



Increasing Prevalence of Extreme Weather Events

By Jim Swanke

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OPINION

The Alarming Thing About Climate Alarmism

By Bjorn Lomborg

It is an indisputable fact that carbon emissions are rising—and faster than most scientists predicted. But many climate-change alarmists seem to claim that all climate change is worse than expected. This ignores that much of the data are actually encouraging. The latest study from the United Nations Intergovernmental Panel on Climate Change found that in the previous 15 years temperatures had risen 0.99 degrees Fahrenheit. The average of all models expected 0.6 degrees. So we're seeing about 60% less temperature rise than expected.

Exaggerated, worst-case claims result in bad policy and they ignore a wealth of encouraging data.

Facts like this are important because a one-sided focus on worst-case stories is a poor foundation for sound policies. Yes, Arctic sea ice is melting faster than the models expected. But models also predicted that Antarctic sea ice would decrease, yet it is increasing. Yes, sea levels are rising, but the rise is not accelerating—if anything, two recent papers, one by Chinese scientists published in the January 2014 issue of *Global and Planetary Change*, and the other by U.S. scientists published in the May 2013 issue of *Coastal Engineering*, have shown a small decline in the rate of sea-level increase.

We are often being told that we're seeing more and more droughts, but a study published last March in the journal *Nature* actually shows a decrease

in the world's surface that has been afflicted by droughts since 1982.

Hurricanes are likewise used as an example of the "ever worse" trope. If we look at the U.S., where we have the best statistics, damage costs from hurricanes are increasing—but only because there are more people, with more expensive property, living near coastlines. If we adjust for population and wealth, hurricane damage during the period 1990-2013 decreased slightly.

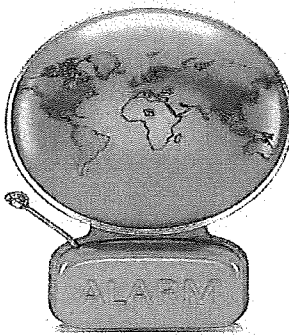
At the U.N. climate conference in Lima, Peru, in December, attendees were told that their countries should cut carbon emissions to avoid future damage from storms like typhoon Haiyan, which hit the Philippines during the conference, killing at least 21 people and forcing more than a million into shelters. Yet the trend for devastating typhoons around the Philippines has actually declined since 1950, according to a study published in 2012 by the American Meteorological Society's *Journal of Climate*.

Again, we're told that things are worse than ever, but the facts don't support this.

This is important because if we want to help the poor people who are most threatened by natural disasters, we have to recognize that it is less about cutting carbon emissions than it is about pulling them out of poverty.

The best way to see this is to look at the world's death toll from natural disasters over time. In the Oxford University database for death rates from floods, extreme temperatures, droughts and storms, the average in the first part of last century was more than 13 dead every year per 100,000 people. Since then the death rates have dropped 97% to a new low in the 2010s of 0.38 per 100,000 people.

The dramatic decline is mostly due to economic development that helps



naitions withstand catastrophes. If you're rich like Florida, a major hurricane might cause plenty of damage to expensive buildings, but it kills few people and causes a temporary dent in economic output. If a similar hurricane hits a poorer country like the Philippines or Guatemala, it kills many more and can devastate the economy.

In short, climate change is not worse than we thought. Some indicators are worse, but some are better.

what has been done for the past 20 years? The public has been bombarded with dramatic headlines and apocalyptic photos of climate change and its consequences. Yet despite endless accusations of climate summit, carbon emissions continue to rise, especially in rapidly developing countries like India, China and many African nations.

Alarmism has encouraged the pursuit of a one-sided climate policy of trying to cut carbon emissions by subsidizing wind farms and solar panels. Yet today, according to the International Energy Agency, only about 0.4% of global energy consumption comes from solar photovoltaics and windmills. And even with exceptionally optimistic assumptions about future deployment of wind and solar, the IEA expects that these energy forms will provide a minuscule 2.2% of the world's energy by 2040.

In other words, for at least the next two decades, solar and wind energy are simply expensive, feel-good measures that will have an imperceptible climate impact. Instead, we should focus on investing in research and development of green energy, including new battery technology to better store and discharge solar and wind energy and lower its costs. We also need to invest in and promote growth in the world's poorest nations, which suffer the most from natural disasters.

Climate-change doomsayers notwithstanding, we urgently need balance if we are to make feasible choices and pick the right climate policy that can help humanity slow and inevitably adapt to, climate change.

Mr. Lomborg, director of the Copenhagen Consensus Center, is the author of "The Skeptical Environmentalist" (Cambridge Press, 2001) and "Cool It" (Knopf, 2007).





OPINION

Whatever Happened to Global Warming?

By Matt Ridley

On Sept. 23 the United Nations will host a party for world leaders in New York to discuss urgent action against climate change. Yet leaders from China, India and Germany have already announced that they won't attend the summit and others are likely to follow, leaving President Obama looking a bit lonely. Could it be that they no longer regard it as an urgent threat that some time later in this century the air may get a bit warmer?

Now come climate scientists' implausible explanations for why the 'hiatus' has paused the 15-year mark.

In effect, this is all that's left of the global-warming emergency that the U.N. declared in its first report on the subject in 1990. The U.N. no longer claims that there will be dangerous or rapid climate change in the next two decades. Last September, between the second and final draft of its fifth assessment report, the U.N.'s inter-governmental Panel on Climate Change quietly downgraded the warming it expected in the 50 years following 1990, to about 0.5 degrees Celsius from 0.7 (or, in Fahrenheit, to about 0.9 degrees, from 1.3). Even that is likely to be too high. The climate-research establishment has finally admitted openly what simple scientists have been saying for nearly a decade: Global warming has stopped since shortly before this century began.

First the climate-research establishment decided that a pause existed, noting that if they read a pause, it

their predicament worse by implying that man-made climate change is so slow and tentative that it can be easily overwhelmed by natural variation in temperature—a possibility that they had previously all but ruled out.

When the climate scientist and ecologist Bob Carter of James Cook University in Australia wrote an article in 2006 saying that there had been no global warming since 1998 according to the most widely used measure of average global air temperature, there was no outcry. A year later, when David Whitehouse of the Global Warming Policy Foundation in London made the same point, the environmentalist and journalist Mark Lynas told in the *New Statesman* that Mr. Whitehouse was "wrong, completely wrong," and was "deliberately or otherwise, misunderstanding the public."

We know now that it was Mr. Lynas who was wrong. Two years before Mr. Whitehouse's article, climate scientists were already admitting in results among themselves that there had been no warming since the late 1990s. "The scientific community would cross down on me in no uncertain terms if I said the world had cooled from 1998," wrote Paul Jones of the University of East Anglia in Britain in 2005. He went on: "Only if it had but it is only seven years of data and it isn't statistically significant."

If the pause lasted 15 years, they concluded, then it would be so significant that it would invalidate the climate-change models upon which policy was being built. A report from the National Oceanic and Atmospheric Administration (NOAA) written in 2008 made this clear: "The simulations rate out far the 95% level zero trends for intervals of 15 yr or more."

Well, the pause has now lasted for 16, 19 or 26 years—depending on



McIntire, a professor of economics at the University of Guelph in Canada. It has been roughly two decades since there was a trend in temperature significantly different from zero. The burst of warming that preceded the millennium lasted about 20 years and was preceded by 50 years of sharp cooling after 1940.

This has taken me by surprise. I was among those who thought the pause was a blip. As a "lakerammer," I've long thought that man-made carbon dioxide emissions will raise global temperatures, but that this effect will not be amplified much by feedback from extra water vapor

is that water-vapor feedback will triple the effect of carbon dioxide. Not now I worry that I am exaggerating, rather than underplaying, the likely warming.

Most science journalists, who are strongly biased in favor of reporting alarmist predictions, rather than neutral facts, chose to ignore the pause until very recently, when there were explanations available for it. Nearly 60 different excuses for the pause have been advanced, including Chinese economic growth that supposedly pushed cooling sulfate particles into the air, the removal of ozone-eating chemicals, an excess of

warmth from the air and sequestering it in the ocean. This was based on a few flimsy observations, suggesting a very tiny change in water temperature—a few hundredths of a degree—at depths of up to 200 meters.

Last month two scientists wrote in *Science* that they had indeed found the explanation in natural fluctuations in currents in the Atlantic Ocean. For the last 20 years of the 20th century, Alaska Ocean and Ke-Fa-Teng suggested, these currents had been boosting the warming by bringing heat to the surface, then for the past 15 years the currents had been contracting it by taking heat down deep.

The warming in the last three decades of the 20th century, to quote the news release that accompanied their paper, "was roughly half due to global warming, and half to the natural Atlantic Ocean cycle." In other words, even the modest warming in the 1950s and 1960s—which never achieved the 0.3 degrees Celsius per decade necessary to satisfy the feedback-enhanced models that predict about three degrees of warming by the end of the century—had been exaggerated by natural causes. The man-made warming of the past 20 years has been 30 fiftths that a shifting current in one ocean was enough to wipe it out altogether.

Putting the icing on the cake of good news, Xinyao Chen and Ke-Kit Tung think the Atlantic Ocean may continue to prevent any warming for the next two decades. So in their quest to explain the pause, scientists have made the future sound even less alarming than before. Let's hope that the United Nations admits as much on day one of its coming jamboree and asks the delegates to seek as go home and concentrate on more pressing global problems like war, terror, disease, poverty, habitat loss and the 1.3 billion people with no electricity.



WORLD NEWS

Arctic Ice Is Able To Rebuild, Study Says

By Roxanne Laz Houx

Arctic sea ice is so sensitive to changing temperatures that a single cool summer briefly reversed the decline in the ice cap around the North Pole, says a new study.

Using new satellite data, researchers at University College London reported in *Nature Geoscience* on Monday that the total volume of sea ice in the Northern Hemisphere was well above average in the autumn of 2013, traditionally the end of the annual melt season, after an unusually cool summer when temperatures dropped to levels not seen since the 1960s.

"We now know it can recover by a significant amount if the melting season is cut short," said Rachel Tilling, the study's lead author and a researcher who studies satellite observations of the Arctic. "The sea ice might be a little more resilient than we thought."

A steady decline in the extent of Arctic sea ice since the late 1970s has been taken as a barometer of longer-term warming trends in the Northern hemisphere. The U.S. Navy last year predicted that by 2030 the Arctic's northern sea route could be ice-free and navigable for nine weeks every year.

Ms. Tilling and her colleagues used new data from the European Space Agency's Cryosat-2 radar satellite, launched in 2010.

For the first time, they measured changes in the overall volume of seasonal sea ice across the Arctic and Greenland. Until now, researchers have been able to track the extent of ice, but not its thickness. In 2013, summer temperatures were about 5% cooler than the previous year and the volume of autumn ice jumped 41%, they said.



Fragile ozone layer shows first sign of recovery: U.N.

Wed, Sep 10 2014

By Tom Miles

GENEVA (Reuters) - The ozone layer that shields life from cancer-causing solar rays is showing its first sign of recovery after years of dangerous depletion, a U.N. study said on Wednesday, in a rare piece of good news on the environment.

Experts said it was largely down to global action - a 1987 ban on man-made gases that damage the fragile high-altitude screen. The agreement would help prevent millions of cases of skin cancer and other conditions, they added.

The ozone hole that appears over Antarctica has also stopped growing bigger every year, though it will be about a decade before it starts shrinking, said the report co-produced by the World Meteorological Organization and the U.N. Environment Programme.

"International action on the ozone layer is a major environmental success story... This should encourage us to display the same level of urgency and unity to tackle the even greater challenge of tackling climate change," said WMO Secretary-General Michel Jarraud.

Past studies have suggested the ozone layer has stopped getting worse.

"Now for the first time in this report we say that we see indications of a small increase in total ozone. That means recovery of the ozone layer in terms of total ozone has just started," said WMO senior scientific officer Geer Braathen.

The 1987 Montreal Protocol that banned or phased out ozone-depleting chemicals, including chlorofluorocarbons (CFCs) once widely used in refrigerators and spray cans, would prevent 2 million cases of skin cancer annually by 2030 according to UNEP.

The agreement would also help avert damage to wildlife, agriculture, human eyes and immune systems, the agency added.

CLIMATE IMPACT

The ozone layer was expected to recover toward its 1980 level by mid-century, or slightly later for Antarctica, where it gets dangerously thin every year between mid-August and November or December.

"The development you saw during the 1990s that the ozone hole got bigger from year to year - that development has stopped, so it has leveled off," said Braathen.

"We think in about 2025 or thereabouts we'll be able to say with certainty that the ozone hole is getting smaller," he added. Progress could be sped up by as much as 11 years if existing stocks of ozone-depleting substances - many of them stored up in old fridges and fire-extinguishers - were destroyed.

The largest ozone hole on record was about 30 million square km in 2006. The hole now covers about 20 million square km - big enough for the moon to pass through - but may not have peaked this season.

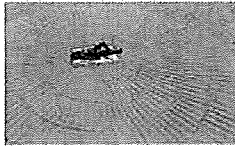
The size of the hole varies from year to year, partly due to temperature in the upper atmosphere.

The reduction of ozone-damaging chemicals would also help the environment, the report said, as many of the substances were also greenhouse gases blamed for global warming.

But the rising levels of other greenhouse gases in the atmosphere had "the potential to undermine these gains," said the report.

One of the ozone-depleting substances that was supposed to have been phased out - carbon tetrachloride, a solvent - was still being released into the atmosphere suggesting, the report said, local production and usage over the past decade.

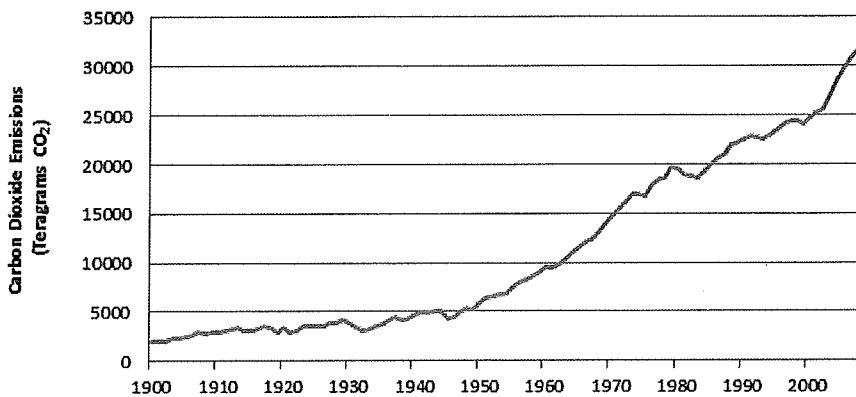
(Reporting by Tom Miles; Editing by Andrew Heavens)



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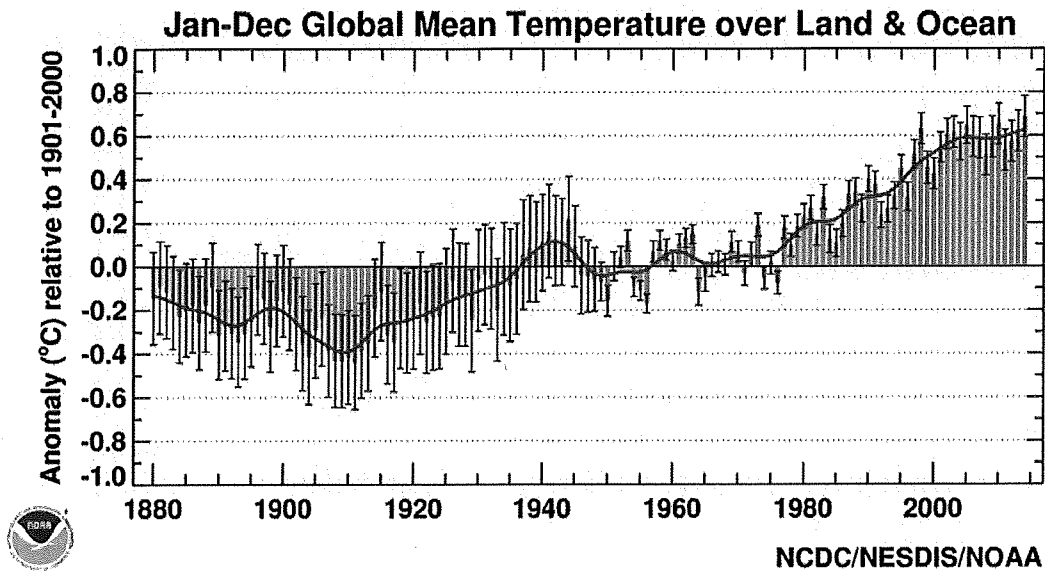


Global carbon dioxide (CO₂) emissions from fossil-fuels 1900 – 2008



Source: U.S. Environmental Protection Agency

Note: U.S. short ton equals 9.07 teragrams



6



Evidence of Global Warming/Climate Change (cont.)

- Earth's atmosphere is getting warmer and will continue to get warmer
 - All sixteen years of the 21st century rank among the seventeen warmest on record (1998 is currently eighth warmest)
 - The five warmest years have all occurred since 2010

7



Evidence of Global Warming/Climate Change

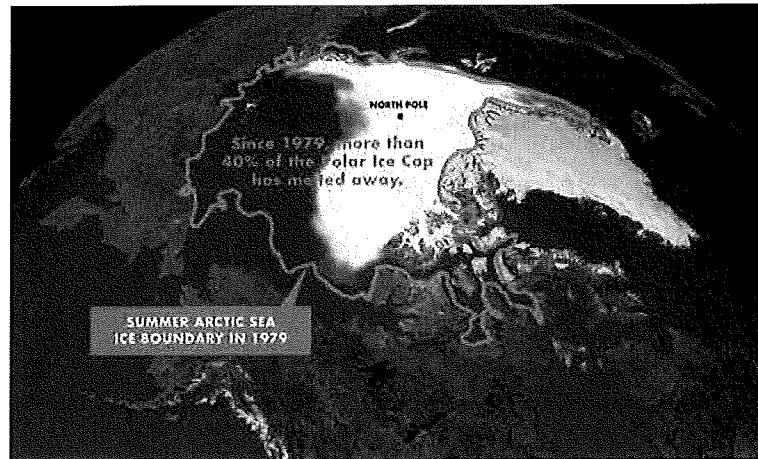


Illustration from NASA

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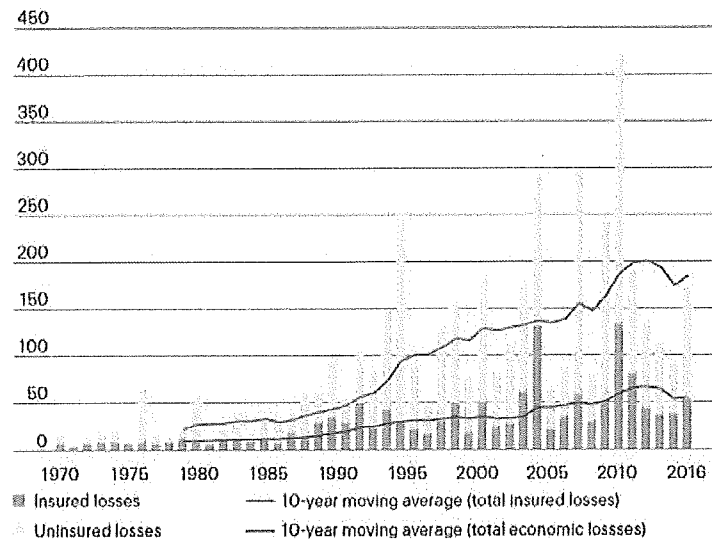
Evidence of Global Warming/Climate Change (cont.)

- Munich Re, since 1960s
 - Frequency of weather disasters has tripled
 - Natural disaster damage = \$330 billion(2017); \$175 billion(2016)
 - Insured losses = \$135 billion(2017); \$50 billion(2016)
- Research predicts
 - More intense rainfall
 - Stronger storms
 - Stronger hurricanes
 - Rising sea levels
 - More severe droughts

9



Insured and Uninsured Global Weather-Related Losses 1970 to 2016 (USD billion), at 2016 prices



Economic losses = Insured + uninsured losses
Source: Cat Perils and Swiss Re Institute.

10



Types of Extreme Weather Events

- Heat waves
- Drought, dust storms
- Wild fires
- Heavy rainfall, flood
- Strong wind, tornado, hail
- Cold temperatures
- Ice storms
- Blizzards

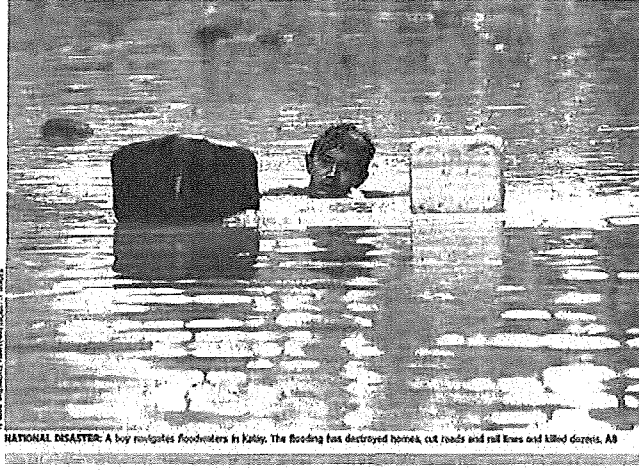
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DJA 17599.20 ▼ 81.66 0.5% NASDAQ 5115.30 ▼ 0.75 RUSSEL 20548.11 ▼ 0.2% STOXX600 399.44 ▲ 0.8% 10-YR TREAS. @ 16/72, yield 2.152% OIL 445.17 ▼ 11.95 GOLD \$1,099.40 ▼ 15.50 EURO \$1.0951 YEN 124.63

Deadly Monsoon Flooding Lays Waste to Myanmar



NATIONAL DISASTER: A boy navigates floodwaters in Kalay. The flooding has destroyed homes, cut roads and rail lines and killed dozens. AP

12



Honey Creek Dam, East Troy on July 12, 2017



Source: National Weather Service

13



Monticello Flooding on February 20, 2018



Source: Monticello Police Department

14



Douglas County Windstorm on July 1, 2011



15



Rusk County Tornado on May 16, 2017



16



Swiss Re Leads Insurance Industry in Finding Ways to Make Communities More Resilient to Extreme Weather

- Creates analytical models and tools to mitigate and price extreme weather events
- Modelled exposure in 100 largest cities
- Identified how New York City can anticipate and reduce damage from future storms

17



Hoboken, NJ Resilience Case Study

- Fifth densest city in U.S.
- 50,000 residents crammed into a single square mile
- History of filling in wetlands
- Hurricane Sandy in October 2012 flooded city. “It filled up Hoboken like a bathtub” says Mayor
- Undertook Resilience Study to prevent recurrence. Developed plan to Resist, Delay, Store, Discharge:
 - Flood Walls
 - Underground cisterns and retention basins
 - Terracing wetlands to act like sponges
 - Parks and parking lots designed to retain standing water
 - Reduce percent of paved surfaces
- Secured \$230 million from HUD

18



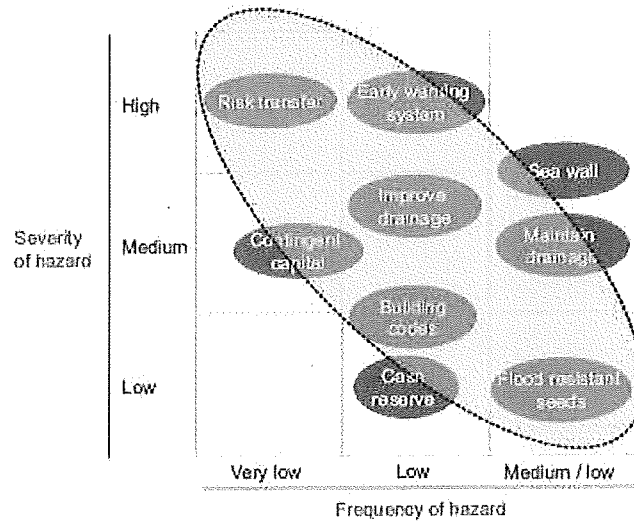
What can Wisconsin Governmental Entities do to make themselves more resilient?

- Anticipate rising incidence of extreme weather events
 - Adapt buildings and infrastructure for new reality
 - Upgrade building codes
 - Build roads to higher standards for heat and cold
 - Separate key risk exposures
 - Upgrade emergency management’s preparedness plans
- Undertake studies to identify options to mitigate more catastrophic exposures such as flood and wind
- Identify sources of grant funding including FEMA

19



A climate risk portfolio — balancing cost-effective measures across a range of hazard events

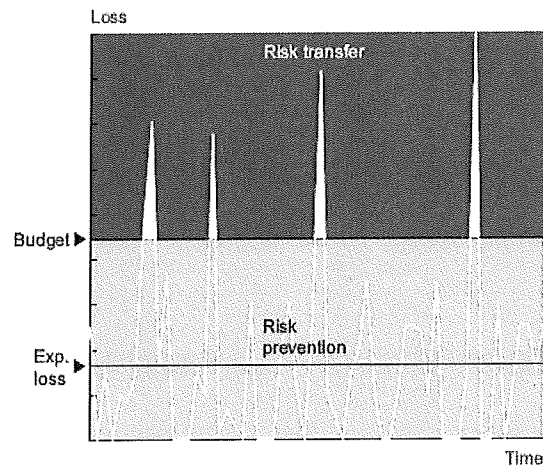


Source: Economics of Climate Adaptation Working Group

20



Complementary Role of Risk Prevention and Transfer



Source: Economics of Climate Adaptation Working Group

21



Outlook for insuring extreme weather events

- Insurance premiums and deductibles will increase
- Availability of insurance could become an issue
- Budget for losses falling under deductibles / coverage voids
- Become more resilient to reduce potential loss severity
- Look to expand the role of public entity pools
- Counties with timberland holdings should consider special pool to finance timber losses from extreme weather events

22



Create decision-making framework for evaluating loss mitigation projects

- Improves government decision-making
- Measures cost-effectiveness of projects
- Facilitates prioritization of projects
- Validates solutions in high-risk locations

Source: Economics of Climate Adaptation Working Group

23



Cost-benefit analysis and ranking of resilience projects

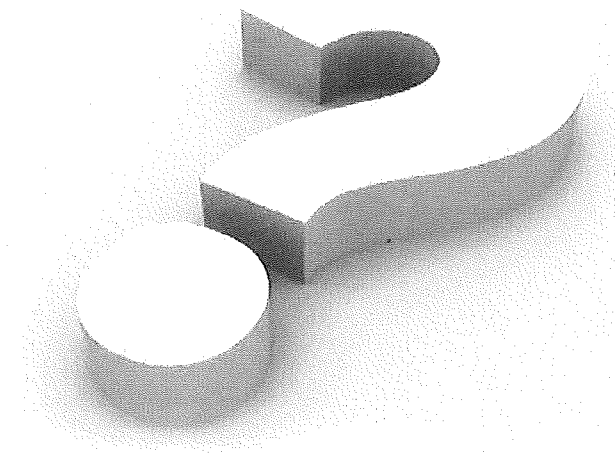
1. Gather costs, averted loss and expected useful lifetime data on each project
2. Evaluate potential effectiveness on each project
3. Determine the applicable discount rate
4. Determine if additional benefits from societal standpoint are derived
5. Calculate cost-benefit ratio to rank order

Source: Economics of Climate Adaptation Working Group

24



Questions?



25



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