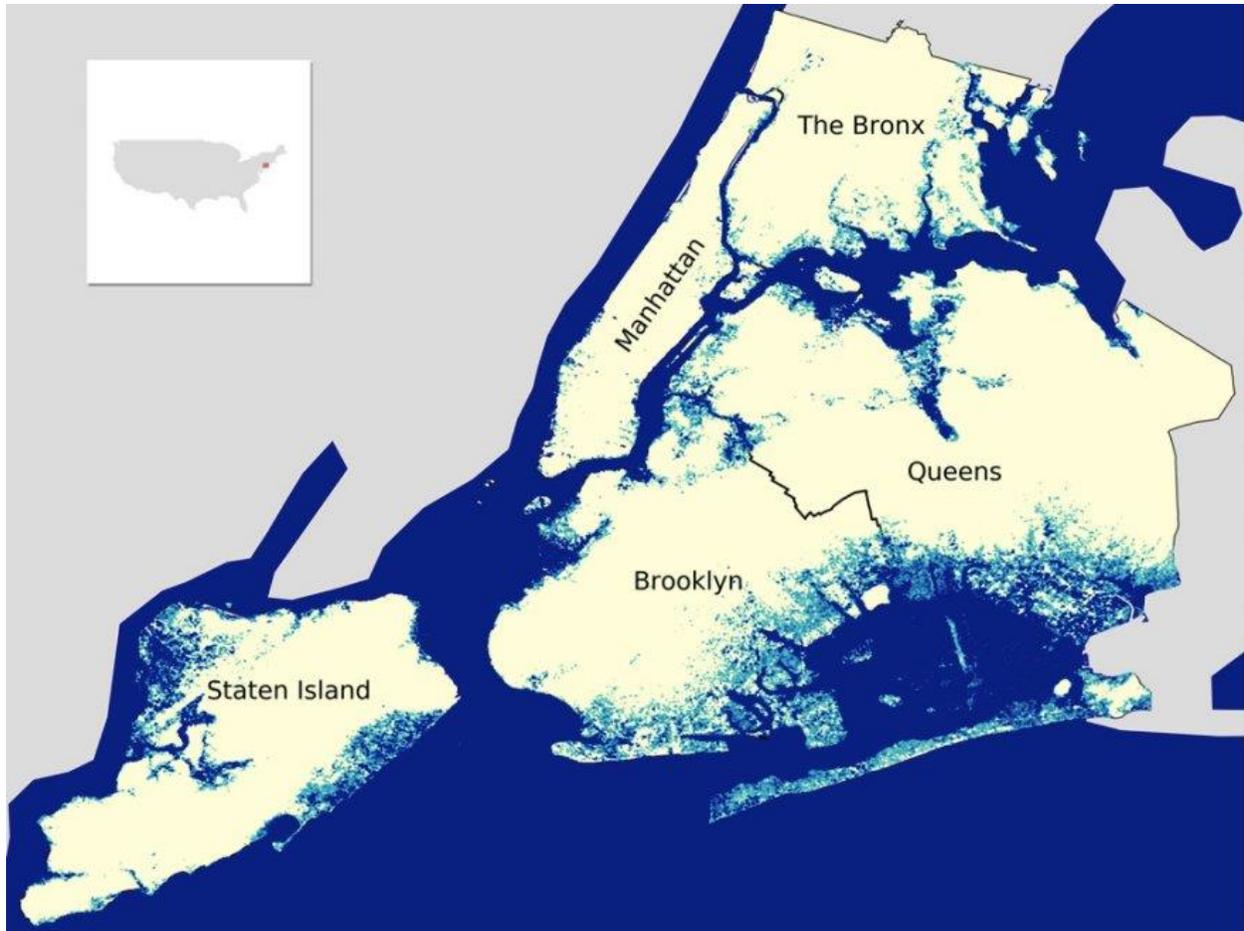
- **Major cities such as New York, Tokyo, and Lagos were also highlighted as being at risk of flooding.**
  - **Markets Insider also spoke to Goldman Sachs, UBS and JPMorgan about why banks are now focusing on climate change.**
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Goldman Sachs this month **released a report on the effects of climate change** on cities around the world, and it makes for grim reading.

The bank's Global Markets Institute, led by Amanda Hindlian, warned of significant risks to the world's largest cities, which are especially vulnerable to more frequent storms, higher temperatures, rising sea levels, and storm surges.

"Cities generate roughly 80% of global GDP and are home to more than half of the world's population today, a share that the United Nations projects will reach two-thirds by 2050," the report said. About 40% of the population lives within 100 kilometers of a coast, and one in 10 people live in areas less than 10 meters above sea level, it said.

Goldman highlighted three cities that could be subject to storm surges and could face harmful flooding: New York, Tokyo, and Lagos. It said several others that are less than 11 meters above sea level — including Miami, Florida; Alexandria, Egypt; Dhaka, Bangladesh; and Shanghai, China — also faced major flood risks.



Goldman Sachs

Goldman's researchers said they started with the scientific consensus that "human activity — principally the emission of greenhouse gases — is causing the earth to warm in ways that are affecting the climate."

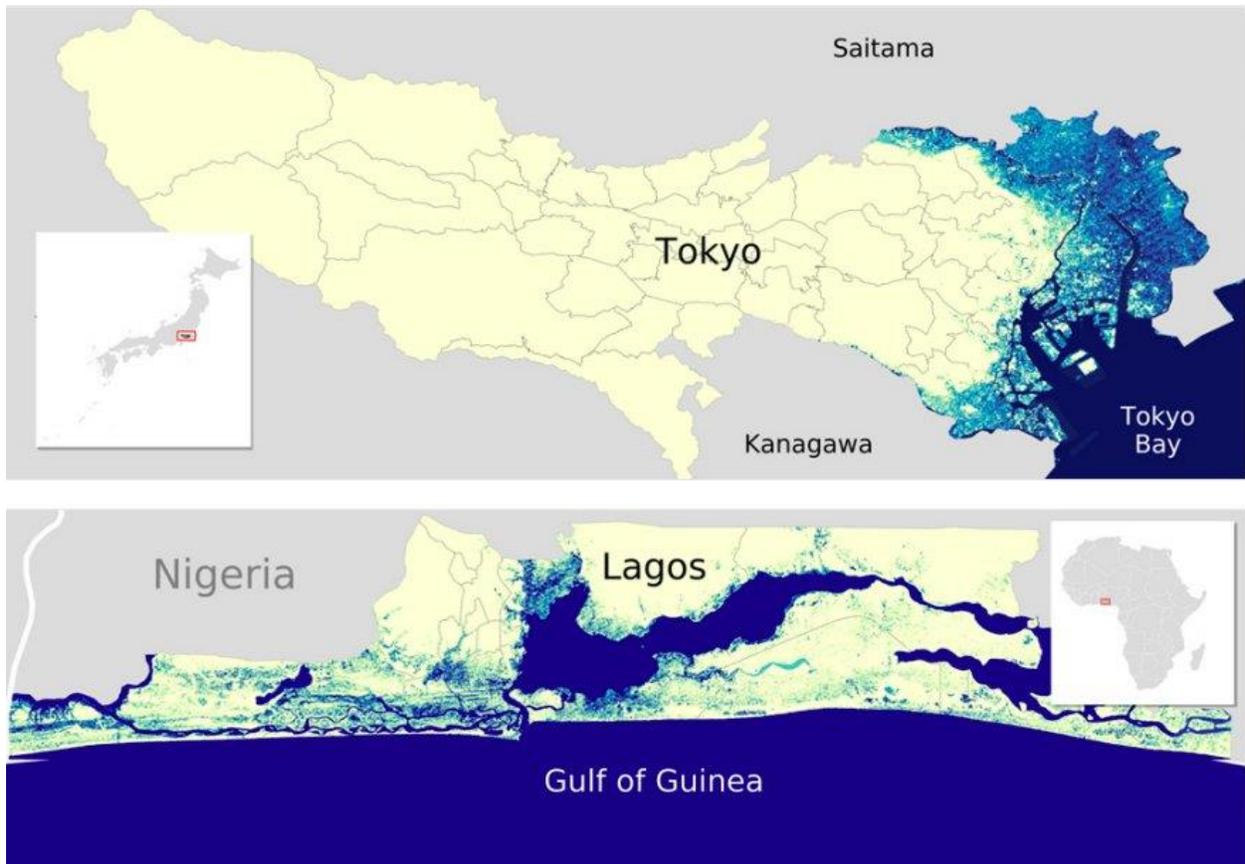
They said that natural ecosystems would be damaged, human health would be threatened, and food and drinking-water systems would be pressured. For example, agriculture would be massively affected, as "warmer temperatures and shifting precipitation patterns could reduce yields and nutritional quality as well change growing seasons and agricultural zones around the world."

Goldman gave some fairly stark warnings about potential outcomes:

- **"More frequent, more intense and longer-lasting heatwaves"** that affect human health, productivity, economic activity, and agriculture. "Higher surface temperatures

could exacerbate the warming process by causing permafrost to melt, releasing further methane and CO<sub>2</sub> into the atmosphere."

- **"Destructive weather events, including storms, winds, flooding and fires."** It's not just New York, Tokyo, and Lagos; "other major low-lying coastal or already flood-prone cities include Shanghai, Dhaka, Mumbai and Karachi — each of which has a population of 15 million people or more."
- **"Changing disease patterns."** The researchers said that "warmer temperatures could cause disease vectors to migrate from the tropics to regions where people have less immunity; this is true not only for viruses like malaria and dengue fever but also for water-borne and food-borne diseases."
- **"Shifting agricultural patterns" and food shortages.** "Livestock could be affected by higher temperatures and reduced water supplies. Ocean acidification is likely to put stress on aquatic populations and affect current fishing patterns. Some of these changes are already underway. Some climate scientists, for example, estimate that coral reefs will be all but extinct over the course of the century due to ocean acidification."
- **Water.** "Half of the world's population will live in water-stressed areas as soon as 2025," Goldman said, citing the World Health Organization. "Even in non-stressed areas, the quality of surface water could deteriorate as more rain and storms drive erosion and the release of toxins. These dynamics could affect everything from the availability of drinking water for people to a shortage of water for livestock and crops (with negative effects for the food supply) to decreases in hydroelectric power generation."



Goldman Sachs

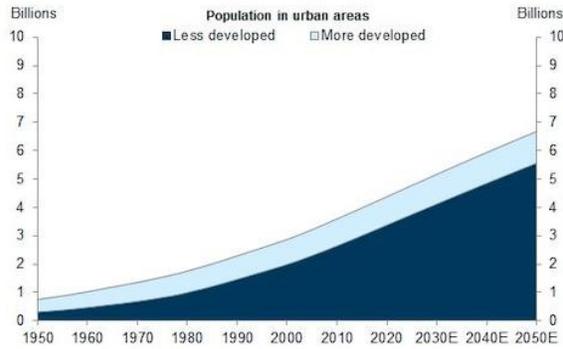
The bank said those things would "affect economic activity, damage infrastructure — from buildings to transportation to water and waste-management systems — and disproportionately harm vulnerable residents."

"Despite the uncertainty around the timing and scale of the impact, it may be prudent for some cities to start investing in adaptation now," Goldman said, adding that "urban adaptation could drive one of the largest infrastructure build-outs in history."

"Given the scale of the task, urban adaptation will likely need to draw on innovative sources of financing," the report said.

**Exhibit 5 : Most of the world's urban population is in less-developed regions**

Number of people in urban areas, 1950-2050E

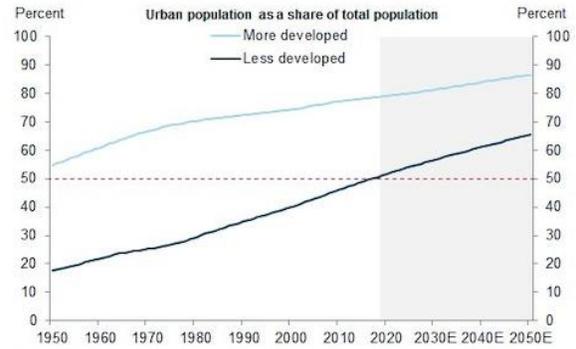


Note: More-developed regions include Europe, Northern America, Australia, New Zealand and Japan. Less-developed regions include Africa, Asia (excluding Japan), Latin America and the Caribbean plus Melanesia, Micronesia and Polynesia.

Source: United Nations, Goldman Sachs Global Investment Research

**Exhibit 6 : While the share of people in cities is higher in more-developed regions, less-developed countries are narrowing the gap**

Share of population in urban areas, 1950-2050E



Note: More-developed regions include Europe, Northern America, Australia, New Zealand and Japan. Less-developed regions include Africa, Asia (excluding Japan), Latin America and the Caribbean plus Melanesia, Micronesia and Polynesia.

Source: United Nations, Goldman Sachs Global Investment Research