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Editorial

Managing the Opportunities and Risks of the Early 3rd Millennium

by Walter R. Stahel[+]

This issue of the Risk Management Newsletter *looks at paradigm shifts in the early 3rd Millennium and devotes a large part to the emergence of quasi-regulatory risks. We hope you will enjoy reading it and look forward to your comments.*

In a number of polls, risk managers of all economic sectors are asked each year to list the top risks. For 2012, economic imbalances, societal inequalities, increased regulation and growing competition are among the top risks. Other areas cited by respondents included data privacy and security threats, the competition for talent and labour, better forecasting and scenario analysis, solar storms—but climate change has disappeared as a major threat; some polls also see an elevated role for Chief Risk Officers. These priorities are also valid for insurers.[1]

In addition to these annual risk polls, there exist longer-term hazards of a dormant nature, such as the shift from an industrial economy to a circular economy in the West, a shift of economic power from the North-Western Hemisphere to the Southern Hemisphere—China, India, Latin America, South Africa and Southeast Asia; the economic development of Siberia and the Arctic Ocean being the exception of this trend. Some hazards are linked to the growth of the world population, such as the need to increase food production, the competition for flat land between agriculture, industry and urban development; the competition for water by the same demand categories and the choice between economic growth and safeguarding the natural capital, i.e. biodiversity or the "Global Commons"—the oceans and the atmosphere, including greenhouse gas emissions (GHG). Others are linked to the increasing density of the population at certain hot spots, such as coastal plains.

But whereas these developments are on the radar of most risk experts, this editorial will look at a number of lesser known "paradigm shifts" that have become visible at the change to the 3rd Millennium and which the editor believes will shape the next decades for insurers. These shifts are global and represent opportunities and risks for insurance companies and society—plus synergies, if a common ground can be found; that is, if the objectives of society and economy can be married.

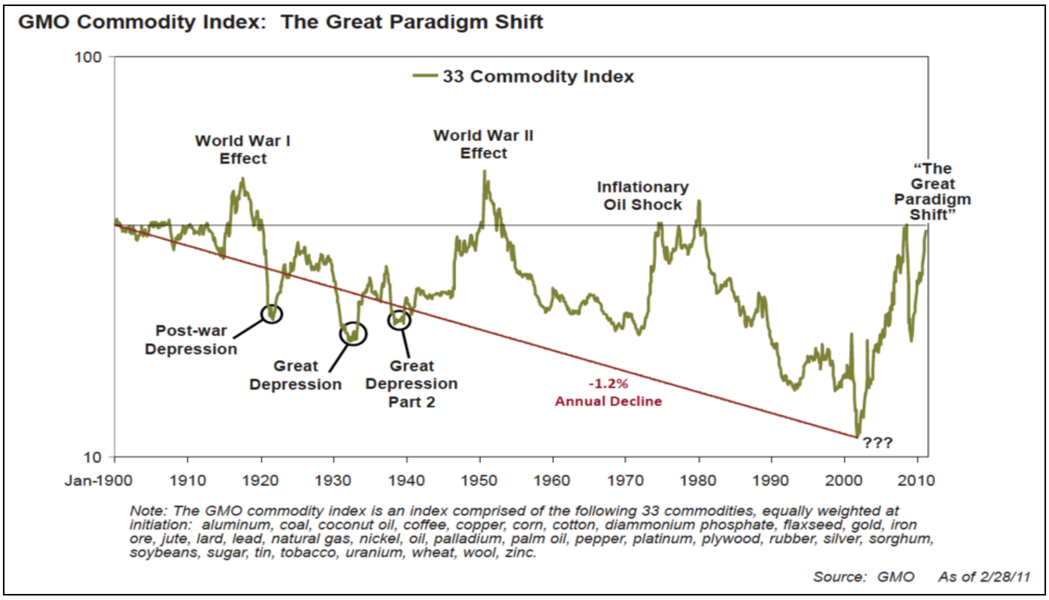
Paradigm shift 1: the new liability dynamics

Liability risks constitute one of the pillars of the insurance and reinsurance business. But the meaning of liability has taken on a new dimension and speed in the last 12 months, with the CEO of Nestlé being accused of co-responsibility in the murder of a Nestlé Trade Unionist in 2005 in Colombia; earthquake scientists of not having correctly forecast a quake at l'Aquila, Italy, in 2009; and Stephan Schmidheiny being convicted of involuntary manslaughter of hundreds of workers and massive environmental impairment by manufacturing asbestos cement products in Italy. The guest editorial by Dr Richard Murray gives details on the evolution of the liability dynamics as well as a look to the future.

Paradigm shift 2: rising commodity prices

For the last 100 years, resource prices for energy and material have constantly decreased; maintaining ownership of materials to ensure access to future resources made little sense. At the beginning of the 21st century, this trend changed, and it is expected that commodity prices in the 21st century will constantly increase—a theory identified and published by the asset manager Jeremy Grantham (2011)[2] who called it "the big paradigm shift", and placed in the political arena by the experts at the European Commission who authored the Roadmap to a Resource Efficient Europe.[3]

Economic actors maintaining resource ownership of their products and embodied resources will, in the future, enjoy a certain guarantee of resource availability and prices, at the same time providing resource security for nations. The threat of resource scarcity gives economic actors incentives to shift to new business models of a retained ownership of goods in a circular economy.



Paradigm shift 3: societal inequalities: mass unemployment, mass migration, old-age pensioner poverty, aggravated by rising sovereign debt

The European Union may be most exposed to societal risk. Unemployment has risen to a new record, highlighting the region's weakening economy and increasing the differences to the labour market development in the U.S. In Euroland, unemployment is 10.9 per cent, the highest since the euro launch in 1999. In southern EU countries, the rise is accelerated by the consequence of austerity measures

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1 See also: CII (2012) *Future Risk, social and economic challenges for tomorrow*, Century Future Risk Series: Report 2; World Economic Forum (2012) *Global Risks 2012-Seventh Edition*, available at *http://www.weforum.org/reports/global-risks-2012-seventh-edition*; JLT (2012) *World Risk Review*, available at, *http://www.jltgroup.com/worldriskreview/*; and Aon (2009) *The Definitive Report on Risk—AON's 2009 Global Risk Management Survey*, available at *http://insight.aon.com/?elqPURLPage=3907.*

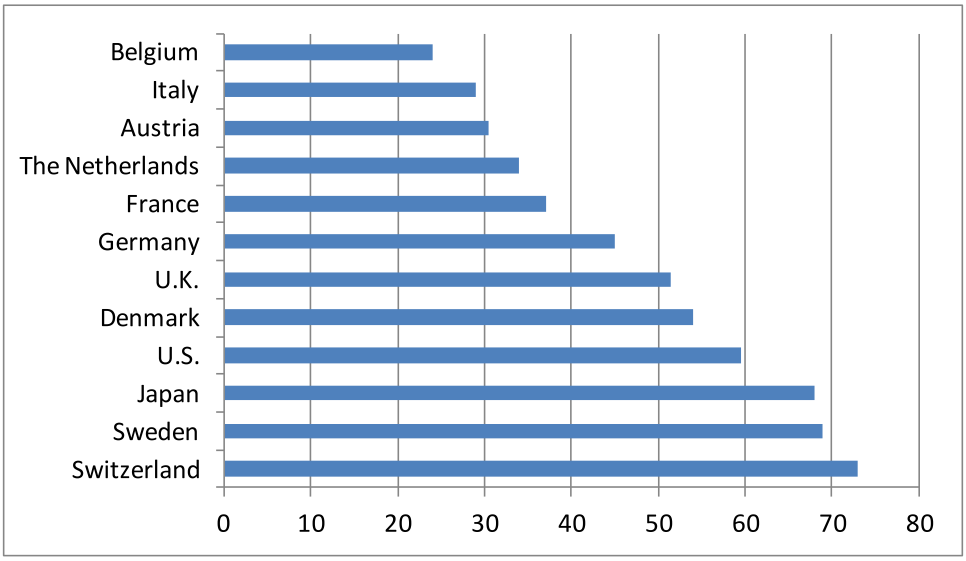
2 Grantham, J. (2011) *GMO Quarterly Letter,* January.

3 European Commission (2011) Roadmap to a Resource Efficient Europe, SEC (2011) 1067 final, available at *http://ec.europa.eu/environment/resource_efficiency/pdf/working_paper_part2.pdf*.

and still unreformed labour markets, as well as climate and economic refugees entering the EU from North Africa.

Persistent unemployment in many countries is still above the “comfort level”, with the percentage of unemployed young people (18 to 30 years of age) now above 50 per cent in Spain and Greece, considerably higher than that of the population as a whole. This constitutes a Damocles’ sword for societal development as emigration will not only leave the young generation without a future but also jeopardise the financing of existing state pension schemes.

Even Germany, regarded as the locomotive of the EU economy, may be slowing; the increase in Germany’s GDP from 2000 to 2007 was €381bn, which is the same figure as the increase in German sovereign debt in the same period.[4] GDP growth may thus not have been created by the economy but by the increase in sovereign debt.



Share of the 55-64 year-old in employment, 1996-2000.
Sources: BSV/OECD.

Another critical issue is the participation of the elderly in the labour market. The share of 55-64 year-old people in work shows big differences, Belgium being worst in class with only 25 per cent. Germany, with 45 per cent, is only slightly better. The U.K., Denmark, U.S., Japan and Sweden have between 50 and 70 per cent of people at work, with Switzerland with over 70 per cent at the top.

It seems that countries with generous state pension schemes provide incentives for people to take early retirement. Private pension insurance may thus play a positive role in motivating people to work longer. If this assumption is correct, it would show a hidden social role of insurance to build resilient communities (see also the contribution by Kathrin Hoppe on this topic, p. 9).

A different but even larger societal uncertainty may be the future of democracy. On the one hand, national democratic systems are questioned by philosophers[5] and, on the other, inter-governmental organisations (IGOs) are curbing the power of elected national parliaments. Paradigm shift 5 below will look more into this topic. In the traditional nation-states, political frontiers were identical to territorial and economic ones. The state had control over its monetary and industrial policy and was the direct partner of the population’s needs and expectations. In the global economy, this is no longer the case and the erosion of the national power is leading to a crisis of democracy. Politicians are in situations without alternatives, depending increasingly on delegating analysis and even decisions to “experts”.

Paradigm shift 4: what comes after industrial economies and their saturated markets?

The linear industrial economy is best in overcoming situations of scarcity of food, goods, shelter. But in a situation of saturated markets, a circular economy is better suited to manage existing stock. In 1980,

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4 Uchatius, W. (2011) “Kapitalismus in der Reichtumsfalle”, *Die Zeit*, N° 46, 10 November, p. 23.
5 Münkler, H. (2010) *Mitte und Mass, der Kampf um die richtige Ordnung,* Berlin: Rowohlt.

the market penetration for durable household goods in France was already above 90 per cent for all social classes.[6] From 1995 onwards, the number of cars scrapped each year In Germany has been roughly the same as the number of cars newly registered. Continued production in saturated markets constitutes a substitution of, not an addition to, wealth, at the cost of "*intensive and often inefficient use of resources*" (European Commission 2011, see footnote 3).

A shift from a linear global industrial economy to a circular regional economy changes economics. For insurance, the concept of depreciated time value in third party liability will be changed to replacement value: repair instead of replace will become an economically preferred business model. The theft of materials, so far limited to copper and other metals, could become a widespread phenomenon, leading increasingly to system breakdowns (e.g. railways, electric utilities).

The most profitable business model of a circular economy is a performance economy selling goods as services.[7] The central notion of economic value then changes from exchange value to utilisation value; the product liability of economic actors is no longer limited to the manufacturing quality at the point of sale (plus a warranty period) but is unlimited—an evolution which has started for some activities (see the guest editorial on liability p. 6). For insurance, the business model of selling goods as services could mean that few fleet management contracts replace numerous contracts with individuals, and/or captives replace insurance companies.

Paradigm shift 5: the emergence of regulatory risks and quasi-regulatory risks

Basel III and Solvency II have shown the unpredictability of new regulations and the necessary investment of time for insurance companies to accompany the developments. These regulations have also shown potential conflicts between national and supranational regulations and a trend to "international governance" solutions.

But whereas these regulatory developments are transparent and negotiable, the same is not the case for the potential risks from quasi-regulatory initiatives. One such recent initiative has been the shift from the sustainability principles of Environment, Social and Economic issues (ECE)—defined in the Agenda 21 accepted by the United Nations (UN) Earth Summit of 1992 in Rio de Janeiro—to the ESG (Environment, Social and Governance) issues. Agenda 21 sought to achieve a holistic balance between economic, social and environmental objectives,[8] and gave the responsibility for doing so to the national governments. ESG, in contrast, has replaced the economic angle (the market) by governance—without stating whose governance it is: civil society, non-governmental organisations (NGOs), IGOs, the UN—or all of those together? The paper by Meghan Orie later in this newsletter (p. 12) looks into this shift and its drivers.

The reason why this development is of high relevance for the insurance sector lies in the "Principles for Sustainable Insurance" (PSI). The PSI have been developed by a drafting committee led by the UN Environment Programme's Financial Institution secretariat (UNEP FI), with the support of the Corporate Social Responsibility (CSR) department of a number of insurers. The PSI is the first Partnership sought by UNEP with an industrial sector, insurance. While previous UN partnerships were limited to one company and concerned mostly sponsoring,[9] the proposed PSI is a global, binding and inclusive partnership with the insurance sector, encompassing all business lines of the companies—risk management and underwriting, product and service development, claims management, investment management—the lot.[10] And the PSI will have to be signed by the CEO or Chairman, fully committing the company. Signatories of the PSI will become members of UNEP and finance the PSI secretariat at

6 Jackson, T. (ed.) (1993) *Clean Production Strategies, developing preventive environmental management in the industrial economy*, Boca Raton: Lewis Publishers.

7 Giarini, O. and Stahel, W.R. (1989) *The Limits to Certainty, Facing Risks in the New Service Economy*. Dordrecht: Kluwer Academic Publishers.
Stahel, W.R. (2010) *The Performance Economy*, Basingstoke: Palgrave MacMillan.

8 See also The Royal Society (2012) *People and the Planet*, available at *http://royalsociety.org/policy/projects/people-planet/report/.*

9 United Nations Office for Partnerships, *http://www.un.org/partnerships/.*

10 Based on the final draft of April 2012—the latest version available at the time of editing this Newsletter.

UNEP. There are a number of reasons why insurance CEOs need to study the nature of ESG issues before signing the PSI:[11]

- Global Compact and the Principles of Responsible Investment (PRI), the previous UN agreements with industry, were voluntary (companies could opt in and out at any time) and open to economic actors of any sector. They were already based on the ESG issues but enabled a choice of relevant ESG criteria.
- The process to develop PSI was done without transparency—the PSI draft documents have not been made available to the public on a (UN) website. And they are specifically tailored to bind the insurance sector and signatory insurers (earlier versions talked about partnership and even co-ownership). The mandatory annual reports on ESG issues will be published on the UNEP website, the amount of manpower necessary to monitor and report ESG issues is unknown.
- ESG issues are defined as non-financial and not material, which can be interpreted as values and ethics. ESG issues are defined and continuously completed by NGOs and IGOs, and governed by UNEP. IGOs are an important aspect of public international law, abandoning the domain of national legislation.
- ESG issues are an amalgam of the wish list of all NGOs, ranging from equal rights for minorities to limiting D&O compensation and banning nuclear, tar sand and shale gas energy. Signatories of PSI also have to engage in promoting ESG issues with customers and the general public.
- The key stakeholders of the PSI are defined as NGOs and IGOs, in addition to governments, regulators and other policymakers. Signatories' tasks include dialogues with business and industry associations, academia and scientific community, as well as the media, to promote awareness on ESG issues across industries and geographies.

Another way to look at the sustainability of insurance could be to monitor financial capital, natural capital and social capital,[12] and their respective influences, avoiding governance issues which touch on societal constructs and values that in the past were delegated to a higher power, such as religions. Islamic insurance has a clear religious basis, but which differs in some details from the principles of other world religions—and is far removed from ESG issues. Does the idea of UN world governance overcome the shortcomings and diversity of religions?

Where are the potential risks for insurers? For PSI signatories, risks could be enforcement of commitments by UNEP FI or other stakeholders, and liability claims addressed to multiple forms of liability policies, including D&O; for non-signatories, it could be in neglecting the best practices principle.

A possible taste of things to come is the 2012 FairPensions study[13] calling on the U.K.'s work and pensions department to investigate poor governance by insurance companies providing contract-based pension schemes to savers. "*The call was triggered by a FairPensions' study of the responsible investment and stewardship practices for the UK's 10 largest contract-based pension providers. This shows that most insurance companies fail to regularly monitor fund managers on their stewardship of investors companies."* However, only one insurer, Aviva, is a signatory to the UK Stewardship Code. Most of the insurance companies polled did not believe monitoring externally managed funds was part of their role.

I wish you a nice summer and look forward to your comments.

[11] The final PSI version will become available in mid-June 2012 only, after the publication of this Newsletter.
[12] An initiative in this sense has been proposed by Prof. Dominique Bourg at Université de Lausanne.
[13] Sullivan, R. (2012) "Insurers 'fail on stewardship'", *Financial Times*, 15 April.

Guest Editorial

Climate Liability Risk: Will it be the Next Chapter in the Global "Blame Game"?

by Richard H. Murray[+]

It has long been accepted that the "compensation culture" that arose in the U.S. about 40 years ago has in this century taken on global dimensions.

A simplistic but accurate description of a compensation culture is a society in which most injuries can be traced to a causal agent from whom damages for the harm may be recovered.

The history of the relationship between injury and compensation may be briefly summarised in four stages.

- The pre-Industrial Revolution era of *"caveat emptor"*—the longstanding principle that injuries occurred without recourse. The concept may offend our sensibilities today, but it was consistent with the economic model and social norms of the many centuries in which it ruled. Life in those times was harsh, and one protected oneself from others as best one could.
- *Caveat emptor* proved a poor vehicle on which to spread commercial activity, far beyond the communities of production. The common law jurisdictions (primarily the English-speaking British Empire) fostered commerce by creating what we came to know in the 20th century as the civil justice system, encompassing "tort law" that awarded damages to those owed a duty of care by those who injured others through negligent breach of that duty. The civil law jurisdictions, with roots in continental Europe, supplied compensation for injury through statutory schemes that generally awarded less than the common law, but set no requirements of proving breach of duty or causation. Both systems supported the commercial needs of the last century.
- As life became generally more sheltered, and the comforts expected by the growing middle class gained political influence, a "compensation culture" emerged that demanded wider and better payment for all manner of injuries, including pain, suffering and behaviour-controlling penalty damages. The existence of liability insurance facilitated these movements. In the U.S., the last second half of the 20th century saw the standards of the civil justice system eroded to add a dimension of wealth transfer. Those operating under civil law schemes found the demands for compensation exceeded the state's ability to pay, leading to various forms of transferring liability schemes onto the private sector and their insurers.
- The new century has been stunned by the frequency and severity of weather-related extreme events which have been partly attributed to climate change and in turn to the emission of greenhouse gasses into the atmosphere. The sharp escalation of widespread suffering and the decades of frustration by those concerned about the effects of global warming have introduced a new era best described as "The Blame Game"—a search for those who could be punished for contributing disproportionately to CO_2 emissions through use of liability claims or criminal prosecution. The two remedies often operate in tandem.

Liability law has thus seen a remarkable set of transformations in a short time. From no compensation for injuries caused by others *(caveat emptor)* we have moved through successive phases of liability for economic loss where the negligent cause was clearly demonstrable (Civil Justice) and then wealth distribution by generous liability for pain, suffering and exemplary damages (Compensation Culture) to the socialisation of losses caused by natural causes (The Blame Game).

At each stage of this evolution the causative forces have been similar: economic, political and social. Each has had its turn of dominant influence. The needs of commerce demanded that buyers receive some protection from distant and unknown sellers. With the rise of the middle class, the scope and amount of available compensation became a political priority. Most recently, the magnitude of human suffering, communicated visually around the world via television and the internet, has stirred passions

[+] Chairman of The Geneva Association Liability Regime Programme.

of sympathy and anger that must be assuaged. At each of these mileposts, it has been the creativity of the legal profession and the pressures on the judiciary that have enabled shifting legal standards to accommodate necessity via liability law.

These are essential conditions for insurers to understand today, because the pace of change has accelerated, the period of latency between event and injury has shortened and the law has grown comfortable with the retroactive application of rules that ease and amplify recovery. For insurers, the result is the ever greater frequency of retrospective application to insurance. A contract of insurance is formed at a point in time, with the price of coverage set by the known exposures of the day. When those exposures are enlarged by shifting legal standards prior to the maturing of latent claims, the cost of the promises contained in the contract rises without commensurate increase in the previously paid premium. One need only consider the painful history of asbestos insurance claims to recognise the risks embedded in the blame game.

We are in the very early days of the blame game. But manifestations of it are evolving rapidly. We consider first the use of criminal law.

Stephan Schmidheiny is best known to the world as a passionate supporter of environmental protection. He was the founder of The World Business Council for Sustainable Development and co-organiser of the 1992 Earth Summit in Rio de Janeiro. Mr Schmidheiny is unrivalled in green credentials. He is also a member of a very affluent Swiss family with a wide variety of business interests including an Italian asbestos producer. When Mr. Schmidheiny became Chairman of that company's Board he ordered the discontinuance of asbestos manufacturing, all of which was ended and cleansed by 1986, six years before Italian regulation banned asbestos manufacture. None of this prevented the Italian government from launching a criminal prosecution against Mr Schmidheiny for personally contributing to asbestos-related injuries and deaths attributed to the company's prior decades of production. In February of 2012 he was convicted and sentenced to a 16-year prison term and a fine of €100 million. His business partner, the Belgian Baron de Cartier de Marchienne, was sentenced to the same punishment. Italy had found a headline-generating and affluent target of blame.

Italy is equally willing to blame Italians. The country established a "Major Risks Committee" of leading scientists to advise on earthquake risks. One would have seen this as a prestigious assignment. Seven members of the Committee might now doubt the value of such prestige. In the spring of 2009 they were asked to advise whether minor trembles in the vicinity of L'Aquila, a medieval town in Abbruzzo, warranted evacuation of the region's population. The experts concluded that evacuation of such massive scale was not warranted. Six days later a major quake struck, killing hundreds. There are no known errors or omissions in the Committee's work, the prediction of seismic events not yet being a science. Nevertheless the seven scientists were indicted on manslaughter charges. The trial began in late 2011 and the ruling is expected for summer 2012.

Hopefully these will remain rare uses of criminal charges to establish blame. But the application of blame-based civil liability claims is more frequent and growing. The following are a few illustrations:

- In the U.S., numerous liability claims seeking damage recoveries have been filed against power companies and other greenhouse gas (GHG)-emitting industries, based on new applications of the old principles of nuisance and public nuisance—principles developed in the common law to address disputes between neighbours. The most noted involves a suit against American Electric Power Company which reached the U.S. Supreme Court in 2011, on the question of whether nuisance principles would support the recovery of damages for climate-related extreme events. In a decision that is unclear in many respects, the Court did declare unanimously that such claims could be brought on nuisance theories in state courts. U.S. claims are also exploring the adaptation of negligence theories for placing climate risk blame—and liability.
- Negligence theories are being explored in the U.K. as well. It has been proposed, for example, that liability should be imposed on all who were responsible for the development of flood plains exposed to climate-related extreme events, whether caused by wind and rainfall or the rise of ocean levels.
- Sea level rise is at the heart of many proposed forms of new liability theories. The prospects for a complete loss of the low lying nation state of the Marshall Islands has attracted much attention. With assistance from The Center for Climate Change Law at Columbia University, U.S.-based attorneys for the islands have lodged a complaint with the Czech Republic on the

grounds that it commissioned Europe's largest coal-fired power plant on the basis of a flawed Environmental Assessment Study. The alleged flaw is the failure to have considered the plant's impact on accelerating the drowning date for the Marshall Islands. Such an assertion has all the hallmarks of a precursor to a liability claim of great magnitude for the destruction of a nation.

Other examples of newly conceived forms of blame and consequent liability abound. But their number and particulars are of less importance than the fact that this pattern of "blame and sue" is becoming commonplace.

Most such claims will fail in their first endeavour. But so did all the early tobacco and asbestos claims. The time between the initial assertion of new tobacco and asbestos claim theories and the first success by settlement was several decades. The blame game has accelerated in relation to climate-related liability, where the first settlement arose out of Hurricane Katrina and occurred four years after the first claim assertion.

The social order of this new century no longer tolerates injury without searching for those to blame and from whom recovery may be had. The search focuses on the sources from which substantial recovery can be obtained. Those two objectives are intertwined. For recovery to take place, we still require a connection between the harm and a target of blame that satisfies today's cultural norms. But those norms are easily satisfied. So the availability of resources for obtaining recovery becomes a factor in assigning blame. There would be no reason for the Marshall Islands to sue Inuit Indians for their contribution to CO_2 emissions, since they have little resource and are themselves seeking a blame and recovery source from the energy industry for their relocation woes. Blame and liability tend to converge at the deepest asset pools, as Stephan Schmidheiny discovered.

The implications of this convergence for insurers are significant:

- A study conducted for UNEP FI by the consultancy TruCost estimated in 2011 that the annual average cost of climate-related extreme events is US$6.6tn, of which over US$2tn annually is attributed to human activity. The study then compared that amount to the profits of the world's 3,000 largest for-profit companies. The circuitry for potential blame and liability is thus identified.
- With the hardship of climate-related damage often falling on the least developed economies, situated in the Southern Hemisphere, and far exceeding available property insurance and public sector resources, the search for additional sources of recoveries via liability claims will be fuelled by powerful humanitarian impulses and mostly fall onto economic actors in the Northern Hemisphere.
- The innovative application of liability theories and the inevitable carbon footprint of all industries threaten insurers with exposure to liability claims that will be pervasive and difficult to avoid through traditional exclusionary clauses.
- Liability claims have a longer latency period than property insurance, exposing insurers to the future lowering of legal barriers with retroactive effect, a condition that was painfully recognised in asbestos claims.
- As social and economic forces carve new channels of accepted liability theories to foster the humanitarian urgencies of windstorm damage, those theories could easily migrate into other aspects of liability exposures well beyond their direct application to climate claims.

The blame game and the ancillary liability issues provide insurers with opportunities for revenue generation through new resiliency-based products, and for demonstrating the value of insurance expertise and pricing tools for the benefit of all. Those opportunities are significant and important. But the blame game and its heritage need to be anticipated and understood as a 21st century phenomenon if insurance is to escape a liability tsunami before the opportunities can be explored.

The Value of Insurance to Society

by Kathrin Hoppe[+]

Insurance is of value to society in several ways but the general awareness of the contributions of insurance to the overall economy and society is low. Policymakers, policyholders and the general public only start valuing insurance once a loss has been incurred and compensation is expected from insurance.

The most significant contribution of insurance to society is the provision of risk sharing, risk pooling and risk transfer abilities and loss prevention measures, which are inherent in the insurance business model and fundamental for a well-functioning economy, but remain largely unseen.

Insurability marks the borderline between the insurers' role as a market player and the nation state's role in ensuring social welfare. Where risks are uninsurable the state has to intervene, but does not have to worry about risks that are insurable and insured.

Insurance thus works hand-in-hand with the state in loss prevention and loss compensation. The insurance business's only handicap is that the "peace of mind" it provides is an unconscious fact, which cannot be measured, unlike assets under management and insurers' contribution to GDP.

The following article highlights some areas of insurance that demonstrate its social role within society.

How does insurance help consumers, companies and society overall?

Insurers insure individuals as well as commercial entities. Private individuals choose an insurance product to avoid being confronted with a financial burden when incurring damage resulting from a certain event (non-life insurance) or when they want to build up a financial reserve for a certain project and/or seek to mitigate mortality, disability and longevity risks (life and pension insurance).

Peace of mind for individuals

The most common non-life product is Motor Third Party Liability (MTPL) insurance. If an individual causes an accident, he/she is obliged to compensate the damages which the non-liable third party has incurred. Depending on circumstances of the accident, the individual would need to pay a high amount of money (ranging from hospitals bills to loss of future income, in addition to the material damage). By taking out MTPL insurance, the individual ensures that the third party's damages are paid, while his/her financial situation is not heavily impacted.

When an individual person takes out life or pension insurance he/she saves money on a regular basis in order to build a capital stock for a certain aim, e.g. a money reserve for a certain project/risk or increased pension benefits. Generally speaking, insurance, therefore, supports the individual in keeping his/her financial situation stable. It decreases the level of unnecessary (individual) precautionary savings and enables capital to be allocated to higher-return projects. Thus, insurance stimulates investment and consumption by reducing the amount of capital bound in relatively unproductive areas. If the same person takes out a traditional banking product instead, he/she can build up a reserve and withdraw the money on demand, but he/she might not have the same access to investment possibilities as insurers have when investing as a global investor. Also if the customer chooses to invest the money in a traditional banking product, he/she might not have built a sufficient reserve to cover his/her losses following an insurable event.

An economic driver and safety net for commercial entities

Similar to individuals, commercial entities can be exposed to claims for damages following a certain event. Manufacturers, for example, can be made responsible for a defective product that caused damages to an individual. Since products are regularly sold in large quantities, a manufacturer can easily face claims from a significant number of consumers and, therefore, be required to pay large amounts in compensation. If a commercial entity were unable to transfer this risk to an insurer by taking

[+] Insurance Regulation and Supervision Expert, The Geneva Association.

out insurance, the company would need to reserve capital for potential liability claims resulting from a defective product. The company would, therefore, have less capital available to invest in new technologies and product innovation. In this way, insurance supports economic growth by taking on risks, which normally the commercial entity would need to bear.

Innovative technologies could not be commercialised and start up enterprises could not take risks without commercial insurance, Airlines could not fly aeroplanes without insurance backing, be it captives as self-insurance or commercial insurance. Only the biggest players can be self-insured and survive major losses, as was the case with BP and its Deepwater Horizon disaster—if the losses are spaced out in time.

Insurance companies also support banks in managing their risks. Consumer credit insurance, for example, is regularly taken out by consumers when taking a consumer credit. In case the consumer dies or is for other reasons not able to repay the loan (e.g. unemployment or disability), the insurance company continues to pay the instalments according to the consumer credit contract. The bank's risk of the borrower failing to pay back the loan is thus significantly reduced and allows banks to invest the capital, which they would otherwise need to hold as a precaution. Since credit insurance provides banks with more security, it facilitates not only consumer credits but also exports of equipment and other investment goods.

The insurance premiums paid by the policyholder cover the insurance company's operational costs and constitute financial reserves for future pay-outs. Since some pay-outs do not occur in the near future (e.g. long-term life or pension products), the capital obtained by insurance premiums can be re-invested in the financial market to generate investment income. Insurers are, therefore, a significant investor in the national and global economy. They make their capital available to private companies (e.g. manufacturers, energy providers, the financial industry) by investing in their shares or buying company bonds. In addition, they support national governments in funding, for example, infrastructure and other projects benefiting the economy and society, in particular by investing in government bonds.

In addition, insurance serves as a buffer in the modern economy. It allows filtering out sudden surges in financial needs linked to a disaster hitting many insured players that might otherwise be pushed into bankruptcy. Insurance allows forward planning with more certainty, avoiding or mitigating specific risks that are deemed to be threatening to the general business process.[14]

The possibility of transferring risk to the insurer provides private individuals as well as commercial entities with a safety net, which allows them to take calculated risks in their entrepreneurial decisions (e.g. product innovation, new investments) and private decisions (e.g. mortgages on homes, a second professional education, improving their quality of life).

And last but not least, insurance acts as a major employer and educator, providing skilled jobs in a number of professions.

How do insurers help to address current societal challenges?

Securing the future of ageing populations

The percentage of people aged 65 years and older in the Organisation for Economic Co-operation and Development (OECD) countries, compared to those aged 15 to 64, will have doubled between 1980 and 2040, reaching a peak of 37 per cent.[15]

The role of pension insurers is increasing in importance, particularly due to the growing elderly populations who live significantly longer today in industrialised countries, due to better living conditions and improved medical treatment. At the same time—despite the fact that a number of national governments have increased the retirement age—early retirement possibilities give people incentives to leave their active working life before the legal age limit. Only the U.S. and since 2011, the U.K. have no legal age of retirement, motivating employers and employees to develop new forms of employment as "silver workers".

[14] Liedtke, P.M. (2007) "What's Insurance to a Modern Economy?", *The Geneva Papers on Risk and Insurance—Issues and Practice*, 32(2), 211-221.

[15] Lafortune, G., Balestat, G. and the Disability Study Expert Group Members (2007) *Trends in severe disability among elderly people: Assessing the evidence in 12 OECD countries and the future implications,* OECD Health Working Papers 26, Paris.

As a consequence, retirement periods have lengthened significantly and retirees, therefore, require more savings to sustain their living standard.

While the current generation of retirees still profits from social security funds, which were largely funded when birth rates and labour market participation rates were higher, today's younger generation will have to rely to a large extent on private funds and personal savings. The existing social security funds based on the intergenerational contract have payment obligations to an increasing number of retirees and are expected to reduce benefits to future beneficiaries. In addition, an increasing number of employers shift from defined-benefit schemes to defined-contribution schemes, shifting longevity risk to their employees.

Part of this elderly generation will live the extra years of life with some level of dependency requiring the use of long-term care (LTC). LTC is a set of services provided on a daily basis, formally or informally, at home or in institutions, to people suffering from a loss in mobility and autonomy in their daily lives. Although loss of autonomy may occur at any age, its frequency raises with age. Unlike standard health insurance policies that primarily pay for the cost of health care, LTC policies are long-term contracts designed to help individuals with physical and/or cognitive impairments pay for assistance with activities of daily life.[16]

Not all national social security systems cover care and assistance costs and if they cover them, they are often not sufficient to meet the actual costs. As a consequence, individual persons have to rely on their own savings or social benefits. Again, especially for the younger generation, which has an even higher life expectancy than the current elderly generation, it is essential to take precautions.

The role of insurance, therefore, goes far beyond its role as financial investor and supporter of economic growth. Already now, but increasingly so in the future, the effectiveness of the intergenerational compact will need to rely on insurance as one of the providers of "savings products", complemented by a mitigation of longevity risk, for the retirement age. At the moment, market penetration of these products is still low so that the insurer is not only the provider but also takes a role in creating awareness of the solutions available.

Natural catastrophes and climate change

Natural catastrophes have been increasing over recent years, and the Southern Hemisphere is particularly exposed due to fragile economies and infrastructures.

The reason is not only global warming and its consequences. The reason is also the sharply increasing concentration of people and property in areas that are prone to natural catastrophes. The populations of coastal regions are increasing constantly and natural catastrophes in third world countries often hit populations living in poverty.

Micro-insurance can contribute to disaster risk management in third world countries. It has been designed to be affordable for the underprivileged and aims to support poverty-stricken households. These products are often designed to address specific natural catastrophe risk in a certain area (e.g. drought-indexed insurance schemes in Malawi, insurance for severe droughts in Ethiopia, etc.).[17]

Natural catastrophes result in ever more significant damages. Not only private and commercial property is damaged, but also infrastructure such as roads, harbours, telecommunication, water and waste water systems and electricity networks. The damaged infrastructure has an immediate effect on the economy. Insurance cover allows for quick reconstruction and reestablishment and, therefore, stabilises the economy as a whole. Interrupted business processes can be covered by business continuity insurance, compensating for the loss of income that a business suffers after a disaster while its facility is being rebuilt.

Understanding the nature and impact of climate risks in advance is extremely effective in minimising the impact of disasters. With heightened public awareness, the insurance industry is working on improving loss prevention and technology development in the areas of natural disaster risks, drawing on its vast experience and expertise acquired over the past decades. The spectrum ranges from developing digital hazard maps, hazard-resilient property to supporting public hazard mitigation programmes. Some

[16] Costa-Font, J. and Courbage, C. (2012) "*Financing Long-Term Care: New and Unresolved Questions",* in Costa-Font, J. and Courbage, C. (eds) *Financing Long-Term Care in Europe*, Basingstoke: Palgrave Macmillan.

[17] UNISDR (2011) *Global Assessment Report on Disaster Risk Reduction.* Available at *http://www.preventionweb.net/english/hyogo/gar/2011/en/home/index.html*

insurers also offer their clients specific risk engineering services which are relevant to addressing the challenge of climate change, for example property risk assessment and improvement advice, business continuity management, business interruption assessment, natural hazards assessments and total risk profiling.[18]

Insurers that are permitted to use risk-based pricing can incentivise adaption that genuinely reduces risk. Where data has a sufficient granularity, it is often possible for insurers to differentiate between risks. The presence of risk reduction methods (e.g. appropriately adapted buildings) can indicate lower damage severity and hence justify a premium reduction.

Conclusions

This article just gives a glimpse of insurers' importance for society. With society facing huge challenges, the insurers' role becomes ever more important. Traditional family structures—especially in developed countries—no longer provide a social safety net as in former times. Individuals carry the burden of loss almost entirely themselves. While insurance cannot replace social structures, it can ease the burdens. In third world countries, insurance can help prevent people in difficult living conditions from suffering additional hardship caused by natural catastrophes. Insurance cannot and should not take over the state's role of addressing societal challenges, but it can assist finding adequate solutions. It is of utmost importance that policymakers realise the potential role of insurers and take them into account when proposing new regulation for insurance and when taking post-disaster adaptation measures.

The UN Shift from Social Research to Protecting the Environment to Governance—from Stockholm to Rio 1992 to Rio+20 to the Principles of Sustainable Insurance

by Meghan Orie[+]

The foundation of dedicated United Nations (UN) programmes shows clearly the radicalisation of the thinking behind the UN outreach process.

The UN Research Institute for Social Development (UNRISD) was established in 1963 as an autonomous space within the UN system for conducting policy-relevant, cutting-edge research on social development. Its mission is to generate knowledge and articulate policy alternatives on contemporary development issues, thereby contributing to the broader goals of the UN system of reducing poverty and inequality, advancing well-being and rights, and creating more democratic and just societies.

The United Nations Development Programme (UNDP) was established in 1965 as the United Nations global development network. It advocates for change and connects countries to knowledge, experience and resources to help people build a better life. UNDP operates today in 177 countries, working with nations on their own solutions to global and national development challenges. As they develop local capacity, they draw on UNDP staff and its wide range of partners. Additionally, the UNDP works internationally to help countries achieve the Millennium Development Goals (MDGs).

The United Nations Conference on the Human Environment, held in Stockholm in 1972, was the first global environmental meeting and set a precedent for international cooperation in addressing environmental degradation. Of the then 132 UN Member States, 113 attended and agreed that they shared responsibility for the quality of the environment, signed a declaration of principles known as the Stockholm Declaration, and approved an environmental fund and an action plan. None of these documents were legally binding in international law, although they pushed for governments to implement laws, policies and strategies to protect the environment. In addition, the representatives

[18] Liedtke,P.M., Schanz, K.-U. and Stahel, W.M. (2009) *Climate change as a major risk management challenge—How to engage the global insurance industry,* The Geneva Association's COP15 Background Paper. Available at *http://www.genevaassociation.org/Portals/0/COP15_background_paper.pdf*.

[+] Research Assistant, The Geneva Association.

established the UN Environment Programme (UNEP), which was formally approved by the General Assembly in 1973, to coordinate action, monitor research, collect and disseminate information, and play an ongoing role in international negotiations about environmental issues.

Twenty years later, 179 UN Members gathered at the Earth Summit meeting in Rio de Janeiro, Brazil, to focus on some of the most critical global issues society faced and continues to face: environmental preservation and inequality. They adopted Agenda 21, an extensive action agenda outlining how countries can ensure sustainable development globally, nationally and locally, taking on board the definition of the Brundtland Report (*Our Common Future,* 1985) *"Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs".* Agenda 21 identifies governments as responsible for ensuring that the world develops sustainably in a way that is compatible with environmental protection.

UNEP's mandate was then defined to encourage economic growth that is congruent with the protection of the environment. UNEP believed that the private sector could valuably contribute to protecting the environment while maintaining the health and profitability of their businesses.[19] At the Earth Summit, the concept for the UNEP Financial Institutions Initiative on the Environment was launched along with a statement by banks on the environment and a bank initiative.

In 1995, UNEP launched a voluntary statement, the UNEP Statement of Environmental Commitment by the Insurance Industry, with a group of insurance and reinsurance companies.[20] This was followed by the establishment of the Insurance Industry Initiative (III) which funded research activities and sponsored awareness meetings, workshops and the annual regular meetings of the Initiative.

In 1997, the bank and insurance statements merged to become the UNEP Finance Initiative (UNEP FI). The Statement of Commitment is voluntary and acknowledges the principles of sustainable development outlined in Agenda 21 and the Brundtland Commission. Signatories pledged to aim at *"achieving a balance of economic development, the welfare of people and a sound environment."* [21]

The shift from the sustainability's ESE issues to the ESG issues

The shift from the economic, social and environmental (ESE) objectives of Agenda 21 to environmental, social and governance (ESG) issues took place in the late 1990s within the UN system: "Governance" replaced "Economics".

This shift first became manifest in July 2000, at the foundation of the UN Global Compact (UNGC), a United Nations initiative to encourage businesses worldwide to adopt sustainable and socially responsible policies, and to report on their implementation. The Global Compact is a principle-based framework for businesses, stating 10 principles in the areas of human rights, labour, the environment and anti-corruption. Under the Global Compact, companies are brought together with UN agencies, labour groups and civil society.

In 2005, the UN Secretary-General, in coordination with UNEP FI and UNGC, invited a group of the world's largest institutional investors to join a process in developing the Principles of Responsible Investment (PRI). PRI is based on the notion that ESG issues, such as climate change and human rights, can affect the performance of investment portfolios and should therefore be considered alongside more traditional financial factors if investors are to properly fulfil their fiduciary duty. The six principles provide a global framework for mainstream investors to consider these ESG issues. The PRI initiative has also been created alongside the Principles to help put the framework into practice.

Focusing on the insurance industry

From 2006 to 2009 UNEP FI conducted a series of research studies on risks and opportunities in the insurance business associated with economic, social and governance (ESG) issues. This initiative led to the development of the Principles of Sustainable Insurance (PSI), a process that was managed by UNEP FI and supported by the CR (Corporate Responsibility) departments of several insurance companies.

Quoting from the March 2011 version of the PSI: "*ESG—the term that has emerged globally to describe the environmenttal, social and corporate governance issues that investors are considering in the*

[19] *http://www.unepfi.org/about/background/index.html.*

[20] These companies included General Accident, Gerling Global Re, National Provident, Storebrand, Sumitomo Marine, & Fire, Swiss Re and some pension funds.

[21] *http://www.unepfi.org/about/background/index.html.*

context of corporate behaviour. No definitive list of ESG issues exists, but they typically display one or more of the following characteristics: issues that have traditionally been considered non-financial or not material, a medium or long-term horizon, qualitative objects that are not readily quantifiable in monetary terms, externalities (costs borne by other firms or by society at large) not well captured by market mechanisms, a changing regulatory or policy framework, patterns arising throughout a company's supply chain (and therefore susceptible to unknown risks), a public-concern focus" (PSI, p. 31).

Twenty years after the Earth Summit at Rio, UNEP FI "*remains the United Nations' only dedicated partnership with the financial sector*".[22] UNEP FI has thus become the spearhead on pushing ESG issues with the financial sector, but with a focus that has shifted from environmental to social and governance issues.

The PSI are currently being proposed by UNEP FI as a voluntary, global and inclusive statement of principles, demanding absolute transparency from insurers—yet the PSI process itself lacked optimal transparency. The PSI are to be signed by the CEOs of insurance companies who agree to incorporate ESG issues into all their business operations and strategies. According to the PSI, this will facilitate insurers' mitigation of increasingly interconnected economic, social and governance risks and allow the signatory companies to flourish.

It is a worthwhile exercise to track the evolution of the PSI from a first version dated March 2011, which was picked up by the author at the October 2011 PSI Regional Consultation Meeting, to the second version, released to The Geneva Association in February 2012 and the final draft of April 2012. The final version will only become publicly available at the Rio+20 Earth Summit meeting in June 2012.

Over the decades between the Stockholm Conference, Agenda 21, the Statement of Commitment and the PSI, three evolutions have occurred.

1) Governments, for the most part, have made little and uneven progress in implementing the laws and policies outlined for them in Agenda 21 (witness the Kyoto Protocol).
2) The UN has expanded the scope and mission of the private sector from engaging in private-sector partnerships to protecting the environment to engaging in broader partnerships and giving equal weight to economic, social and governance issues.
3) Governments' uneven action in implementing Agenda 21's principles has led to the UN engaging in a supranational agreement with the private industry in order to do so. To that end, it may overlook obligations of insurance to sovereign law. Without the benediction of the states, it will be difficult to undertake these principles and expanded responsibilities.

Government obligations: a work in progress

On the one hand, Agenda 21 is a groundbreaking document because it is the first to punctiliously outline crucial government action to sustainable development. It also has a viable approach to how governments can provide economic incentives to protect the environment and makes some specific prescriptions to businesses on how they can contribute to sustainable development. On the other, Agenda 21 divorces countries from the existing realities of international relations, and in doing so assumes that states will prioritise the greater good for the greater number over self-interest.

In fact, the prescriptions of the document expand the obligations of governments in a way that may contradict their traditional obligations or interests. This has led to difficult multi-lateral negotiations and inconsistent action. The Special Session of the General Assembly to Review and Appraise the Implementation of Agenda 21 after Rio+5 recognised that political "short-term interests" were hampering collective action to prevent further environmental deterioration.[23]

An ever expanding global environment agenda

Since Stockholm 1972, the global environment agenda greatly expanded the scope of companies' responsibilities and the stakeholders to whom they are responsible, including climate change because it

[22] UNEP FI (2012) "who we are", *UNEP FI Position Paper on the United Nations Conference on Sustainable Development (Rio+20)—A Financial Sector Perspective*. Available at *http://www.unepfi.org/fileadmin/events/2012/Rio20/UNEP_FI_Position_Paper_Rio20.pdf*.

[23] See *http://www.un.org/ecosocdev/geninfo/sustdev/es5final.htm*

"is bringing greater development and security challenges",[24] greatly increasing the prominence of the private sector's role in sustainable development.

1) From encouragement to collective action:
   - Agenda 21 suggests that businesses *"encourage overseas affiliates to modify procedures in order to reflect local ecological conditions and share information with governments",*
   - the PSI ask insurers to *"…work together with government regulators and other key stakeholders to promote collective action in managing environmental, social and governance issues"* (February 2012 PSI, 6).

The stakeholders to whom insurers are responsible grew from affiliates and governments, to other financial institutions, to more general stakeholders. In a similar way, signatories' obligations expanded beyond Agenda 21's encouragement to modify procedures and information sharing, to PSI's responsibility to promote the management of ESG issues by providing incentives to do so. The level of responsibility expected of the private sphere has increased over time to more of a directive, position of leadership on issues concerning externalities (see definition of ESG on p. 13).

2) From business partnerships to delivery of expertise
   - Agenda 21 asks business to *"create partnerships to help people in smaller companies learn business skills"* (Agenda 21, 49).
   - The PSI suggest *"dialogue with intergovernmental (IGO) and non-governmental organisations (NGO) to support sustainable development by providing risk management and risk transfer expertise"* (February 2012 PSI 6).

The transfer of expertise or knowledge is a key feature in the documents; however, the definition of the "partner institution" has evolved from smaller companies to business relations with customers, partners, regulators, policymakers and the public, and to IGOs and NGOs. The role of business and industry has expanded from knowledge transfer to other private entities or clients to a provision of insurer's risk management and risk transfer expertise to indeterminate stakeholders.

Ethical management and a proactive approach to development have remained a constant prescription in 20 years. What has changed is the scope of companies' responsibilities. While the Statement of Commitment does expand upon signatories responsibilities, it still identifies governments as having the leadership role in the enforcement of obligations and it recognises that these private companies operate in national regulatory frameworks and comply with competition law. According to the PSI, business and industry now seem to have transnational obligations beyond the private sphere and to indeterminate stakeholders.

A supranational agreement

As national governments have inconsistently implemented Agenda 21's principles, the UN began to engage in supranational agreements with the private industry in order to advance an important global environmental agenda. Similar to Agenda 21, the PSI abstract insurance from its sovereign obligations, including sovereign law. Without strong state support, it is uncertain how effectively insurers can undertake the possible actions prescribed in the PSI.

The type of partnership evolved from government and partner to supranational organisation and partner along with the expansion of private sector responsibility:

- Agenda 21 calls on governments to work in a *"broad series of partnerships with international organizations, business, regional, state, provincial and local governments and non-governmental and citizen's groups".* It acknowledges that *"responsible entrepreneurship can play a major role in improving the efficiency of resource use, minimizing wastes and protecting human health and environmental quality".* But Agenda 21 treats business and industry as having a critical role that requires government action to initiate collective action.
- The PSI, as an agreement between a supranational body and the insurance industry, recognise insurance's and the U.N.'s co-responsibility, or "co-ownership" of the principles, transcends national borders and sovereign obligations and expands the environmental agenda but not necessarily with the support of governments.

[24] UNEP FI, *UNEP Statement of Commitment by Financial Institutions (FI) on Sustainable Development*. Available at *http://www.unepfi.org/statements/statement/index.html*.

The prescriptions for business and industry in Agenda 21 have expanded over the years to culminate in the current PSI. The good intentions have remained the same. What has changed for business and industry since Agenda 21 is that PSI bind a whole sector, signatories' responsibilities are greater and stakeholders are more general, while government regulation and laws may or may not support these changes. It will be difficult then for insurers to implement these principles and be protected against abuse without a consistently strong national legal framework.

Comments by the Editor

The hidden part of the PSI iceberg lies less in the PSI themselves but in their reference to the ESG issues. In a global world with a growing population, any new technology and even new applications of trusted old technologies will immediately be met with fierce opposition from some NGOs. A holistic view of risk management (balancing risks and opportunities) or of sustainable development (balancing economic, social and environmental issues) which was at the basis of Agenda 21, is replaced by particular interests.

On the environmental side, safeguarding biodiversity and protecting the environment are achievements of the developed world, with its well-developed infrastructure. But overcoming poverty and the scarcity of food, education, vital infrastructure and physical goods in emerging economies necessitates economic growth and an industrial revolution. This may lead to a clash between emerging economies, led by the BRICs, and industrialised countries at the coming Rio+20 conference. However, even some EU Member States now want to abandon austerity for growth (and higher GHG emissions).

On the social side, the UN Economic and Social Council (ECOSOC) has traditionally been the tool to achieve a balanced development. The PSI tilt this balance by naming NGOs and IGOs as stakeholders and giving them rights to fight inequalities—which are important issues but in a detached singular way. In her paper on p. 9 Kathrin Hoppe shows the social role of insurance as provider of risk sharing, risk pooling and risk transfer: enabler of technological progress abilities and loss prevention measures. These contributions to society are very different from those expected under the ESG issues, and hardly recognised by political authorities.

Yet the PSI may include legal icebergs as well. There is always a risk in extreme event losses that innovative liability theories will be used to seek access to the deep pockets of insurance, often as a vehicle for mounting reputation pressures. However, since the enrolment requirements and the governance terms are not yet fully public, there is a possibility of contract enforcement and substantive liability claims. Rick Murray addresses the shifting social context in which these risks could be problematic in his Guest Editorial on p. 6.

Subsidiarity principle—delegating issues to the lowest level of power—or global governance?

ESG raises the issue of governance. More regulation may not be the best solution, and a "war against the successful" may not necessarily help the less successful. In a global world, the temptation of self-elected representatives to fight for the rights of the "suppressed without a voice" may put global governance over the democratic self-determination of nations. The issue of "just" directors' compensation, for instance, can be solved by shareholders and need not be supervised by UNEP's PSI.

The role of science and technology could be seriously impaired by an attitude of absolute conservation. Yet applications of new technologies, such as exploiting tar sand oil and shale gas, are exploited in some democratic countries, not in others.

Internet is used as an example by NGOs to show how new arrangements based on the principle of subsidiarity could exploit the innovative and democratic potential of the internet. Subsidiarity could equally be applied to the PSI instead of global governance.

Could the ESG issues turn out to be the Achilles' heel of the PSI? Or the beginning of the end of an insurance industry built on risk-based premiums?

New Major Publications by The Geneva Association

The Geneva Reports – N°5

March 2012

Extreme events and insurance: 2011 annus horribilis

Editors: Christophe Courbage and Walter R. Stahel (The Geneva Association)

Objectives

The year 2011 confronted us with a series of extreme events including the 11 March Japanese earthquake, the Australian flood, the Chilean and New Zealand earthquakes, the U.S. tornadoes. These extreme events entail huge consequences in terms of human and economic losses but they also have important repercussions for the insurance industry. This report aims first at presenting the insurance's roles in managing extreme events and the mechanisms that make these extreme events insurable, both by the public and private sectors. Second, it provides a detailed picture of the main extreme events that occurred in 2011 and analyses their impact on local insurance markets as well as the lessons learned to efficiently manage these risks.

List of Contents

Forthcoming Books and Call for Papers

Call for Papers

The Geneva Association is pleased to announce in coordination with
the World Bank/Global Facility for Disaster Reduction & Recovery (GFDRR)
Disaster Risk Financing & Insurance Program

a special issue on

Disaster Reduction and Extreme Events

in

The Geneva Papers on Risk and Insurance—Issues and Practice

(July 2013)

We encourage you to submit contributions related to the following areas:

- Development of disaster risk information systems (e.g., hazard and vulnerability databases, risk modeling and mapping, etc.) at sub-national, national, and regional levels and their application for improving mitigation and preparedness efforts, including financial preparedness.
- Policy strategies for risk mitigation and preparedness (including financial preparedness) for extreme events, *such as economic and legal rationales for these policies and their efficacy and enforceability at different levels of governance.*
- Implementation of risk mitigation and preparedness (including financial preparedness) strategies for developing and developed countries, *including regional approaches*.
- The role of risk financing and insurance strategies and instruments in disaster risk reduction, *including issues of insurability, incentives promoting or detracting risk reduction, cost efficiency, and public and private roles and responsibilities.*
- Comparison of costs and benefits of different disaster risk financing and insurance instruments, *including cost efficiency, time efficiency for payout following a disaster, indemnification of expected losses, etc.*
- Disaster risk management: comparison of roles and responsibilities of different international institutions, public, private, and non-governmental.

Suggestions for other topics will be considered by the editors.
All contributions will go through a refereeing process.

The Guest Editors for this Special Issue are Christophe Courbage, Olivier Mahul (The World Bank) and Walter Stahel. Papers should be submitted electronically via the website of *The Geneva Papers* (*http://gpp.msubmit.net/cgi-bin/main.plex*) by **1 November 2012** at the latest.

For further information on this special issue, please contact Samantha Solida at
samantha_solida@genevaassociation.org.

Ocean Warming Report

"Warming of the Oceans and Implications for the (Re)Insurance Industry"

This report is written under the guidance of the CR+I WG, with Falk Niehoerster as editor; it will be an edited report with invited experts. Its publication is planned for the end of 2012.

Global oceans and their currents are of fundamental importance for the storage and distribution of the solar energy absorbed by the climate system. By transporting vast amounts of energy and being the main source of water in the atmosphere, oceans determine weather patterns and provide what is needed for the development of extreme events. Understanding the complex interaction between oceans and the atmosphere is the key to understanding the distribution, frequency and intensity of various extreme events.

Recently, improved observational records provide new evidence of the warming of the oceans and the distribution of energy within them. A warming trend is detectable and, as climate change progresses, will continue to change selected but relevant metrics for extreme events away from what we have observed over the past century.

Contents:

1) Evidence for ocean warming since mid of the 20th century
2) The impact of ocean warming on extreme events: sea level rise; modes of variation—ENSO, NAO; tropical cyclones—the strongest get stronger; extra-tropical winter storms; monsoon; hydrological events—wet gets wetter; coral bleaching; complex interactions; links to geophysical risks
3) Impact of ocean warming on the global insurance industry
4) Insurability/Asset Management
5) Public policy

Liability Report 2012

A forthcoming publication, to be published at the end of 2012, will study a number of liability issues including the implications for insurers of the Dodd Frank Act in the U.S., the Foreign Bribery legislation in the U.K., the Collective Action movement in the EU and the class action legislation being adopted in developing economies. Another topic will be the rapid rise of litigation funding by third party investment groups and investment companies.

The publication will be a volume of chapters authored by members of the CR+I Liability Sub-Committee, and edited by Richard Murray, its Chairman.

The report is work in progress, details will be published in the next issue of this Newsletter.

The Geneva Association Conferences

The M.O.R.E. 26 Seminar on

Evaluating UNISDR's (GAR) Risk Model

29 May 2012—RMS, Risk Management Services, London

The UN Global Assessment Report on Disaster Risk Reduction (GAR) Risk Model Review Meeting is organised by the United Nations International Strategy for Disaster Reduction (UNISDR) and The Geneva Association, and hosted by RMS London.

Exceptionally, the M.O.R.E. 26 Seminar is by invitation only.

9th Geneva Association Health and Ageing Conference

Genetics and Insurance

8-9 November 2012, Stockholm

organised by The Geneva Association, jointly with and sponsored by Länsförsäkringar AB

With the sequencing of the human genome, a map of all the human genes has been completed. Not only will it provide clues to the understanding of human biology, but most importantly it can revolutionise the diagnosis, treatment and even prevention of a number of diseases. In particular, gene therapy and pharmacogenetics open new and promising perspectives on curing patients. Genetic testing makes it possible to predict how likely a person is to develop a particular disease and offer access to personalised prevention.

At the same time, the availability of genetic information raises many ethical, legal and social concerns and, in particular, the issue of genetic differentiation or discrimination. This is especially relevant for the insurance industry as genetic information can be a valuable tool in risk classification, particularly for health and life insurers. Risk classification is the basis of insurance operations as it allows insurers to fight against adverse selection, and it improves their ability to predict expected loss and to set premiums accordingly. The use of genetic information by insurers generates controversy as it is widely regarded as negative for consumers on the grounds of fears of discrimination, privacy issues, loss of employment and confidentiality.

The aim of the conference is to better understand the nature of genetics and how it can influence insurance, its function and its role in covering risks. In particular, it will address, but will not be limited to, the following topics:

- Medical aspects of modern genetics (gene therapy, gene technology, pharmacogenetics, genetic testing, personalised prevention)
- Legislative aspects of using genetic information by insurers
- The role of genetics in underwriting
- Genetics and risk classification, social justice versus actuarial fairness
- Ethical issues linked to the use of genetic information
- Public perception and awareness of genetic information
- Liability risks linked to the use of genetics

Participants will come from insurance and reinsurance companies, universities and related institutions. There is no conference fee. The conference will only comprise a limited number of participants to guarantee an active exchange of opinions and animated discussions.

Should you be interested in contributing to or participating in this conference, please contact *christophe_courbage@genevaassociation.org*.

Past Risk Management Conferences

The 3rd CR+ I Seminar on

Interactions between the Private Sector and Asian Policymakers on Mitigation and Adaptation for Extreme Events and Climate Risk in Asia

18 October 2011, NTU Singapore

The Geneva Association's Risk Management Programme organised this Seminar jointly with the Institute of Catastrophe Risk Management (ICRM) in the Nanyang Technological University, Singapore.

Climate change brings new risks but also new opportunities for the economy in general and the insurance sector in particular. Most of the present research and publications are euro-centred, but the impact of climate risk on Asian regions could be severe and disproportionate with regard to its *per capita* greenhouse gas (GHG) emissions.

- The potential impacts of climate risk call for mitigation and adaptation measures. These differ according to a country's topography, demography and degree of economic development.
- Many Asian countries are characterised by a high vulnerability of their population with regard to climate risk. The contributions of the insurance industry to help mitigating these impacts are unclear, as well as the scope for joint initiatives with political authorities and other economic actors.

The Seminar was structured in two workshops during one day. The proceedings were published in the *Etudes & Dossiers* °381, November 2011.

The 10th ART OF CROs, Annual Round Table of Chief Risk Officers

12-13 April 2012, The Hague, Netherlands

The meeting was organised jointly by The Geneva Association and Aegon, and sponsored by Aegon.

The programme was conceived by Hans Peter Würmli, the Chairman of the CROs Networks of The Geneva Association, and had presentations and discussions on the following subjects:

Thursday, 12 April 2012

Morning Session: Emergency Preparedness and Crisis Management
Afternoon Session: Risk and Product Management

Friday, 13 April 2012

Morning session: Regulation and Accounting Standards

The Annual Round Table of Chief Risk Officers are open to all CROs of The Geneva Association members.

The 11th ART of CROs will be held 12 -13 June 2013 in Hannover, sponsored by Hannover Re.

Miscellaneous Information and Prevention News

2012 is the anniversary of many disasters

100 years ago, on 15 April 1912, the "unsinkable" Titanic sank on her maiden voyage after a collision with an iceberg, with the loss of 1,500 lives. This disaster led to a revision of the regulations, requiring that a sufficient number of life boats for all passengers were necessary on all sea-going vessels.

50 years ago, on 16-17 February 1962, the great flood of Hamburg had 315 victims and made 60,000 people homeless. The material damages were considerable: 6,000 houses were destroyed; substantial parts of Hamburg's infrastructure were lost and had to be rebuilt: railway tracks, roads, electricity networks—even the dykes which were supposed to protect Hamburg.

25 years ago, on 1 November 1986, a fire broke out at a Sandoz chemical plant in Schweizerhalle near Basel. The fire led to an environmental disaster as 20 tonnes of toxic foam made it into the Rhine River, with the water sprayed on the fires, and polluted the Rhine down to its estuary in the Netherlands.

20 years ago, riots broke out on 29 April 1992 in South Central, a district of Los Angeles populated by many Afro-Americans, after four policemen accused of mishandling Rodney King on 3 March 1991 were acquitted by a criminal court. The riots continued for several days, destroying large urban areas and causing 53 casualties. The events of South Central led to a reorganisation of the L.A. police department, which today employs more black policemen and has the trust of large parts of the population.

The fact that few disasters have a long-term impact can be shown at the example of the nuclear accident which had happened at Chernobyl in 1968, 26 years ago.

The conservation effects of Chernobyl 26 years on

The Chernobyl nuclear disaster is still having an impact on local biodiversity more than 25 years after the event, according to a new study. [25] Regarded as the world's largest ever environmental disaster, the explosion at the Chernobyl nuclear plant in Ukraine in 1986 contaminated 200,000 km^2 of land in eastern and central Europe. The full extent of the environmental and biological damage caused is still uncertain. Although a recent assessment concluded that the Chernobyl Exclusion Zone contains increasing numbers of rare species, the researchers of the new study argue that this claim is unsubstantiated because it is not based on published scientific data.

The researchers surveyed bird numbers over three years across 731 locations in Ukraine and Belarus. This revealed that rare birds, such as the globally threatened aquatic warbler, have been disproportionately affected and are generally only found at sites with low radiation levels. Common birds are more widespread across all sites. Rare birds are also restricted to areas with a high species diversity, which suggests that rare species respond differently to radiation than common species.

Most new mutations are thought to be harmful but they occur frequently in plants and animals, even under normal conditions. Some mutations result in death, which prevents these mutations being passed on to new generations, while others may reduce an organism's likelihood of reproducing. In either case, species abundance and therefore conservation status, can be affected. In humans and other vertebrate species, three new mutations are estimated to occur per egg or sperm. The Chernobyl disaster is thought to have increased mutation rates to 20 times their normal level in some species.

The researchers were able to tentatively suggest that, through breeding and migration, harmful mutations could by now have spread long distances over many generations, making their way into western and southern Europe. However, they also found evidence to suggest that species with high levels of mutations did not disperse them as far. They say it should be possible in future research to track the movement of mutations away from Chernobyl over time.

Other future concerns include the movement of radioactive materials from the Chernobyl site to elsewhere—in particular, as a result of forest fires and fires deliberately started by farmers to burn crop stalks. Fires in the region have been known to carry radioactive material to Vilnius, Lithuania, in 2002 and Obninsk, Russia, in 2010.

The CR+I Project of The Geneva Association: Climate Risk and Insurance

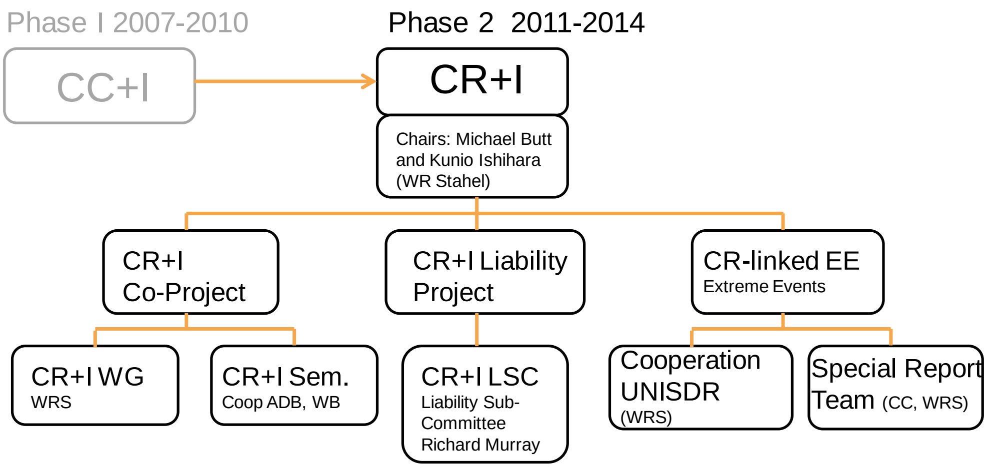
The CR+I Project of The Geneva Association Work Programme 2012-2014

The theme of the new CR+I (Climate Risk and Insurance) Project is "Sustainability by increasing resilience to climate risk and related extreme events".

The focus of this project will be to find ways for insurance to adapt to and manage climate risk and related extreme events. The CR+I project uses a proactive approach.

[25] Møller, A.P. and Mousseau, T.A. (2011) "Conservation consequences of Chernobyl and other nuclear accidents," *Biological Conservation*, 144: 2787-2798. Contact: *anders.moller@u-psud.fr.*

CR+I Project Structure



The main tool to develop the CR+I Project has been the new CR+I Working Group (CR+I WG), chaired by Michael Butt and Kunio Ishihara and managed by Walter R. Stahel. It held its first workshop on 14 November 2011 in London, the second on 19 April 2012 in Munich. The third CR+I WG workshop is planned for mid November 2012 in Geneva. The Working Group has about 25 members.

The annual CR+I Seminars are developed in cooperation with changing partners, with a focus first on Latin America, then on Asia. The 3rd CR+I Seminar was held in Singapore in October 2011, the 4th CR+I Seminar is planned for November 2012 in China or South-East Asia.

The CR+I Liability Project has been developed by the CR+I Liability Sub-Committee, chaired by Rick Murray, seconded by Lindene Patton (ZIG). A first report on Liability Dynamics is scheduled for December 2012.

The CR-linked Extreme Event Project has developed a cooperation with the UN International Strategy for Disaster Reduction (UNISDR) in 2012, resulting in the organisation of the M.O.R.E. 26 Seminar, held in London on 29 May 2012. It will evaluate UNISDR's world risk model through a group of leading modelling experts under the direction of Dr Robert Muir Wood, chief scientist of RMS London and member of the CR+I WG of The Geneva Association.

A dedicated second activity of the CR+I WG is the writing and publication of Special Reports on Extreme Events.

The first Special Report—*Extreme events and insurance: 2011 annus horribilis*—was published on 11 March 2012 as Geneva Report N° 5. It was edited by Christophe Courbage and Walter R. Stahel from The Geneva Association, with contributions by several members of the CR+I Working Group (WG) of The Geneva Association.

In autumn 2012 a second Special Report will present case studies on the cooperation between insurance and governmental risk management, both successes and shortcomings. The report's objectives are (1) to collect a description of short case studies that describe situations in which regulatory regimes, public policy, government action or inaction led to problems in risk coverage and/or insurance market failures (or successes) to the detriment of citizens (or communities), and (2) to draw lessons from the failure/success and formulate possible solutions for governments to avoid such problems in the future. The research is done by Meghan Orie, Research Assistant of The Geneva Association, and outside researchers, under the direction of Walter R. Stahel and Andrew Maskrey of UNISDR. The report will probably be an edited volume published jointly by UNISDR and The Geneva Association at the end of 2012.

A third Special Report on ocean warming is being written by members of the CR+I WG and should also be ready for publication by the end of 2012. The lead author and editor is Falk Niehoerster, Science Program Manager of the Risk Prediction Initiative (RPI) at the Bermuda Institute of Ocean Science, St George's, Bermuda, and member of the CR+I WG of The Geneva Association.

History and outlook

The redefined CR+I Project continues to build on the work of the earlier CC+I Project which had a more scientific focus. Its activities culminated in:

- the Kyoto Statement; [26]
- the Geneva Report N° 2: *The insurance industry and climate change—Contribution to the global debate;* [27]
- the Joint Statement of The Geneva Association, UNEP FI, MCII and ClimateWise: *Global insurance industry statement on adapting to climate change in developing countries;* [28] and,
- the series of seminars, workshops and conferences which The Geneva Association has been organising for many years.

The CR+I Project has a much broader and applied focus than the CC+I Project, notably on climate risk, including adapting to and managing extreme events. Its main emphasis is on how to increase resilience to extreme events; we therefore have to be sensitive to regional differences.

Developing closer contacts with authorities in charge of disaster reduction, such as civil protection and emergency management offices and national CROs—where they exist—will help, as these structures reflect the regional differences in risk perception and management. In addition, contacts on the international level will continue.

The CR+I Project incorporates a Liability Sub-Committee, which focuses on climate change liability. This topic has attracted a rapid growth and diversification, lately through "Litigation Funding" by third-party investors, which could be another transforming force influencing the role of liability as a social, economic and regulatory force over the next decade, according to Richard Murray, Head of the Liability Sub-Committee of the CR+I Project of The Geneva Association.

Topics of the CR+I Project

The CR+I programme will consider the interrelationship between:

1. climate risk and insurance;
2. climate risk and litigation issues;
3. climate risk linked to extreme events; and,
4. vulnerability of technical systems to climate risk.

1. Climate risk and insurance

Adapting to climate change in emerging economies is one of the biggest challenges for modern insurance. Our "Global Insurance Industry Statement",[29] jointly with ClimateWise, MCII and UNEP FI shows some of the options open for new solutions.

The new challenge is public-private cooperation (private sector and policymakers) on mitigation and adaptation to extreme events, including climate risk.

The tools we hope to develop in the CR+I Project include cooperation through the CR+I seminars and publications as well as a direct dialogue with policymakers, such as UNISDR.

2. Liability issues concerning climate risk and extreme events

Climate change litigation is a major threat to economic development and insurance in particular. Climate change would be the first global liability issue driven by politicians (social global justice) and class-action lawyers trying to construct new rules based on indirect mechanisms.

Previous major liability threats, such as asbestos and tobacco, were limited in scope (number of potential victims and geographical area), ruled by scientific proof and driven by creative lawyers looking for new areas of activities.

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[26] See *http://www.genevaassociation.org/Portals/0/Kyoto_Statement_signed_14July09.pdf.*
[27] *The insurance industry and climate change— Contribution to the global debate,* at *http://www.genevaassociation.org/PDF/Geneva_Reports/Geneva_report[2].pdf.*
[28] See *http://www.genevaassociation.org/PDF/General_Information/Developing_World_Statement.pdf*.
[29] *http://www.genevaassociation.org/PDF/General_Information/Developing_World_Statement.pdf.*

One of the new challenges is to understand the new liability drivers. The tools to be developed will hopefully enable the insurance sector to move proactively. This analysis is done by the CR+I Liability Sub-Committee (CR+I LSC).

3. Climate risk linked to extreme events

The CR+I project will develop a number of programmes in the medium-term to cooperate with governmental organisations in fostering resilience to climate risk and extreme events. This will include regional workshops and seminars with UNISDR. An agreement has also been signed with the World Bank but was put on hold when budgeted new positions at the World Bank could not be filled in 2011.

4. Vulnerability of technical systems to climate risk

The visible part of the increasing vulnerability of technical systems is a subject studied by scientists, including the Applied Services Economy Centre (ASEC) programme of The Geneva Association. One of the underlying problems is that economy of scale goes hand in hand with diseconomy of risk. This concept was first proposed by Dr Orio Giarini, then further developed by Prof. Matthias Haller, but has remained a largely ignored concept in economics.

The challenge for the CR+I Project is to highlight this dormant concept, to connect better with existing bodies of knowledge and to develop tools to predict hazards caused by technical systems with the aim of reducing future economic and insured losses. Claims could include global business interruption in just-in-time manufacturing chains caused by natural catastrophe losses or subsequent power cuts. Witness the shortages of electronic components and car parts in manufacturing plants in North America and Europe after 11 March 2011 (the Tohoku earthquake and tsunami) and more recently the Thailand floods.

It is often not the geo risks that have become more violent but the vulnerability of the technical systems which has greatly increased. The “memory stones” of the 1933 tsunami on the Tohoku coast proved to be still “valid” in the 2011 event.

The ART of CROs Networks

“Risk management” is a subject with many different meanings and objectives. In the past, insurers, industrial corporations and banks have tried to clarify some of the issues involved by creating the position of the Chief Risk Officer or CRO. The Geneva Association, jointly with its members, decided to hold annual events to promote the understanding of the role of the CRO. The ART of CROs Network activities have been managed from the beginning until 30 June 2010 by Dr Bruno Porro. The new chairman, since 1 July 2010, is Hans Peter Würmli.

The **ART of CROs meetings** consist of Annual Round Tables of Chief Risk Officers. These are open to the CROs of Members’ companies of The Geneva Association. Their objective is to enable discussions of topics that CROs are confronted with in their activities.

The **CRO Assemblies** are open to a wider audience of CROs from insurance, banking and industry, as well as from associations. The objective is to disseminate the knowledge gained as well as the issues identified by the CRO Forum and the ART of CROs workshops. All the activities of the ART of CROs networks are discussed at the annual CRO Assemblies and documented on the websites *www.cronetworks.org* and *www.genevaassociation.org*.

The **CRO Forum** is an action-focused network of more than a dozen members of the ART of CROs from major insurance companies with the objective of identifying concrete issues of some urgency and financing research studies to clarify these issues. The results of these studies are made available to wider audiences through the ART of CROs meetings and the CRO Assemblies. All publications are available on *http://www.croforum.org/publications.ecp*.

The ART of CROs Meetings[30]

In 2002, The Geneva Association decided to create, within its Programme on Risk Management, an **"Annual Round-Table of Chief Risk Officers"**. Its objective is to provide the CROs of the Members' companies of The Geneva Association with a platform to discuss the roles, objectives and tasks of CROs, and to create a network to exchange experiences and discuss specific risk problems. Meetings are held annually, normally in spring. Each event is sponsored by a CRO and his or her company. The events are thus held at changing locations to share the financial burden.

These meetings also offer the researchers of The Geneva Association the opportunity to discuss their research activities with the risk specialists of the Members' companies, and to identify and prioritise themes and issues of interest to The Geneva Association's members. The meetings normally start with a dinner and can extend over one or two days.

The aim of the ART of CROs is to enable a strong exchange of ideas between participants. Each session is launched by a short kick-off presentation, followed by an extensive discussion. Attendance is limited to approximately 25 CROs on a first-come-first-served basis. Participation is free of charge, but CROs interested in attending should register in advance. Participants have to pay their own travel costs and hotel accommodation.

The **8th ART of CROs** was held in Portugal, on **29-30 April 2010**, organised jointly by The Geneva Association and Companhia de Seguros Tranquilidade SA, Lisbon.

The **9th ART of CROs** was held in Basel, Switzerland, on **12-13 May 2011**, hosted by the Bâloise Insurance Company. Presentations have been published as *Etudes & Dossiers* no. 376, August 2011.

The **10th ART of CROs** was held in The Hague, on **12-13 April 2012**, hosted by AEGON. Presentations have been published as *Etudes & Dossiers* no. 389, May 2012.

The **11th ART of CROs** will take place in Hannover, on **12-13 June 2013**, hosted by Hannover Re.

The Annual CRO Assemblies

These events are open to a larger audience of Chief Risk Officers from insurance, banking and industry as well as insurance associations. Their objectives are to disseminate the knowledge gained, and to discuss the issues identified by the CRO Forum and the ART of CROs workshops with a larger audience of risk management professionals. The CRO Assemblies are organised by The Geneva Association in association with the Swiss Re Centre for Global Dialogue and Munich Re, alternately, to provide a discussion platform for CROs to address current and emerging risks and opportunities with their peers, as well as leading experts from academia, major insurance and reinsurance companies. Participation is by invitation only. Registration is on a first-come-first-served basis.

Furthermore, the assemblies provide a valuable and comprehensive overview of the prevailing risk landscape by analysing the conclusions reached by different CRO thinktanks and relevant industry studies. In addition, the annual assemblies offer interesting external perspectives from industry observers and are an excellent opportunity for networking, designed to foster an environment conducive to interaction and dialogue. Input on topics to be addressed and contributions from participants are welcome.

The **5th CRO Assembly** was held on **11 and 12 November 2009** at the Swiss Re Centre for Global Dialogue in Rueschlikon, Zurich, and was organised jointly by The Geneva Association, Swiss Re and the CRO Forum. The 5th Chief Risk Officer Assembly took place at a time dominated by the consequences of the global financial and economic crisis. The theme was "Navigating the storm—risk management during an economic crisis".

The **6th CRO Assembly** was held on **24 and 25 November 2010** at Munich Re in Munich, and organised jointly by The Geneva Association, Munich Re and the CRO Forum. The theme was *"The significant problems we face cannot be solved at the same level of thinking we were at when we created them"* (Albert Einstein).

[30] Chief Risk Officers interested in participating to the ART of CROs Meetings and the Annual CRO Assemblies are invited to directly contact the facilitator of this programme, Walter R. Stahel, for more information at *walter_stahel@genevaassociation.org*.

The **7th CRO Assembly** was organised jointly by The Geneva Association, Swiss Re and the CRO Forum on **16 and 17 November 2011**, at held at the Swiss Re Centre for Global Dialogue in Rueschlikon, Zurich. The theme was "The path to future growth—Focusing on new risk horizons".

The **8th CRO Assembly** will be held on **28 and 29 November 2012** at Munich Re in Munich, organised jointly by The Geneva Association, Munich Re and the CRO Forum. The theme will be a quote by Winston Churchill *"Let our advance worrying become advance thinking and planning".* CROs interested in attending should contact Ms Susanne Schneider**,** Executive Assistant, Integrated Risk Management, Munich Re: fax: +49 (89) 3891-74905, or should contact Walter Stahel at *walter_stahel@genevaassociation.org*.

The Activities of the CRO Forum

Participation at the quarterly CRO Forum meetings is limited to its members.

The Position Papers of 19 CROs of the world's leading insurance and reinsurance companies:

- **on Global Climate Change** can be downloaded from *http://cronetworks.org/Cro%20Events/CRObriefing.pdf*;
- **on Influenza Pandemics: a prominent example for a mortality shock event,** can be downloaded from *http://www.croforum.org/publications.ecp*.
- **on solar storms** (to be published).

Books, Publications, Articles and Papers Received

Bacchetta, M. and Jansen, M. (eds.) (2011) *Making Globalization Socially Sustainable*, Geneva: WTO and ILO, WTO ISBN 978-92-870-3783-1 and ILO ISBN 978-92-2-124583-4.

Dobelli, R. (2011) *Die Kunst des klaren Denkens* (*the art of clear thinking*), Hanser.

Ellen MacArthur Foundation (2012) *Towards the Circular Economy*. McKinsey provided the overall project management, developed the fact base and delivered the analytics. The report draws from the input and expertise of a wide range of academic and business leaders. *http://thecirculareconomy.org/fetches/new?download_id=4f26c6959d31c63107000018.*

Haute Ecole Spécialisée de Suisse Occidentale (2011) *Hémisphères*, vol. 1.

International Risk Governance Council (2010) *The Emergence of Risks: Contributing Factors*, Geneva: International Risk Governance Council, ISBN 978-2-9700672-7-6.

International Sustainability Unit (2011) "What Price Resilience: Towards Sustainable and Secure Food Systems", *The Prince's Charities*, London: Clarence House.

Kameyama, Y, Sari, A, Soejachmoen, M. and Kanie, N. (2008) *Climate Change in Asia: Perspectives on the Future Climate Regime*, Tokyo: United Nations University Press, ISBN 978-92-1152-0.

Hapgood, M. Thomson A. (2010) *Space Weather: Its impact on Earth and implications for business: Lloyd's 360° Risk Insight*, London: Lloyd's.

Mackenzie, G. (2010) *The Decline of the Traditional Pension: A Comparative Study of Threats to Retirement Security*, New York: Cambridge University Press, ISBN 978-0-521-51847-5.

Magnus, G. (2011) *Uprising*, Southern Gate, U.K.: John Wiley and Sons Ltd, ISBN 978-0-470-66082-9.

OECD (2011) *Future Global Shocks: Improving Risk Governance*, Paris: OECD Publishing, ISBN 978-92-64-09520-5, available at *http://dx.doi.org/10.1787/9789264114586-en*.

Swiss Re (2011) *Closing the financial gap: New partnerships between the public and private sectors to finance disaster risks.*

The Royal Society (2012) *People and the Planet*, London: The Royal Society Science Policy Centre.

UNISDR (2011) *Global Assessment Report on Disaster Risk Reduction*, Geneva: UNISDR, ISBN 978-92-1-132030-5.

World Business Council for Sustainable Development (2010) *Enabling Frameworks for Technology Diffusion*, Geneva: WBSCD, ISBN 978-940388-61-2.

World Business Council for Sustainable Development (2009) *Water, Energy and Climate Change*, Geneva: WBSCD, ISBN 978-3-940388-40-7.

World Economic Forum (2011) *Global Risks 2011 Sixth Edition: An Initiative of the Risk Response Network*, Geneva: World Economic Forum, ISBN 92-95044-47-9.

Wreford, A., Moran, D. and Adger, N. (2010) *Climate Change and Agriculture*, Paris: OECD Publishing, ISBN 978-92-64-08686-9.

Summary of the Risk Management Programme of The Geneva Association

http://www.genevaassociation.org/Research_Programme/Risk_Management.aspx

M.O.R.E.—Management of Risks in the Economy

The M.O.R.E. Seminars are an integral part of The Geneva Association's Risk Management Programme and a key tool in the dialogue with other economic actors in order to emphasise the role of insurance in a modern service economy. They are completed by the Climate Change and Insurance (CC+I) seminars, held annually on topics related to climate change.

THE M.O.R.E.–SEMINARS of the last years

20 The Role of Risk Management and Insurance in the Leisure Industry organised jointly with MAPFRE Foundation, was held on 16-17 November 2006 at MAPFRE Foundation, Madrid, Spain. Papers were published in *Etudes & Dossiers* n° 322, November 2006.

21 The Role of Risk Management and Loss Prevention in Fire Insurance, organised jointly with SCOR, was held on 24-25 November 2007 in Paris and integrated the 25th Anniversary of the World Fire Statistics Centre (WFSC). Papers were published in *Etudes & Dossiers* n° 333, October 2007.

22 The Total Cost of Risk–The Risk Cost Iceberg, organised jointly with Munich Re, held in Munich, September 2008. Papers were published in *Etudes & Dossiers* n° 346, October 2008.

23 Insurance Industry and climate change–a contribution to the global debate, with a special focus on South America, was organised in Bogotà, jointly with Suramericana de Seguros SA, 19-20 October 2009. Papers were published in *Etudes & Dossiers* n° 356, January 2010.

24 Modelling and Mapping Risks, has been held 23-24 June 2010 at Bermuda, hosted by Axis Re. Papers were published in *Etudes & Dossiers* n° 364, October 2010.

25 Modelling and Mapping Risks and Opportunities, was held 12-13 July 2011 at Bermuda, hosted by Axis Re. Papers were published in *Etudes & Dossiers* n° 379, September 2011.

26 Evaluating UNISDR's world risk model (GAR), to be held 29 May in London, hosted by RMS.

THE M.O.R.E. STUDIES of recent years

"INTEREST–Insurance, Technological Risks and Emerging Science and Technology Policies–Final Report to the European Commission". *Etudes & Dossiers* n° 267, March 2003

"Vulnerabilities and Criticalities of Technical and Organisational Systems in the New Service Economy", by Andrew Koubatis and Jorge Yerena Schönberger, published in *Etudes & Dossiers* n° 280, Special Report, March 2004.

The Climate Risk and Insurance (CR+I) Project

The Climate Risk and Insurance (CR+I) Project, (formerly Climate Change and Insurance) is the second pillar of the Risk Management research programme of The Geneva Association. It consists of:

- **the CR+I working group, of experts from the CR+I field;**
- **the CR+I reports; and,**
- **the CR+I seminars.**

The 1st CR+I–Seminar, organised jointly with Suramericana de Seguros, was held in Bogotà, 19-20 October 2009.

The 2nd CR+I–Seminar, organised jointly with Allianz do Brasil, was held in São Paulo 27-28 September 2010.

The 3rd CR+I (Climate Risk and Insurance) Seminar took place 18 October 2011 in Singapore, hosted by NTU Singapore. A report on this seminar can be found on p. 20 of this newsletter.

The Research Programme on Risk Management

The Risk Management Programme is an integral part of The Geneva Association's dialogue with economic and academic actors in order to emphasise the role of insurance in a modern service economy.

The focus of the Risk Management Programme is:

- to provide a platform between the insurance community, the engineering and academic communities, and policy-makers to discuss issues on balancing risks and opportunities;
- to be a facilitator for the Chief Risk Officers (CROs) of The Geneva Association, and CROs in general;
- to foster the use of risk assessment tools and risk management in new fields of application, such as policy-making;
- to promote the concept of the insurability of risks as the “natural” borderline between State legislation and the market economy;
- to identify new opportunities for insurers in the emerging sustainability concept in order to enlarge the field of insurable and insured risks; and
- to research and illustrate the new risks in the emerging service economy, based on an extended performance responsibility of economic actors.

The Geneva Association

The Geneva Association is the leading international insurance think tank for strategically important insurance and risk management issues.

The Geneva Association identifies fundamental trends and strategic issues where insurance plays a substantial role or which influence the insurance sector. Through the development of research programmes, regular publications and the organisation of international meetings, The Geneva Association serves as a catalyst for progress in the understanding of risk and insurance matters and acts as an information creator and disseminator. It is the leading voice of the largest insurance groups worldwide in the dialogue with international institutions. In parallel, it advances—in economic and cultural terms—the development and application of risk management and the understanding of uncertainty in the modern economy.

The Geneva Association membership comprises a statutory maximum of 90 Chief Executive Officers (CEOs) from the world’s top insurance and reinsurance companies. It organises international expert networks and manages discussion platforms for senior insurance executives and specialists as well as policy-makers, regulators and multilateral organisations. The Geneva Association’s annual General Assembly is the most prestigious gathering of leading insurance CEOs worldwide.

Established in 1973, The Geneva Association, officially the “International Association for the Study of Insurance Economics”, is based in Geneva, Switzerland and is a non-profit organisation funded by its members.

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Forthcoming Conferences Organised and/or Sponsored by The Geneva Association

2012

May

29	London	**M.O.R.E. 26 Seminar "Evaluating UNISDR's GAR model"**, hosted by Risk Management Services (RMS)

June

6-9	Washington D.C.	**39th General Assembly of The Geneva Association** *(members only)*
17-20	Rio de Janeiro	**The Geneva Association/IIS Research Award Partnership**

August

16	Beijing	**2nd Geneva Association China Liability Regime Conference**, hosted by Swiss Re China

September

17-19	Palma de Mallorca	**39th Seminar of the European Group of Risk and Insurance Economists (EGRIE)**

November

5-6	Paris	**9th Annual Liability Regimes Conference on "Evolving Litigation Tactics and Procedures Affecting Liability for Insurers"**, hosted by SCOR
8-9	Stockholm	**9th Health & Ageing Conference of The Geneva Association on Genetics and Insurance**, co-organised with Länsförsäkringar AB
28-29	Munich	**8th CRO Assembly**, jointly organised with Munich Re
tba	Asia	**4th CR+I Seminar of The Geneva Association**

December

10-11	London	**9th International Insurance and Finance Seminar of The Geneva Association**, hosted by Lloyd's
3-4	Geneva	**The Four Pillars: The Next 25 Years**

2013

June

5-8	London	**40th General Assembly of The Geneva Association** *(members only)*
12-13	Hannover	**11th ART of CROs meeting** hosted by Hannover Re