global warning

The planet's resources are under pressure and treasurers need to plan for the worst, says Sally Percy

VITAL STATISTICS

80m
the number of people added to the world each year

800m
the number of people on the planet who don't have access to clean drinking water

4%
the cost of pollution and environmental damage in China as a proportion of GDP, according to Chinese government estimates

150
the number of workers at Apple's electronic components supplier in China who threatened to commit suicide in January, in protest at their working conditions

The world is going to get crowded, a lot more crowded. According to the UN's *State of World Population Report*, the planet's total population will surge to 9.3 billion by 2050 and more than 10 billion by 2100. That's up from 7 billion today. The trend is likely to be most pronounced in Africa, where the UN expects the population to nearly triple from 1 billion in 2011 to 2.6 billion in 2100.

On the upside, this is good news for companies as it means an expanding market for their goods and services and a pipeline of fresh workers. On the downside, all these people need to eat, drink, work, travel and live somewhere, putting further strain on the planet's already stretched resources.

The major challenges facing the planet relate to agricultural production, water extraction, climate change and an ever-increasing demand for energy. These affect businesses as much as individuals and they all have an impact on treasury. Treasurers, who are at the forward end of finance and charged with managing the risks their organisations face, need to understand these challenges so that they can plan for them. Today's challenge could be tomorrow's crisis.

Food

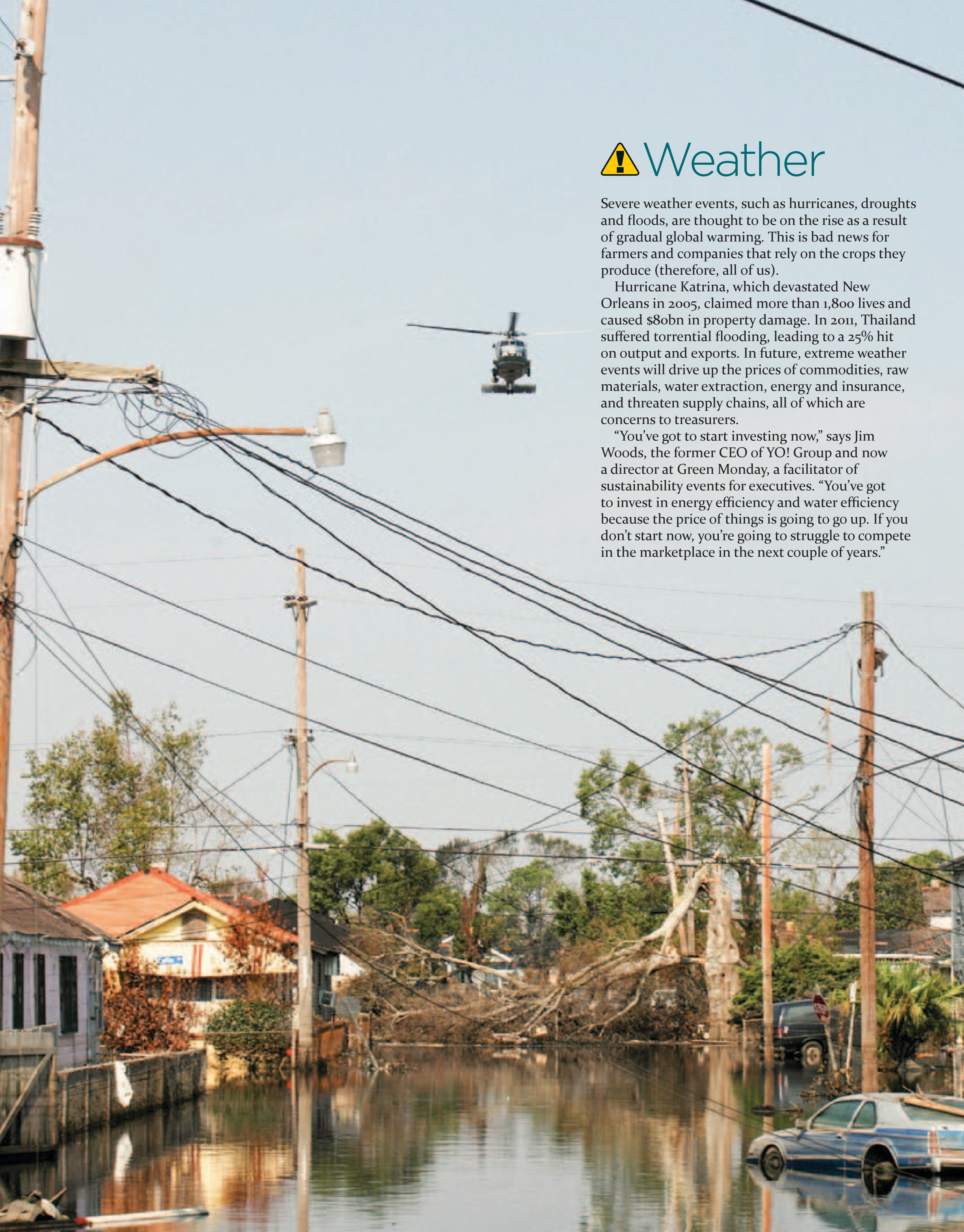
Food is critical for obvious reasons, but unless we change the way we produce, distribute and consume it, food could succeed finance as the cause of the next global crisis.

Already nearly a billion people in the world go hungry (while another billion over-consume), but between 1997 and 2007, the annual growth in world agricultural production was just 2.2%. Meanwhile, soil fertility, biodiversity and water resources are being depleted to meet global demand for food, fodder and bioenergy crops. In many regions, there are large gaps between potential and actual crop yields. According to the Commission on Sustainable Agriculture and Climate Change, an estimated 12 million hectares of agricultural land (which could potentially produce 20 million tonnes of grain) are lost to land degradation every year. To compound the problem, global reserves of phosphate, which plants need to grow, may have disappeared within 50 years.

While agricultural threats are a concern for everyone, they are fundamental business risks for treasurers who work in companies where agricultural commodities are the raw material for their own products.

"If the weather is bad in a country, farming can become an unattractive business and farmers will stop, move to the city and do something else," says Yann Umbricht, head of PwC's treasury group. "It is essential that farmers get a good return so they continue to farm and companies need to plan for the risk of not being supplied."

He adds that another agricultural risk may not be the risk of the product the company buys, but the risk the farmer may grow another product instead. For example, if the prices for cotton increase, the tobacco farmers in one country may stop growing tobacco and start growing cotton instead. This means the treasurer will have hedged the wrong commodity.



Weather

Severe weather events, such as hurricanes, droughts and floods, are thought to be on the rise as a result of gradual global warming. This is bad news for farmers and companies that rely on the crops they produce (therefore, all of us).

Hurricane Katrina, which devastated New Orleans in 2005, claimed more than 1,800 lives and caused $80bn in property damage. In 2011, Thailand suffered torrential flooding, leading to a 25% hit on output and exports. In future, extreme weather events will drive up the prices of commodities, raw materials, water extraction, energy and insurance, and threaten supply chains, all of which are concerns to treasurers.

"You've got to start investing now," says Jim Woods, the former CEO of YO! Group and now a director at Green Monday, a facilitator of sustainability events for executives. "You've got to invest in energy efficiency and water efficiency because the price of things is going to go up. If you don't start now, you're going to struggle to compete in the marketplace in the next couple of years."

Water

Around 75% of the planet consists of water in either liquid or frozen form. The problem is that less than 1% of it is readily accessible and suitable for human use. A report by Bank of America Merrill Lynch described water as "the oil of the 21st century" and it will be arguably the biggest natural resource challenge facing the world over the coming years.

The Water Resources Group believes that water usage will grow from 4,500 billion m^3 to 6,900 billion m^3 by 2030, 40% above the current accessible, reliable supply. And it estimates that annual capital expenditure of $50bn-$60bn will be needed to close the gap. Around 70% of water withdrawals are for agriculture, but certain industries, particularly mining and power generation, are very water-intensive and industrial withdrawals are set to increase from 16% of the total to 22% by 2030.

Last year China felt the economic impact of water shortage when several areas of the country suffered their worst drought since 1954. In the early months of the year, rainfall was down 40% in the Yangtze River basin, which accounts for 40% of China's economic activity. Widespread crop damage forced the country to substantially increase its imports of soft commodities and the direct economic losses associated with the drought have been estimated at over $1bn.

Aldo Bonati, head of research at ECPI, a Milan-based provider of sustainability research, ratings and indices, believes it is the role of the CFO, treasurers and other members of a company's finance team to quantify the risks associated with water. "For example, what is the cost of water inefficiency? What is the cost of water transportation? If a company is regarded as exploiting natural resources by the local population, could the cost of this damage be quantified?"

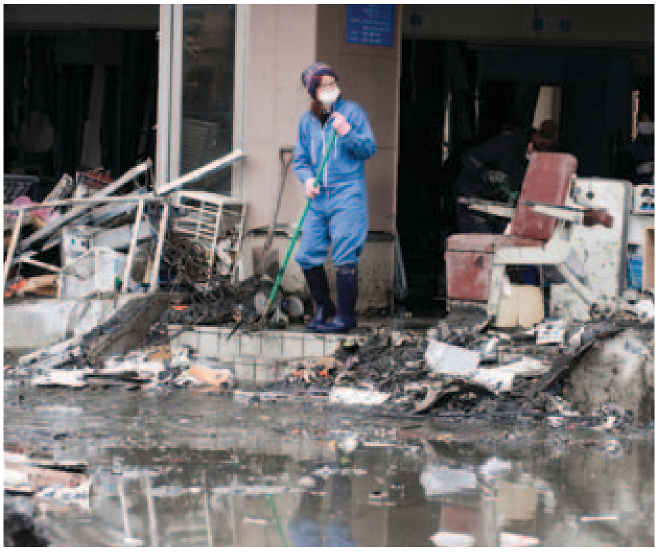
The dugout remains of a dry lake bed near Dongsheng, during the 2011 China drought

VITAL STATISTICS

30%
the proportion of global aviation affected by the volcanic ash cloud in Europe in 2010

14,215
the number of global regulatory announcements in 2011

900m
the number of undernourished people on the planet



Last year's tsunami destroyed large parts of Japan and caused more than $300bn worth of damage

Natural disaster

There have been a number of natural disasters over the past decade, including the 2004 Boxing Day tsunami, the 2005 Pakistan earthquake and the earthquake that destroyed much of Christchurch, New Zealand, last year.

But the disaster with the greatest economic impact was the catastrophic Japanese offshore earthquake in March 2011 that triggered a tsunami. Huge waves battered the Japanese coast and sparked a meltdown at the nuclear power plant at Fukushima, effectively crippling the country's nuclear generation capacity. More than 18,000 people died, more than half a million were made homeless and the cost of repairing the damage is estimated at more than $300bn. Japan is a source for many components, but the disaster hit production, leading to a break in the global supply chain and reducing worldwide output levels. It took six months before supply chains were fully restored, illustrating the risks of high levels of interdependence in the global economy.

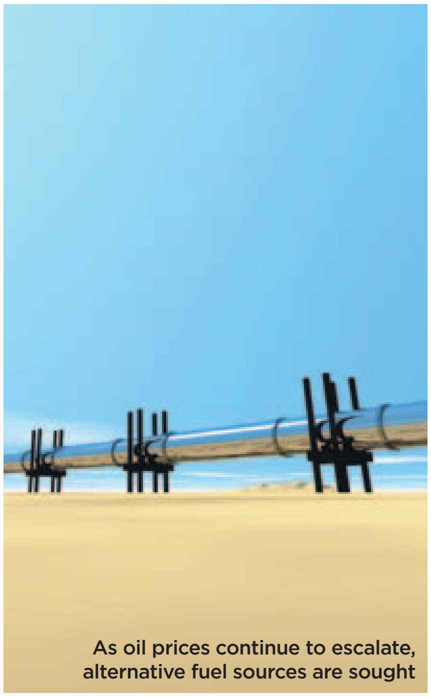
"Companies should be looking at the implications of catastrophic risk," says Umbricht. "You can't plan for catastrophe, but it's the next level down that is important. If all our suppliers collapse because of x, what are the implications for us and what are our plans to address the issues?"

Energy

Unfortunately, there is no end in sight to rising energy prices; they will continue to climb as we run out of the easy supply of oil on the back of high demand from China, India and Brazil. Deutsche Bank has predicted that oil will hit $175 a barrel by 2016. "There is still plenty of oil, but it's more risky and more expensive to extract," says Woods.

In the US, shale gas (a natural gas found in shale rock) has become an increasingly important source of natural gas over the past decade, leading to speculation that it could become one of the world's most important energy sources in the years to come. But shale gas, despite being cleaner than coal, is still associated with significant carbon emissions. Meanwhile, the method of extraction – hydraulic fracturing – is water-intensive and there is a risk that methane leakage from gas wells can contaminate local drinking water.

The rise in fuel prices is one of the factors behind increased social unrest in Europe where austerity measures are starting to bite and unemployment is high. Earlier this year, Greenpeace staged a demonstration at the UK headquarters of Centrica, owner of British Gas, in protest at the £2.5bn profits the company had announced two months earlier.



As oil prices continue to escalate, alternative fuel sources are sought

And Woods believes there will be more protests to come. "The nub comes with rising resource prices and deteriorating economic conditions," he says. "That's what really hurts people. That's a real recipe for social unrest."

The role of treasurers

While treasurers have traditionally been involved in assessing the financial risk faced by companies, they have tended to be less involved in analysis of the operational and strategic risks. "There's nothing new in terms of operational risk. That is already mapped, but it's not necessarily been flown down to treasurers," says Umbricht. This needs to change if companies are to take a holistic approach to the resource problems facing the world.

Further impetus will come from the International Integrated Reporting Committee (IIRC), a coalition of businesses, accountancy firms, regulators, not-for-profit groups and others. The IIRC is managing a two-year 'integrated reporting' pilot programme involving more than 60 companies whose financial, environmental, social and governance information will be combined into one annual report. The aim is to increase transparency and provide a more accurate picture to investors of the social and environmental risks that companies face. If the pilot is successful, expect integrated reporting to be rolled out across the business world, with treasurers under pressure to manage those risks effectively.

"The radar of the risk-management department should be extended to other functions," says Bonati. "There are already companies integrating extra financial sectors into their core business strategy."

Sally Percy is editor of *The Treasurer*

OTHER RISKS

Regulation — more to come

You might think we're heavily regulated now, but it's likely we've seen nothing yet. Basel III, Solvency II, the Dodd-Frank Act, regulation of over-the-counter derivatives and the Foreign Account Tax Compliant Act won't be the last of it.

Research by Thomson Reuters in February found there was a 16% increase in regulatory announcements in 2011 compared with the previous year. Over the coming years, expect to see more energy efficiency regulation and more regulation in emerging markets.

And if the Democrats win the November election, there will be more regulation in the US. The cost of complying with regulation is therefore set to keep rising. And those costs impact business strategy.

A survey by consulting firm Protiviti in May found that more than half of financial institutions had decided not to enter an overseas jurisdiction or had exited one as a result of the cost of compliance with another country's laws and regulations.

Reputation — the highest priority

Research by The Economist Intelligence Unit in 2005 found that reputational risk was the highest priority for senior risk executives above regulatory risk and human capital risk such as skills shortages. And the advent of social media has only served to heighten these risks.

"There is more information and that information is spread more widely," says Bonati. "Companies must be careful about what they do and how they communicate what they do." Bonati identifies issues such as child labour and bad working conditions, particularly in emerging markets where workers are less protected, as probably the greatest reputational risks facing companies right now.