UNITED STATES COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

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"LEADING THE WAY: ADAPTING TO SOUTH FLORIDA'S CHANGING COASTLINE"

MEGAN LINKIN
SWISS RE, NATURAL HAZARDS EXPERT

Chairman Rockefeller, Ranking Member Thune, Senator Nelson, and other members of the Committee on Commerce, Science and Transportation my name is Megan Linkin and I'm a natural hazards expert for Swiss Re. Swiss Re is a global reinsurance company and last year marked our 150th anniversary. I thank you for the opportunity to testify in front of the committee regarding the implications of sea level rise and climate change. Swiss Re recognizes that climate change will increase risk throughout the world, especially to those cities and population centers situated along the coast.

Climate change is expected to alter the frequency and severity of many extreme weather events, such as floods, droughts and rainfall. Even currently, we are vulnerable to extreme weather events, due to the globalization of the economy and increasing reliance on technology. We witnessed our vulnerability during Hurricane Sandy, the September 2013 floods in Colorado and the extreme winter of 2013/14.

At present, it is difficult to determine whether or not these recent, extreme meteorological events are attributable to climate change or climate variability. Regardless, these events are in line with the expected impacts of climate change in the coming decades. It is impossible to attribute any of the insured or economic weather related loss to climate change – we simply don't have the means currently to discern how much, if any, of the loss was caused by climate change.

What we do know is this: The risk posed by coastal flood is indisputably growing, due to rising sea levels. The increasing risk that it poses to many of our coastal communities will be tremendous in terms of loss of property and potentially a loss in life. We should never lose sight of the fact that over 1,800 people perished due to the storm surge and inadequate preventative measures in place prior to Hurricane Katrina.

Many countries are highly exposed to sea level rise and flood, few more so than the United States. Coastal and shoreline communities account for approximately $6.6 trillion to US GDP[1], and 51 million[2] jobs. The risk to coastal communities is not only driven by sea level rise, but increasing population and assets situated in these high risk areas. If current population growth trends continue, the U.S. coastal population will grow from 123 million people to nearly 134 million people by 2020.[3]

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[1] Source: NOAA
[2] Source BLS
[3] Source: NOAA

Florida provides a good example of the risk posed to the U.S. coastline, with over 8,400 miles of tidal shoreline and over 75% of the state's population residing in coastal counties. The inevitable costs to recover from these events, especially in major cities like Miami, are going to be significant and much greater than anything that we have ever experienced before.

Coastal communities thrive on their proximity to the coast and the development of these regions. Coastal development creates jobs, revenue, and enhances the prosperity of the community. However, there are perverse incentives at play because of the enormous economic incentive to develop high risk coastal areas, which then puts further people and assets at risk. As we have seen many times, the costs when disaster strikes are externalized; the Federal government and the taxpayers are expected to foot the bill. We must rethink this approach in order to reduce the risk and protect our communities.
Therefore, we must act today to prepare for tomorrow. This means controlling and mitigating our risk to sea level rise through a variety of measures including building and zoning codes, sea walls, reinforcing or relocating key infrastructures, building elevations and other measures.

It also means integrating climate risk considerations into our planning processes. For example, if we expect a building to have a life span of 60 years then it must to be built to withstand the likely climate of 60 years in the future. Until we start to integrate climate change into these processes we will be constantly creating more problems for future generations to take care of and potentially creating an ever growing portfolio of "stranded assets". A simple example is incorporating sea level risk projections into FEMA flood maps.

Insurance is a key component of any holistic risk management strategy. Insurance cannot replace what is irreplaceable, such as land and lives, but it can provide both persons and governments with the financial means to recover and rebuild quickly. The insurance industry is resilient, innovative, and experts in risk evaluation. Throughout the years we have worked alongside the government in implementing standards that have reduced economic loss, saved lives and educating the consumer to the true risks faced by them.

Typically the hazard component of all natural catastrophe models is based on data published by the United States Government. This would include current information provided by the United States Geological Survey, National Ocean and Atmospheric Administration, the National Weather Service's Storm Prediction Center, the Hurricane Research Center and other official sources. Once any information published by these official sources is published, including sea level changes, we incorporate these changes within our models.

Presently I know of no insurance company or reinsurer that directly includes the risk of climate change into their models. Our product, insurance, is typically contracted on an annual basis. Within that time period the impact of any climate changes including sea level rise are too insignificant and without scientific consensus to responsibly include in our modeling approach.

Although we do not directly include climate change within our models we may unknowingly be doing so within each catastrophe model update that we do. Every couple of years our models are updated to reflect the loss history and the scientific findings after the most recent events.

As such any influence that climate change has on these events is implicitly included. Even though there is not direct/explicit loading for climate change in our models, we take the issue very seriously and conduct research which does specifically take climate change factors into consideration.

The insurance industry, particularly Swiss Re, has pioneered studies which investigate the economic loss potential from extreme weather events, and savings from the implementation of various resiliency measures, in the present and in a new climate regime caused by climate change. This methodology, which we refer to as the "Economics of Climate Adaptation," has been successfully deployed globally. South Florida (Broward, Miami-Dade and Palm Beach) is one of the locations where the analysis was performed; the results showed that in spite of a potential annual cost of tropical cyclones impacts costing the equivalent of 10% of local GDP by 2030, over 40% of the total expected loss could be averted using cost effective measures such as beach nourishment and vegetation management[4].

If we fail to act we will be faced with the astronomical cost to recover from our inaction and we may also see the availability of insurance becoming scare at an affordable price. We will always have the capacity to insure and reinsure but the impact of a steady gradual increase in frequency and severity because of these higher risks could lead to higher premiums, which many consumers may not want to pay. Without insurance, communities will be slower to recover and many may not recover at all.

We recognize that Florida has been at the forefront of tacking action to deal with severe weather impacts no more so in places like Broward County. In Broward County officials have recognized the increased risk and are acting upon it. We urge the rest of Florida to act now in a unified fashion. We support the actions taken by his committee and thank you again for asking Swiss Re to testify. I look forward to answering any follow-up questions from the committee.

[4] Source: Economics of Climate Adaptation main report:
http://media.swissre.com/documents/rethinking_shaping_climate_resilent_development_en.pdf