



## 2011 RMS ClimateWise Disclosure

RMS has been involved with ClimateWise since its inception in 2007, demonstrating our commitment to raise awareness of climate change impacts within the industry and broader public arena.

### **1) Lead in risk analysis**

*Support and undertake research on climate change to inform our business strategies and help protect our customers' and other stakeholders' interests around catastrophe loss.*

RMS continues to invest in research on the key implications of climate change for the catastrophe risk modeling of the principal climate perils: tropical cyclone, windstorm, severe convective storm and flood. Based on the development of these models RMS also contributes towards research on climate change adaptation, and the benefit cost analysis of alternative strategies around risk reduction. Our core objectives concern the provision of probabilistic catastrophe loss models for the insurance and reinsurance sectors in which we attempt to quantify the level of activity expected for that peril over the next five years. These same models can then be modified to explore the potential implications of future risk. We are committed to publishing, and presenting the results of our climate change research.

*Support more accurate national and regional forecasting of future weather and catastrophe patterns affected by changes in the Earth's climate.*

RMS engages with a wide range of scientists in the climate forecasting and climate change modeling communities to better understand the impact of natural climate variability and climate change on catastrophe risk. Engagement includes participating in conferences, workshops, committees and advisory boards, as well as collaborating and investing in research in this area. For example, RMS were collaborators and co-authors of a widely cited study, published in February's edition of Nature magazine, on the attribution to climate change of an increased potential for extreme Autumn rainfall events in the UK. See: <http://www.nature.com/nature/journal/v470/n7334/full/nature09762.html>

*Use research and improve data quality to inform levels of pricing, capital and reserves to match changing risks.*

In 2011, RMS released new versions of its two core climate risk models covering North Atlantic Hurricane and Europe Windstorm. RMS meteorologists, climatologists and statisticians devoted considerable time and research to investigating what characterizes the activity rate for each peril in the models. For Atlantic hurricane, RMS continues to show that current levels of activity remain above the long-term historical average, with larger increases for the more intense storms. RMS has actively educated the market and other stakeholders on why an approach to assessing hurricane risk based solely on the historical baseline of activity will understate the current risk of catastrophe loss.

*Evaluate the risks associated with new technologies for tackling climate change so that new insurance products can be considered in parallel with technological developments.*

RMS has continued research on how to model the risk of wind, flood and hail on alternative forms of electricity generation. For the first time, the version 11.0 RMS® Europe Windstorm Model makes it possible to analyze the risk to windfarms in the North Sea and how this risk may correlate with other property losses onshore. In summer 2011, RMS will also undertake a research project on how potential damage costs should be included in estimates of sustainability in building products – and in particular on evaluating the likelihood that the building envelope may get damaged if on a property in the frontline of hurricane risk, as in Florida. It is hoped by this work to have a better idea of what

constitutes 'sustainability' in building products and repairs when faced with potential catastrophe losses.

*Share our research with scientists, society, business, governments, and NGOs through an appropriate forum.*

RMS is committed to sharing its research and perspective on climate change with all stakeholders—academics, business, governments and NGOs. For example, in 2010-2011, RMS presented at a number of external conferences and seminars on climate change impacts, including:

- **EGU 2010 - European Geosciences Annual Meeting**  
May 6, 2010  
Robert Muir-Wood co-convoked a session entitled "Developing Future Approaches to Climate and Geo-hazard Risk Assessment: Relating Disaster Risk Reduction and Risk Transfer".
- **Munich Re – LSE Roundtable: "How can Climate Change Science and Economics better Support the Insurance Industry"**  
May 26, 2010
- **Department of Energy & Climate Change**  
July 21, 2010  
RMS presented on how insurance companies price the risk and uncertainty relating to extreme weather events in the short term, also covering the long term impacts of climate change and usage of climate models.
- **International Conference 'Deltas in Time of Climate Change'**  
September 29-October 1, 2010  
RMS presented on quantifying climate risk at this event in Rotterdam, The Netherlands.
- **Disaster Risk Management in East Asia and the Pacific**  
March 1-2, 2011  
Dr. Robert Muir-Wood presented on "Open Source vs. Proprietary Catastrophe Models" at the Disaster Risk Management in East Asia and the Pacific Distance Learning Seminar Series.

Robert Muir-Wood, Chief Research Officer at RMS, has been an active participant in the managing committee of Climatewise, with particular interests in measuring outcomes of climate change adaptation and identifying how risk transfer mechanisms can be extended to the developing world.

In addition, throughout 2010 and 2011, Dr. Muir-Wood was an active participant in a working group on Insurance and Climate Change for the International Geneva Association, which links the CEOs of the world's principal insurance and reinsurance companies, and has a continuing role in advising the organization on climate-related issues.

## **2) Inform public policy making**

*Work with policy makers nationally and internationally to help them develop and maintain an economy that is resilient to climate risk.*

RMS has continued to invest principal modelers' time in undertaking and disseminating climate change research around the occurrence of extremes, and continues to engage in discussions with

policymakers about the potential impacts of climate change on property insurance, and the benefits of adaptation.

Dr. Muir-Wood has been a lead author on the new IPCC special report on 'Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation', attending several authors' meetings, addressing detailed reviewers' comments and writing substantive sections of Chapter 1 of the report due to be published in early 2012.

RMS was a key participant in a research project developed for the World Bank and published in the World Bank's *World Development Report 2010*, concerning the use of catastrophe loss models to measure the benefits of alternative adaptation strategies for properties situated in areas of rising flood hazard levels in Jakarta and hurricane risk in St Lucia.

In 2011, RMS announced its collaboration with Guy Carpenter to develop agricultural microinsurance for farmers in Mozambique, where the majority of the population depends directly on agriculture for economic subsistence. Funded by a grant from the International Finance Corporation (IFC), a member of the World Bank Group, RMS will help design and implement new and affordable index-based insurance products for flood and drought risks.

Additionally, RMS is currently working on two projects in Asia that will produce a product/platform for pricing and portfolio management of agricultural insurance contracts for small farmers in India, and a model that will assess portfolio losses for crops and perils in specific provinces in China.

*Support government action, including regulation that will enhance the resilience and reduce the environmental impact of infrastructure and communities.*

RMS has played a leading role in a number of initiatives to promote adaptation to the impacts of climate change in order to mitigate catastrophic risks, including participation in an advisory panel established by DEFRA to determine policy issues around sustaining flood insurance in the UK.

*Work effectively with emergency services and others in the event of a major climate-related disaster.*

As the leading catastrophe risk modeler, RMS is often called to support federal and local government agencies in assessing damages to determine response and/or recovery operations. For example, after the devastating impact of Hurricane Katrina in 2005, RMS was called upon by officials from the Federal Emergency Management Association, the U.S. Army Corps of Engineers, and the Office of the Vice President of the United States to provide vital information (loss estimates, damage and wind field footprints) for their post-landfall response plans. A team of RMS catastrophe response analysts is available to react to climate-linked disasters as soon as they happen, developing timely information around the nature of the impacts to the insurance sector.

In addition, RMS has a longstanding relationship with the International Federation of Red Cross and Red Crescent Societies, including annual corporate donation drives, an employee match program, and donation drives after major international disasters.

### **3) Support climate awareness amongst our customers**

*Inform our customers of climate risk and provide support and tools so that they can assess their own levels of risk.*

RMS models are the industry standard for quantifying global climate catastrophe risk. RMS offers catastrophe models in over 55 countries, allowing our clients to price insurance risk, determine the potential for extreme catastrophic losses, and maintain sufficient capital or reinsurance.

RMS engages in regular dialogue with its clients in the insurance industry on the potential that climate change is altering the severity, frequency and geography of extremes. This includes: sharing latest research findings on the implications of climate change for catastrophe risk by peril; whether climate change should be taken into consideration in RMS climate catastrophe models; as well as indications

as to whether there are longer-term implications of climate change on catastrophe risk. We also communicate around the issues of insurability – in particular related to flood risk as well as the benefits of actions taken to mitigate losses. We have also researched climate change liability risk and climate-insurance solutions as a form of climate risk adaptation for emerging markets/developing regions (e.g., micro-insurance and index-linked securities).

*Encourage our customers to adapt to climate change and reduce their greenhouse gas emissions through insurance products and services.*

As a catastrophe modeling firm, RMS does not offer insurance products and services, but provides tools for the insurance industry to help quantify the underlying risks. Through our networks, publications, and participation in forums, RMS engages with stakeholders in risk management and policy on the impacts of climate change on future risk and future insurability, and the benefits of adaptation.

*Increase the proportion of repairs that are carried out in a sustainable way through dialogue with suppliers and developers and manage waste material appropriately.*

Not applicable, as RMS is a catastrophe modeling firm.

*Consider how we can use our expertise to assist the developing world to understand and respond to climate change.*

RMS invests in R&D efforts to help developing world regions understand climate catastrophe risk and options for risk management. RMSI (a wholly-owned subsidiary of RMS based in India), for example, has a modeling team dedicated to undertaking projects for policymakers, NGOs and development banks focused on integrating climate risk management into development policy by enhancing the understanding of climate and climate-related issues primarily in relation to water and agricultural. Broadly, this work aims to: generate better information and understanding on how current climate risk management strategies are coping in response to droughts and floods; develop and demonstrate how a climate modeling framework can be used to identify future climate risks; use this information to help determine the key elements of an adaptation plan that can help improve climate resilience and adaptive capacity; and to raise awareness of the climate change risks and effective solutions among all stakeholders.

RMS has also been a catalyst for the advancement of micro-insurance, and has undertaken quantitative analysis to demonstrate that a micro-insurance system could be both technically and commercially viable to provide coverage against catastrophic risk in rural China. With the appropriate support, micro-insurance could, for the first time, help protect low-income households against major catastrophes through a framework of risk sharing and risk transfer involving insurers, reinsurers, and the government, setting a foundation for the use of micro-insurance for perils such as hurricane, flood and windstorm, as well as earthquake.

RMS currently has two projects under way in Asia, and has collaborated with IFFCO (Indian Farmers Fertilizer Cooperative, the world's largest cooperative) to design and implement a product/platform for pricing and portfolio management of agricultural insurance contracts for small farmers in India. The product will be compliant with agricultural insurance schemes and agricultural risk transfer in India. Additionally, it can be used for insurance product design and transparent agricultural risk transfer.

The product was developed to affordably enhance insurance products for the farmers, and the commercial viability and sustainability for the risk transfer participants. The product prototype was introduced during the monsoon (Kharif) sowing season, and RMS is currently working on an upgraded version for the upcoming Rabi season.

Additionally, RMS is collaborating with the Beijing Normal University (BNU), the Institute of Integrated Risk Management, to develop a product to model portfolio losses for several crops and perils that are uniquely applicable to two Chinese provinces. BNU has gathered and processed the agricultural, meteorological, and loss data, while RMS will engage with model development and validation. The model, covering the Hunan province, is currently in advanced stages of development.

RMS has also been a lead sponsor of an annual conference on microinsurance in Singapore.

#### **4) Incorporate climate change into our investment strategies**

*Consider the implications of climate change for company performance and shareholder value, and incorporate this information into our investment decision-making process.*

Not applicable as RMS is a catastrophe modeling firm and is owned by the Daily Mail and General Trust. (DMGT)

*Encourage appropriate disclosure on climate change from the companies in which we invest.*

Not applicable. In principle, RMS does support appropriate corporate climate change disclosure.

*Encourage improvements in the energy-efficiency and climate resilience of our investment property portfolio.*

Not applicable.

*Communicate our investment beliefs and strategy on climate change to our customers and shareholders.*

RMS actively communicates its views on climate change to its clients and the broader market through direct engagement and through speaking engagements at internal and external events.

*Share our assessment of the impacts of climate change with our pension fund trustees.*

RMS has previously worked closely with DMGT to undertake a "Climate Change Risk and Opportunity Assessment" and review the wider impact of climate change across the Group, complementing the efforts being made to measure and reduce DMGT's carbon footprint. This work consisted of a thorough assessment of climate change risks to DMGT and opportunities to create business value.

#### **5) Reduce the environmental impact of our business**

*Encourage our suppliers to improve the sustainability of their products and services.*

RMS continues to work to achieve a greener office environment (see examples below), and evaluates suppliers in this respect.

*Measure and seek to reduce the environmental impact of the internal operations and physical assets under our control.*

RMS is working to achieve a greener office environment by working with building management at its offices globally to implement recycling initiatives (e.g., paper and cardboard, toner, light bulbs). RMS is also committed to supporting initiatives that reduce employee carbon footprints e.g., carpooling in the U.S. offices, greener taxi operators in the London office, enhancing video conferencing facilities to reduce the need for travel, reducing waste by using water filtration systems in all offices rather than water coolers.

RMS also invests in energy-efficient air conditioning units, and installed motion-sensor lights during a refit of the London office in 2010 to ensure energy is conserved when rooms are empty.

*Disclose our direct emissions of greenhouse gases using a globally recognized standard.*

RMS greenhouse gas emissions are monitored and reported as part of DMGT's wider carbon footprint management processes. DMGT have employed ICF International to carry out a Carbon Footprint Analysis across Group. This exercise has been undertaken every year since 2006. All DMGT divisions and countries of operations are covered. The emission sources included in the Carbon Footprint are as follows:

- **Scope 1 emissions:** direct emissions
  - Buildings gas and fuel consumptions
  - Company owned vehicles
  - Refrigerant gas losses
- **Scope 2 emissions:** indirect emissions resulting from the use of electricity
- **Scope 3 emissions:** other indirect emissions
  - Business travel - air, car, rail
  - Outsourced delivery activities

This year, the emissions factors were updated to calculate DMGT's emissions based on the latest figures provided by the *GHG protocol* methodology and the UK Government guidelines.

The Group's Carbon Footprint was 100,684 tonnes of CO<sub>2</sub>, a decrease of about 21,000 tonnes (17%) compared to the baseline (121,500 tCO<sub>2</sub>). About 15% of this total corresponds to Scope 1 emissions, 62% Scope 2 emissions, and 23% Scope 3 emissions.

DMGT is committed to reducing its emissions and has embarked upon a comprehensive strategy to manage the organisation's Carbon Footprint. The Group has committed to reducing its Footprint by 10% from the baseline year of 2007 by the end of 2012.

*Engage our employees on our commitment to address climate change, helping them to play their role in meeting this commitment in the workplace and encouraging them to make climate-informed choices outside work.*

RMS employees are engaged in the RMS climate change strategy, from managing the business risks posed by climate change, engaging with leading stakeholders in public and private sectors that are helping to shape this issue, and making climate-informed choices in the workplace (e.g. through our greener office initiatives) and beyond.

## **6) Report and be accountable**

*Recognize at Company Board level that climate risk has significant social and economic impacts and incorporate it into our business strategy and planning.*

The RMS Board maintains a total commitment to taking a leadership role in understanding the significance of climate variability and climate change for the insurance sector. From the annual update of hurricane activity rates to the engagement with a wide range of external initiatives relating to climate change policy and information, RMS sustains a strong and authoritative role in the overall climate change business community.

*Publish a statement as part of our annual reporting detailing the actions that have been taken on these principles.*

Action taken is demonstrated by this response.

### **Note to ClimateWise Reviewers:**

## RMS Corporate Structure

Over 1,500 RMS employees serve the global financial markets from offices worldwide, with RMS headquarters in Newark, California, and offices in the U.S., U.K., Bermuda, France, Switzerland, China, India, and Japan. RMS is owned by the Daily Mail and General Trust (DMGT), plc. DMGT is listed on the London Stock exchange and details of major shareholders disclosed in its Annual Report, available at [www.dmgt.co.uk](http://www.dmgt.co.uk). RMS control and ownership remains independent of any individual or company in the insurance or reinsurance market.

Robert Muir-Wood, Chief Research Officer

[robert.muir-wood@rms.com](mailto:robert.muir-wood@rms.com)

+44 20 7444 7700