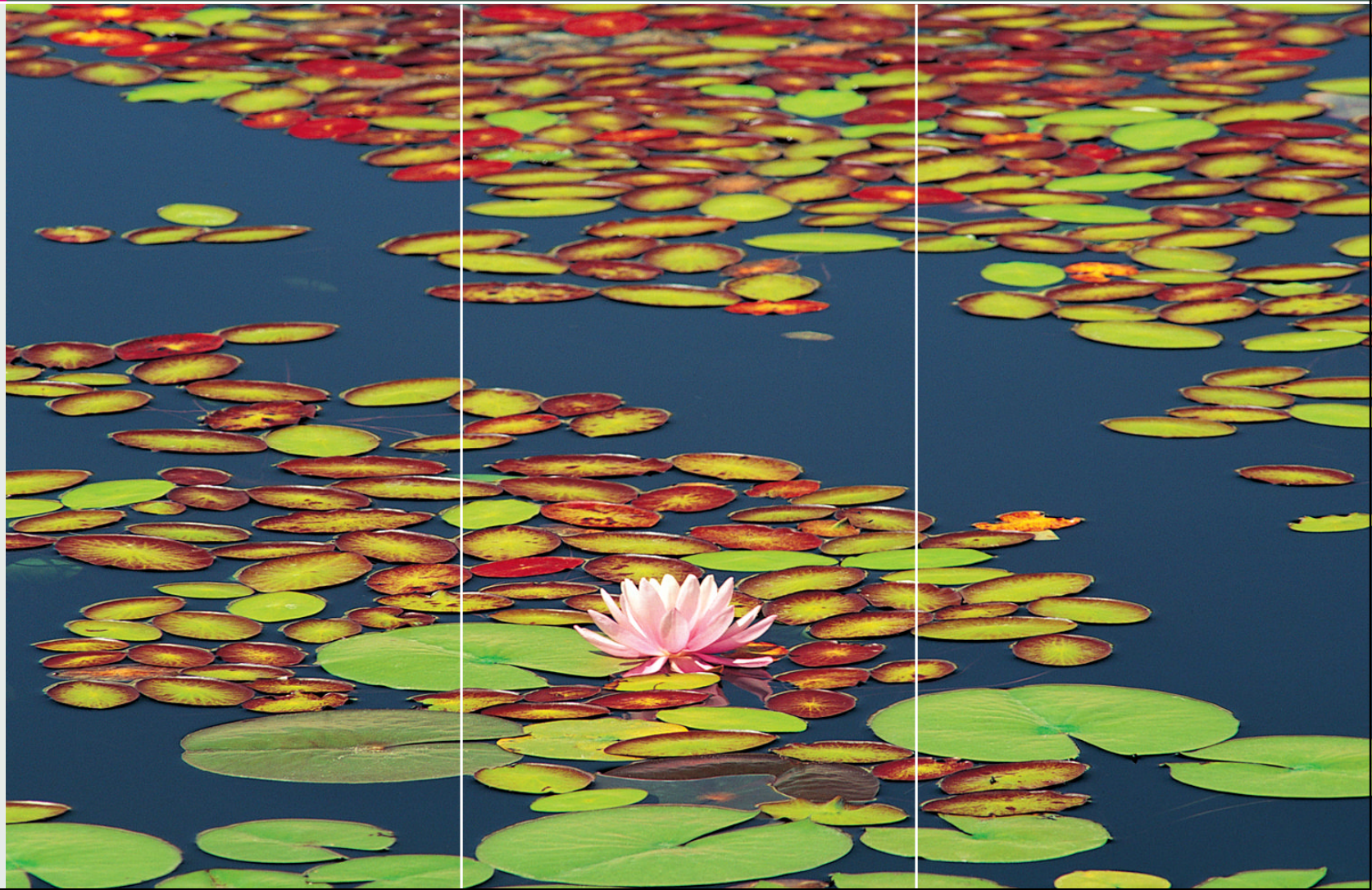


Swiss Re



Biodiversity

From liability risks to business opportunities



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Biodiversity



Biodiversity Agenda

Swiss Re



Environmental liability risks – Legal environment

Managing man made environmental risks

- Entrepreneurial challenges
- Environmental risk prevention
- Environmental risk management

Business opportunities for re-/insurers

Swiss Re experience



Environmental liability risks

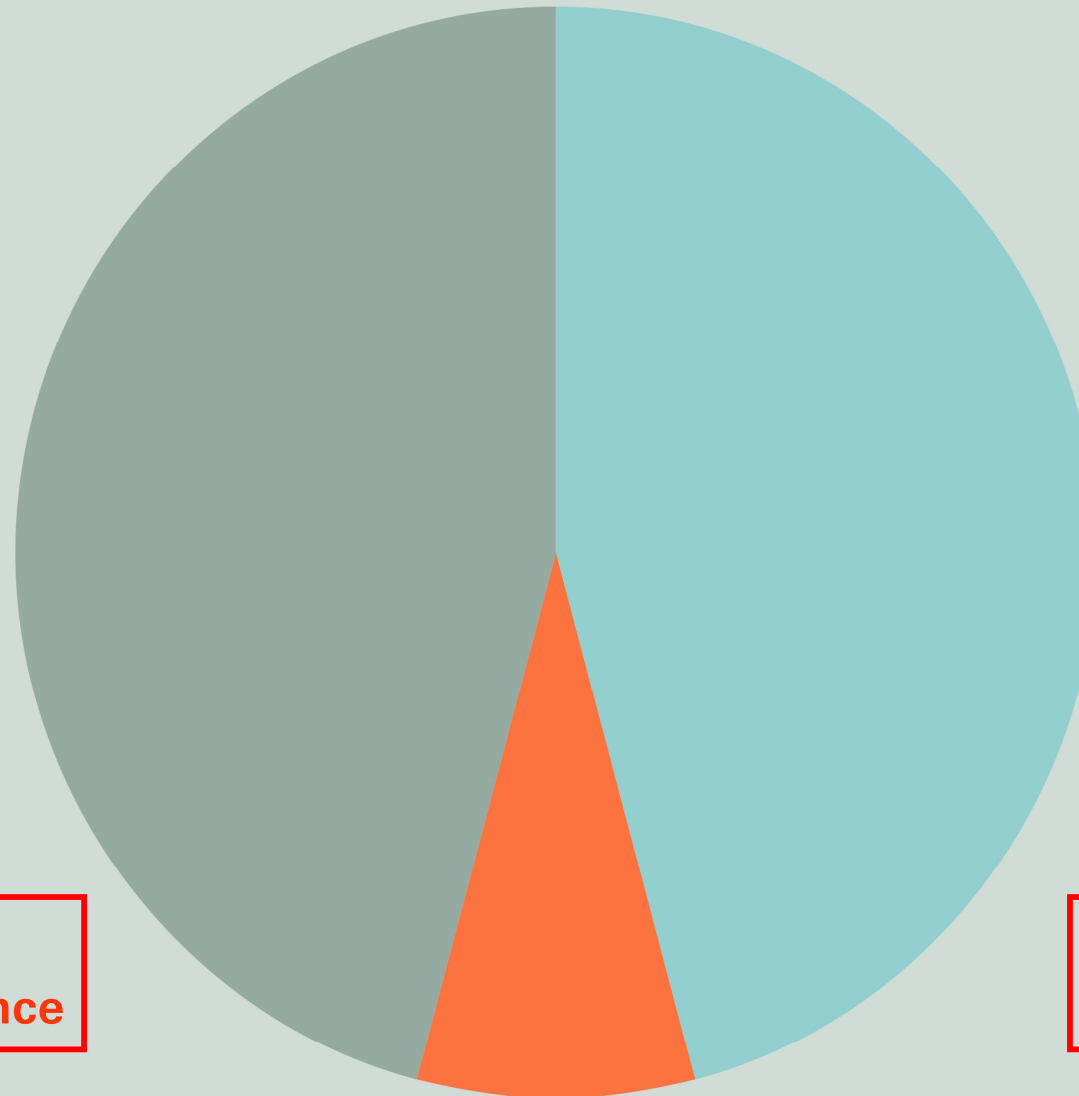
Legal environment

Environmental Protection Law
- loss prevention
- remediation of the environment

→ **Public law**

Environmental Liability Law
- bodily injury
- property damage
- some financial losses

→ **Civil law**



Criminal law

Traditionally out of the scope of liability insurance

Traditionally in the scope of liability insurance



Managing man made environmental risks – Entrepreneurial challenges

Managing the risk of change

- Compliance with legal requirements
- Reduction of future environmental losses
- Reduction of speed of global warming
- Restriction in the use of hazardous substances eg REACH chemical legislation
- Impact of new technologies eg nanotechnology, carbon capture and storage, renewable energy technology
- Clean-up of existing/historical contamination
- Remediation of environmental damage/lost biodiversity
- Change in risk perception or risk-acceptance lead to stricter liability regimes



Managing man made environmental risks – Environmental risk prevention

Comprehensive legal frameworks

European Union and International European Conventions, eg

- Integrated Pollution Prevention and Control (IPPC-Directive)
- Environmental Liability Directive
- Convention on the transboundary effects of industrial accidents including Kiev Liability Protocol

USA, eg

- Endangered Species Act
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund)



Managing man made environmental risks – Environmental risk prevention

Comprehensive legal frameworks

Legal framework in China

- 20 environmental protection laws
- 50 administrative orders
- 250 regulations
- 500 standards

However

- Heavily polluted environment
- Increasing awareness of public (however not enough) on environmental protection



Managing man made environmental risks – Environmental risk management

- Identification of
 - Environmental exposures
 - Non-transferable entrepreneurial risks
 - Risks to be transferred to professional risk carrier
- Implementation of measures to avoid respectively reduce environmental risks
- Implementation of emergency response mechanism
- Transfer of risks to professional risk carriers to make sure that compensation of damages and remediation of environmental damage is secured

Important systems & standards:

- ISO 14000-14004:
Focus on the control of the organizational processes and activities having an impact on the environment
- EU Eco-Management and Audit Scheme (EMAS):
Evaluate, report and improve environmental performance and reduce environmental impact

Environmental risk assessment and management is key



Business opportunities for re-/insurers

Key issues of insurability

Insurance is a valuable risk transfer instrument

Insurance is a valuable risk transfer instrument to manage environmental exposures and finally to protect biodiversity, however

- The insurance industry does not offer insurance products against all of the liabilities
- Insurers will not insure everything: Insurers must be free to decide which risks they are willing to accept and which not
- Especially for new liabilities often only little information is available initially on the probability of loss and on the amount of losses to be expected
- Usually due to this the insurance market may initially only provide tight capacity. Any comprehensive insurance cover is mostly not immediately feasible



Business opportunities for re-/insurers

Key issues of insurability

Focus on sustainable insurance products

- Legal clarity and certainty
- Risk Management
 - Insurance is not a substitute for proper risk management
- Risk assessment
 - Understanding environmental risks before insuring them
- Underwriting and pricing
 - Able to assess a risk properly
 - Able to calculate the premium
 - Importance of statistics
- Development of new claims management skills



Swiss Re's experience

- Legal clarity and certainty will support the development of sustainable insurance solutions
- But insurers need time to develop insurance solutions and gain experience with environmental damage claims
- Environmental risk assessment and management is key
- Environmental damage claims require new claims management skills
- Compulsory financial security would impede these developing processes

It is a long way to go to establish a sustainable (environmental damage/biodiversity) insurance market