

## A bad time to cut back on weather data

*Frank Nutter*

Severe drought in parts of the US, raging wildfires in Greece and the devastating impact of the current hurricane season on Central America are reminders of the crucial role that observations of the earth play in supporting the insurance industry.

Yet recent assessments by respected scientists have warned of the US's declining ability to monitor adequately climate and weather variables around the world. No financial services sector is more dependent on the vagaries of climate and weather – and thus more vulnerable to the risks posed by insufficient environmental information – than property and casualty insurers.

Financial losses from weather-related catastrophes have increased by an average of 2 per cent a year since the 1970s, according to Risk Management Solutions. Private and federal insurers paid \$320bn in claims on weather related losses between 1980 and 2005, according to the General Accounting Office, with private insurers paying about 75 per cent of the total. The number of insured natural catastrophes has doubled since 1990 and insured losses this decade have already exceeded those of the 1990s. In 2005 alone, global insurer catastrophe claims totalled a record \$83bn, 80 per cent of which were from US land falling hurricanes.

Air Worldwide, which specialises in catastrophe risk modelling and technology, estimates that insured losses from natural catastrophes will double approximately every 10 years because of rising construction costs, more buildings, and changes in building design. The Association of British Insurers says average annual losses from the three main storm types affecting insurance markets – US hurricanes, Japanese typhoons and European windstorms – could increase by two-thirds by the 2080s because of climate change.

Until the early 1990s, most insurance coverage pricing was based on historical data adjusted forward for inflation and other economic factors. After hurricane Andrew in 1992, however, the industry began to recognise that, because of climate variability, historical information was potentially misleading with respect to financial effects of future natural catastrophes. Nowadays, insurers rely more on catastrophe computer models that incorporate scientific data on weather and climate trends, and then produce probabilities for estimated costs of future natural disasters.

But these models depend on robust and continuous climate and weather information, the availability of which is jeopardised by an ageing US satellite fleet, delays in the scheduled launches of replacement satellites and the scaling back of critical observing instruments because of budget constraints.

Recent government actions to strip important climate sensors from the National Polar-orbiting Operational Environmental Satellite System – a series of next-generation satellites scheduled to launch in 2013 – could limit our understanding of global climate and weather trends and their impact on the severity and frequency of extreme events.

Also alarming are news reports that hurricane forecasters are at odds about the significance of wind measurements from the ageing Quikscat satellite. Quikscat is past its expected lifetime and no replacement is scheduled before 2016. In June Bill Proenza, the National Hurricane Center's director, said that losing the satellite's data could reduce the accuracy of two-day and three-day hurricane forecasts by 10 per cent and 16 per cent, respectively. If this is true, emergency preparedness, property protection and evacuations would all be seriously affected. But other forecasters say Mr Proenza's assertions are misleading and overblown. Following his comments, Mr Proenza was removed from his position in July.

Such mixed messages reflect a lack of leadership when it comes to the US's commitment to observing the planet. Earth-observing technologies are the responsibility of no single federal agency or high-ranking government official, but are instead stewarded by individuals scattered among multiple agencies. A cross-agency authority should be designated to promote a more cohesive vision for monitoring the earth, one that incorporates the needs of private-sector users.

The reality is that, even under the most sweeping of carbon emissions cutback policies, scientists advise that climate change is likely to increase the intensity of severe events and associated insured losses. A report last year by the Chief Risk Officer Forum, a group of 13 European insurers, warned that "the sheer magnitude of climate change could impact [on] a large number of industries to such an extent that sustainable insurability may ultimately be put into question".

The US's leaders must take immediate action to establish a long-term plan for earth observations and ensure continuity of important climate and weather data. Without a commitment to investing in the instruments needed to monitor the planet's evolving environment, the insurance industry's ability to adapt is severely compromised.

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