

INTRODUCTION

RISK ANALYSIS AND MANAGEMENT IN A DYNAMIC RISK LANDSCAPE

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The notion of risk embodies uncertainty about how the future will unfold in an increasingly complex, dynamic, and fast-changing world. Its broad dissemination in politics and business implies that it “unlocks some of the most basic characteristics of the world in which we now live”.¹ Risk has gained new ground in the public and scientific debate with sociologist Ulrich Beck’s seminal book on the “risk society”.² He recognized in the 1980s that the accelerated technological change and its consequences for work, economic production, and consumption lead to risks that increasingly defy political control and governance. Modern technological advancements, for instance in the field of bio- or nanotechnology, not only promise great hope for social progress, but also evoke great fears of unknown threats.

It is exactly this twofold nature of risks – the potential threat and the opportunity linked to it – that makes them so challenging to manage.

- 1 Giddens, Anthony, *Runaway World: How Globalization is Reshaping Our Lives* (New York: Routledge, 2001), p. 39.
- 2 Beck, Ulrich, *Risikogesellschaft: Auf dem Weg in eine andere Moderne* (Frankfurt: Suhrkamp, 1986).

Eliminating risks completely is neither feasible nor desirable for at least three reasons: there is no absolute control as such for human beings in dealing with the future; the (financial) resources available for prevention and precaution are always limited; and taking risks is at the heart of the innovation process and a necessary condition for economic growth and social progress. The challenge of prudently and successfully steering the course of risks between opportunity and threat has brought risk analysis and management – which some consider “the singular most important analytical tool of the modern world”³ – to the core of public policy and corporate governance in recent times.

The aim of this “International Handbook on Risk Analysis and Management” is to provide insights into the threat perception, risk valuation, and mitigation efforts of risk practitioners in a broad range of professional contexts. It contains contributions by experts from civil defense organizations, intelligence services, armed forces, and the financial and insurance businesses. Despite the great diversity in their analyses, their varying perspectives on risks, and their differing issues and concerns, a common strand is apparent throughout the book: the key objective of risk analysis and management is always to find ways and approaches to detect upcoming issues in a timely manner, to assess future threats adequately, and to design and implement successful mitigation policies. With this central premise of risk management in mind, this introduction has been divided into four sections: section 1 briefly sketches the risk concept, section 2 characterizes the essential features of today’s risk landscape, section 3 explores the design of an ideal process of risk analysis and management, and section 4 introduces the framework and content of the following articles.

3 Jarvis, Darryl S.L. and Martin Griffiths, ‘Risk and International Relations: A New Research Agenda’, *Global Society*, 21/1 (2007), pp. 1–4, at p. 1.

1 The meaning of risk

“Risk” is an almost ubiquitous term. It has many terminological and conceptual connotations, and it is used in very diverse organizational, disciplinary, or methodological settings. While no generally accepted approach exists, there are a few characteristics shared by all risk concepts. The first is uncertainty about how the future will evolve.⁴ The historic turn from a circular to a linear perception of time led to the insight that the future is not simply the repetition of the past and that the present reality is not the only reality: there is a difference between what is, what could be, and what will be. This insight gives rise to thinking in terms of probabilities, which is typical for risk issues.⁵ Not coincidentally, therefore, the most common definition identifies risk as the product of the damage potential and the probability that an uncertain future event will occur.⁶

An undetermined and non-linear development over time further implies that the future is subject to human agency and can therefore be shaped by individuals.⁷ Human beings are able to actively steer the course of their life, to make decisions, to shape the conditions of the environment in which they live, and to create the future they desire. Uncertainty about the future is thus strongly linked to the capacity for self-determined action, and human beings are able to establish causal links between actions and their possible consequences. These consequences are not fatalistically perceived as predetermined, but they can

4 Renn, Ortwin, ‘Concepts of Risk: A Classification’, in Sheldon Krinsky and Dominic Golding (eds.), *Social Theories of Risk* (Westport: Praeger, 1992), pp. 53–79, at pp. 56ff.

5 Bonss, Wolfgang, ‘Unsicherheit und Gesellschaft: Argumente für eine soziologische Risikoforschung’, *Soziale Welt*, 42/2 (1991), pp. 258–77, at p. 267; Markowitz, Jürgen, ‘Kommunikation über Risiken: Eine Theorie-Skizze’, *Schweizerische Zeitschrift für Soziologie*, 16/3 (1990), pp. 385–420, at pp. 386ff.

6 For a more detailed discussion of the key characteristics of risk, see Habegger, Beat, ‘Von der Sicherheits- zur Risikopolitik: Eine konzeptionelle Analyse für die Schweiz’, in Andreas Wenger and Victor Mauer (eds.), *Bulletin 2006 zur Schweizerischen Sicherheitspolitik* (Zurich: Center for Security Studies, 2006), pp. 133–64, at p. 140–3.

7 Bonss, Wolfgang, ‘Die Rückkehr der Unsicherheit: Zur gesellschaftstheoretischen Bedeutung des Risikobegriffs’, in Gerhard Banse (ed.), *Risikoforschung zwischen Disziplinarität und Interdisziplinarität: Von der Illusion der Sicherheit zum Umgang mit Unsicherheit* (Berlin: Edition Sigma, 1996), pp. 165–184, at p. 175.

be influenced by either changing the initiating events or by mitigating the resulting negative effects. Consequently, the present we are experiencing at any given point in time is only one of many possible futures people may have imagined in the past, and it is impossible to state with certainty what the world will look like tomorrow. Risk is therefore only a meaningful concept in a “society that is future oriented [and] actively wants to break away from its past”.⁸ It necessitates a “goal-oriented system”⁹ in which decisions are associated with certain goals, interests, and values, so that it is possible to establish criteria against which degrees of risk can be “measured”.

This book emphasizes risks that arise on a macro-level in the sense that they potentially affect entire regions, countries, economies, or societies at large. These risks are particularly relevant in security policy, as they usually constitute major events with heavy consequences and transnational impacts, such as terrorist attacks or the spread of pandemic diseases. We may also characterize them as systemic risks because their potential impact challenges the integrity of entire systems – be they political, economic, societal, technological, or ecological. Such systemic risks are defined by “extreme uncertainty and a potential for extensive and perhaps irreversible harm”.¹⁰ They may arise from changes in the socio-economic or socio-political environment of institutions, be it in public policy or the corporate world, and the systems may be damaged by single catastrophic events or the cascading effect of a complex chain of events.

8 Giddens, p. 40.

9 Haller, Matthias, ‘Risiko-Management: Eckpunkte eines integrierten Konzepts’, in Herbert Jacob (ed.), *Risiko-Management*, Schriften zur Unternehmensführung 33 (Wiesbaden: Gabler, 1986), pp. 7–43, at p. 143.

10 OECD, *Emerging Systemic Risks in the 21st Century: An Agenda for Action* (Paris: OECD, 2003), p. 32.

2 Characteristics of today's risk landscape

While a consensus on risk is usually elusive, a few commonly agreed-upon features of the current risk landscape can be identified. Such a risk landscape reflects cognitive models by means of which possibilities and values residing in the world are conceptualized¹¹ and refers “to the totality of risks faced by a specific community”.¹² Three interlinked elements are constitutive of today's risk landscape: interdependency, complexity, and uncertainty, all of which are amplified by an increased dynamic of global change.

Tremendous advances in information and communication technology have greatly increased the international linkages and connections between states, international institutions, multinational corporations, civil society, and individuals. This process has created more interdependencies between persons, nations, markets, and societies than ever before in world history. Consequently, international governance is no longer confined to national actors engaged in inter-state relations. A growing number of transnational actors try to influence political processes on multiple levels of governance. While many of these new actors have good intentions, some have misused the transformative power of modern technologies for establishing communication and commercial networks that are intended to do harm to other people. In the case of “transnational terrorism”,¹³ for instance, small groups are now able to achieve extremely damaging effects that are absolutely disproportional to their “real” (political) significance.

Strong interdependencies combined with intense interactions between many independent actors or events create complexity. Today, “nothing happens in isolation. Most events and phenomena are connected, caused by, and interacting with a huge number of other pieces of a complex

11 Kamppinen, Matti and Markku Wilenius, ‘Risk Landscapes in the Era of Social Transformation’, *Futures*, 33/3–4 (2001), pp. 307–17, at p. 308; Swiss Re, *The Risk Landscape of the Future* (Zurich: Swiss Reinsurance Company, 2004), p. 5.

12 Swiss Re, p. 5.

13 Schneckener, Ulrich, *Transnationaler Terrorismus* (Frankfurt a.M.: Suhrkamp, 2006).

universal puzzle.”¹⁴ The functional sub-systems of our society are highly interconnected, and geographic boundaries in the form of state borders have lost much of their significance. High levels of interconnectivity across functional and geographic boundaries lead to “risk contagion”,¹⁵ spreading the effects of a particular incident rapidly and easily to other areas. The cascading effect of risks within tightly coupled interdependent systems makes it hard to predict the consequences of an incident and difficult to contain them to a specific functional or geographical sub-system.¹⁶

The complexity of the current risk landscape is intensified by three specific characteristics of systemic risks. First, they are often marked by a creeping evolution, meaning that they are difficult to recognize at an early stage. Obviously, contingency plans are easier to prepare for sudden incidents arising from a known threat. In terms of mitigation, the neglect of systemic effects leads to the harmful practice of fixing isolated problems without acknowledging the “complex, system-wide effects of particular interventions”.¹⁷ Second, systemic risks often only spread gradually, and the actual consequences cannot be recognized until a very late stage, by which time it might be too late to act. Third, if systemic risks occur simultaneously, emanating from different functional sub-systems and at different geographical locations, individual effects may be amplified reciprocally, and the planned mitigation measures, tailored to the manifestation of a single risk, may not work.¹⁸ The simultaneous occurrence and interaction of risks may generate completely unforeseen effects: the character and the evolution of the risks over time may be

14 Barabási, Albert-László, *Linked: How Everything is Connected to Everything Else and What It Means for Business, Science, and Everyday Life* (New York: Plume Book, 2003), p. 7.

15 World Economic Forum, *Global Risks 2006* (Cologne/Geneva: World Economic Forum, 2006), p. 6.

16 World Economic Forum, *Global Risks 2007: A Global Risk Network Report* (Cologne/Geneva: World Economic Forum, 2007), p. 6.

17 Sunstein, Cass R., *Laws of Fears: Beyond the Precautionary Principle* (Cambridge: Cambridge University Press, 2005), p. 46.

18 Cf. World Economic Forum, *Global Risks 2006*, p. 7.

changed, and their impact in terms of damage potential will probably be much more significant than if each risk occurred individually.

The increased complexity of the risk landscape leads to a higher degree of *uncertainty*. Evidently, the future is always uncertain, and if risk analysis and management is concerned with identifying future events or issues, it entails by definition the need to deal with uncertainty. Uncertainty is also a key governing element of all political or economic activity¹⁹ and “seems to be inherent in political life”.²⁰ One fundamental challenge to international business and politics consists of detecting, out of the almost indefinite number of imaginable trends within the international system, those future trends that exhibit a certain probability of actually occurring. Beyond the uncertainty that has always resided in the international system and is inherent in all dealings with the future, the increased complexity of the current international system has elevated the “normal” degree of uncertainty to higher levels.

The three constitutive elements of today’s risk landscape are logically interlinked – interdependency leads to complexity, complexity leads to uncertainty – and they are collectively affected by an accelerated *dynamic of change*: the speed of change and the frequency of change have increased, while the predictability of future events has decreased. Whereas technological progress always has a transformative effect by giving rise to new risks and by providing new tools for mitigating known threats, the modern technologies enable faster communication within more densely interconnected networks. Technological advancement not only creates the conditions for generating, but also for disseminating innovation, opportunities, and risks faster and at much lower costs than ever before.²¹ This dynamic shortens innovation cycles and abbreviates the “time-to-market” for corporations. Businesses are forced to adapt quickly to new technologies and changed market conditions.

19 Frei, Daniel and Dieter Ruloff, *Handbuch der weltpolitischen Analyse*, 2nd ed. (Grüsch: Rüegger, 1988), p. 15.

20 Dahl, Robert, *Modern Political Analysis*, 5th ed. (Eaglewood Cliffs: Prentice Hall, 1991), p. 137.

21 Joseph S. Nye, Jr., *The Paradox of American Power* (Oxford: Oxford University Press, 2002), p. 43; Swiss Re, p. 11.

Consequently, governments must adjust the regulatory frameworks in order to stay internationally competitive in terms of providing an attractive investment climate and, ultimately, for retaining business activities. When the frequency of change increases, new opportunities open up for those quick enough to capture the potential benefits. However, more rapid change also leads to new risks that have not yet been considered because they simply did not exist in the past. It is evident that fast-paced change renders future developments less and less predictable. While it is possible in a relatively static environment to estimate how the future will unfold,²² this task becomes almost impossible in a complex and quickly changing environment.

3 The process of risk analysis and management

Risks have the potential to dramatically diminish human, economic, environmental, and social capital. Armed conflicts, for instance, illustrate the high stakes involved: they induce human costs from death in combat and, often more importantly, war-related diseases and malnutrition;²³ economic costs arise in the form of destroyed infrastructures, disrupted trade, and reduced capital stocks; environmental costs emerge from contaminated battlefields, landmines that make it impossible to cultivate the land, and deliberately destroyed water supply systems; and the social costs are even more evident, as they not only create countless human tragedies, but also undermine public trust in institutions and elites.

The question of whether risks can actually be managed or not may be answered in a way that oscillates between two extreme positions:²⁴ on the one side are those who subscribe to the view that risks are external variables affecting an institution without any possibility of influencing

22 Cf., for instance, Tetlock, Philip E., *Expert Political Judgment* (Princeton: Princeton University Press, 2005), p. 26.

23 Human Security Report Project (HSRP), *Human Security Report 2005* (Vancouver, Human Security Center, 2005), Part IV: Counting the Indirect Costs of War, p. 125.

24 Cf. Denk, Christoph, *Politische Risiken für Banken: Charakter, Typologie, Management* (Berne: Haupt, 2003), p. 219.

their probability of occurrence or reducing their damage potential; on the other side are those who believe that risks can be absolutely controlled by scientific means and rational action. Both positions are mistaken in view of the common characteristics of risks as outlined above: as uncertain future events, risks can always be influenced by human behavior and decision-making, but it can never be predicted with absolute certainty whether or how they will arise and evolve over time. Any reasonable observer aiming to assess what risk analysis and management can realistically achieve would therefore come to the conclusion that a pragmatic approach must lie somewhere in between. The following paragraphs propose such an approach for the early identification of emerging risks, their timely assessment, and the development of appropriate mitigation strategies.²⁵

3.1 Identifying risks

The first step is the identification of risks. Only if the risk landscape is observed in a broad manner can a holistic picture of the threat situation be drawn and the appropriate countermeasures be planned and implemented. Early risk identification helps decision-makers to prevent risks from developing into issues that are likely to threaten stated goals, interests, or values; and it provides them with sufficient time to take the appropriate measures for tackling risks before they arise and appear on the (political) agenda. The early identification of risks therefore reduces “surprise effects”, increases the room for maneuver of decision-makers, and improves the overall flexibility of governance.

25 For such a process model, see, for instance, Banse, Gerhard and Gotthard Bechmann, ‘Interdisziplinäre Risikoforschung: Von der Risikoanalyse zum Risikomanagement’, in Marco Allenspach (ed.), *Integriertes Risikomanagement: Perspektiven einer chancenorientierten Unternehmensführung* (St.Gallen: Institut für Versicherungswirtschaft IVW-HSG, 2001), pp. 15–40; Baumann, Roger, Christiane Döhler, Jens Hallek, and Torsten Wintergerste, ‘Implementierung des Enterprise-Risk-Managements’, in Oliver Gassmann and Carmen Kobe (eds.), *Management von Innovation und Risiko*, 2nd ed. (Berlin: Springer, 2006), pp. 45–69; Renn, Ortwin, ‘Three Decades of Risk Research: Accomplishments and New Challenges’, *Journal of Risk Research*, 1/1 (1998), pp. 49–71.

The conceptual starting point is the insight that emerging risks can usually be detected long before they turn into real threats. An effective early-warning system, acting as a “strategic radar”²⁶ in all environments relevant to an organization, can detect discontinuities in trends hitherto perceived as stable and unchanging. These discontinuities are foreshadowed in the form of “weak signals”, a term coined by Igor H. Ansoff, whose pioneering work gave the decisive scientific impulse for strategic early warning.²⁷ The concept builds upon the idea that risks do not emerge “out of the blue”, but always have a history of development.²⁸ Consequently, the earlier the indicators pointing to discontinuities and upcoming threats are detected, the more options for action are available, and accordingly better risk mitigation measures can be initiated (see Figure 1 below).

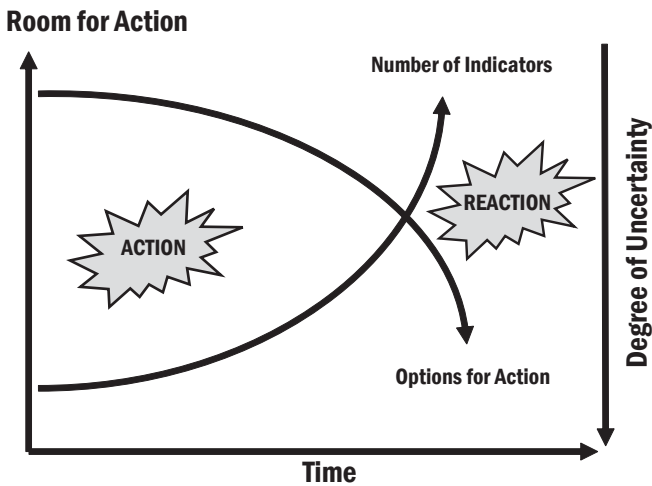


Figure 1: Rationale for early warning

26 Krystek, Ulrich and Günter Müller-Stewens, ‘Strategische Frühaufklärung’, in Dietger Hahn and Bernard Taylor (eds.), *Strategische Unternehmensplanung – Strategische Unternehmensführung*, 8th ed. (Heidelberg: Physica, 1999), pp. 497–517, at p. 505.

27 See for example, Ansoff, Igor H., ‘Managing Strategic Surprise by Response to Weak Signals’, *California Management Review*, 18/2 (1975), pp. 21–33.

28 Krystek and Müller-Stewens, ‘Strategische Frühaufklärung’, p. 501.

The key resource in this process is information. Collecting and processing information is the essential precondition for spotting upcoming issues at an early stage. The constant accumulation of information generates more structured and explicit evidence of potential changes in an external environment. The challenge, therefore, is to broaden the scope of available sources, to access the relevant sources, and to use the collected information in a more creative way. The emergence of an information society, fostered by the tremendous progress in information and communication technology, only appears to facilitate this process: while information is more easily accessible and available, it simultaneously becomes more difficult to filter out the decisive trends or signals from the vast amount of available information. It is not only the lack of data or precise information that contributes to the perception of a complex world, but the inverse trend of information overload may paradoxically even have the greater impact. Joseph S. Nye described this phenomenon vividly as the “paradox of plenty”, meaning that a “plenitude of information leads to a poverty of attention”.²⁹ Attention becomes the scarce resource, and those trying to spot the really important issues are constantly challenged to distinguish between valuable signals and routine noise.³⁰

3.2 Assessing risks

The second step of a comprehensive risk management process is risk assessment. There are three activities to execute at this stage: the structuring, evaluation, and prioritization of risks. These steps do not necessarily follow each other in this order, but are rather part of a circular process that facilitates consensus-building among all involved stakeholders.

The *structuring of risks* aims to introduce order into a potentially vast amount of identified risks. The objective is to define certain categories around which the identified risks can be clustered. This procedure al-

29 Nye, *The Paradox of American Power*, p. 43.

30 Habegger, Beat, Chris Pallaris, and Vivian Fritschi, *Emerging Threats in the 21st Century; Seminar 1: The Changing Threat Environment and Its Implications for Strategic Warning* (Zurich: Center for Security Studies, ETH Zurich, 2006), p. 8 <http://www.crn.ethz.ch/publications/crn_team/detail.cfm?id=27872>, accessed 15 November 2007.

lows risk analysts to subdivide a risk landscape into political, economic, societal, technological, or ecological risks, or any other category they deem necessary or useful. In the publication “Risk Profile Switzerland 1999”, for instance, a study commissioned by the Swiss Federal Ministry of Defense, the risk analysts clustered a total of 34 risk scenarios into nine categories, ranging from natural hazards to geopolitical risks.³¹

The objective of *risk evaluation* is to recognize the relative significance of some risks compared to others. The proposition stated above, that risks are only relevant in a goal-oriented system, is self-evident: in order to actually recognize potential hazards, it must first be clear what the objectives are. These objectives always depend on individually and collectively framed interests due to different social, religious, geographic, professional, or educational backgrounds. They are shaped by values referring to particular worldviews, because risk “necessitates value judgments” and should always be understood as a “product of historically, socially, and politically contingent perspectives.”³² Although risk evaluation evidently aims at consensus-building with regard to the character, behavior, or evolution of risks as well as the estimation of their likelihood of occurrence and damage potential, it is never a clear-cut exercise with objective determinants, but always displays subjective elements.

The next step in risk assessment is to ask what risks need to be tackled as a priority. Although the proposition concerning the subjectivities inherent to many risks has been empirically confirmed many times, it is not of great use for policy-makers who are forced to act upon emerging risks. The reason for *risk prioritization* is straightforward: in view of the almost unlimited number of potential risks, and due to the restrictions imposed by the limited amount of resources available, trade-offs are unavoidable, and there is an imperative to make the most effective and efficient use of available resources. Basically, risk prioritization is about

31 Federal Department of Defense, Civil Protection and Sport (DDPS/VBS), *Risikoprofil Schweiz: Umfassende Risikoanalyse Schweiz*, unpublished report (Berne: DDPS/VBS, 1999).

32 Horlick-Jones, Tom and Jonathan Sime, ‘Living on the Border: Knowledge, Risk and Transdisciplinarity’, *Futures*, 36/4 (2004), pp. 441–56, at p. 447.

determining the potential costs of particular risks in order to tackle those risks that “are likely, imminent, and have widespread consequences”.³³

3.3 Mitigating risks

Once the risks are identified, structured, evaluated, and prioritized, the most threatening ones should be mitigated. From a public management perspective, all previous steps are only relevant insofar as they provide decision-makers with relevant information for deciding about risk mitigation measures.³⁴ On the basis of the classical definition of risk as the product of damage potential and the likelihood of occurrence, two fundamental mitigation strategies can be distinguished: preventative measures and precautionary measures. The former are intended to prevent the occurrence of an adverse event and are therefore directed at removing the causes of particular risks. The latter are intended to alleviate the damage in the case of occurrence and are therefore directed at reducing the vulnerability of an institution or the society at large and to augment their resilience level.³⁵ These two mitigation strategies are complementary, and it would be dangerous to neglect prevention in favor of precaution, or vice versa.

In an operational perspective, it is usually impossible to eliminate a particular risk completely. Such an approach would not only require “total control” of future developments; it might also be unfeasible in view of limited resources and the need for an efficient balancing of costs and benefits of all (public) policy measures. Furthermore, it may even be undesirable, because risks often incorporate an (undetected) opportunity, and those who want to capture benefits are forced to take risks. In the real world, not in an artificial or ideal-state environment, the objective

33 Bremmer, Ian, ‘Managing Risks in an Unstable World’, *Harvard Business Review* (June 2005), pp. 2–9, at p. 5.

34 Banse and Bechmann, ‘Interdisziplinäre Risikoforschung’, p. 31.

35 Daase, Christopher, ‘Internationale Risikopolitik: Ein Forschungsprogramm für den sicherheitspolitischen Paradigmenwechsel’, in Christopher Daase, Susanne M. Feske, and Ingo Peters (eds.), *Internationale Risikopolitik: Der Umgang mit neuen Gefahren in den internationalen Beziehungen* (Baden-Baden: Nomos, 2002), pp. 9–35, at pp. 18–21.

of risk mitigation is thus not to completely eliminate every single risk, but to aim for an adequate and justifiable degree of residual risk.

In order to bring risks in line with opportunities proportionally, a sequence of three logical steps essentially suggests itself (see Figure 2 on p. 27):³⁶ First, risks can be avoided or eliminated. Research in the area of nanotechnology, for instance, could be stopped and banned. In this way, the unintended consequences of nanotechnology would not constitute a potential future risk anymore. The avoidance of these risks, however, would lead to other risks, such as a deceleration of economic development or a reliance on environmentally more problematic, because more polluting and outdated technologies. Second, risks can be reduced. This is the core idea behind risk mitigation. The two presented mitigation strategies – preventative and precautionary measures – are both based on the premise of reducing risks as much as possible. Third, beyond effective preventative and precautionary risk mitigation, some risks can be transferred to other (third) parties. Obviously, this possibility only applies to a selected set of risks, especially to those for which insurance coverage is available in terms of financial compensation in the case of loss, and it is only relevant for some institutional (often private) actors.

36 Boutellier, Roman and Vinay Kalia, 'Enterprise-Risk-Management: Notwendigkeit und Gestaltung', in Oliver Gassmann and Carmen Kobe (eds.), *Management von Innovation und Risiko*, 2nd ed. (Berlin: Springer, 2006), pp. 27–43, at pp. 35f.

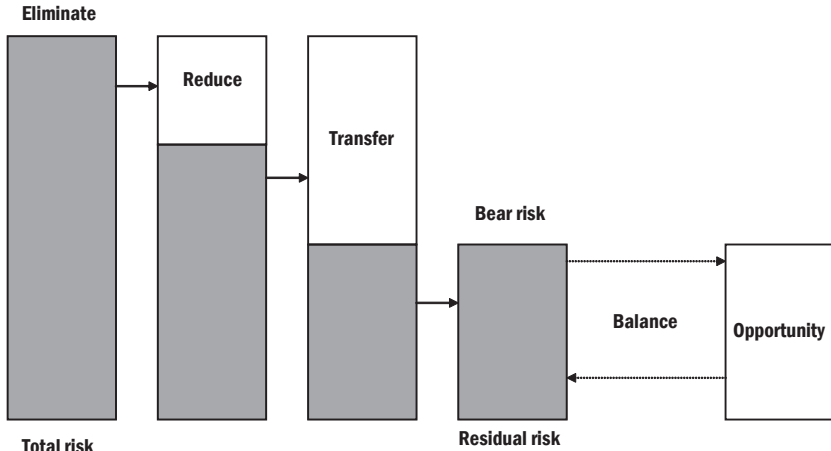


Figure 2: Options for risk mitigation³⁷

The suggested process is a somewhat idealized approach to risk analysis and management that evidently needs to be adapted to the respective institutional circumstances. While the timely identification, adequate assessment, and appropriate mitigation of risks have indeed become decisive requirements for successful policymaking, analysts and decision-makers are accordingly confronted with a variety of organizational, political, financial, or knowledge constraints. Forced by a changed risk landscape to reconsider the way they think and plan for the future, they have chosen different means and ways to accept these challenges.

4 Purpose and structure of the handbook

The purpose of this handbook is to explore risk management policies in very diverse contexts and to show how risk professionals support decision-makers in thinking about, planning for, and coping with risks. While this brief introduction served to outline the concept of risk and the risk management process, in the following, experienced professionals write

³⁷ Adapted from Boutellier and Kalia, 'Enterprise-Risk-Management', p. 35.

about the practical challenges they face in dealing with risks and threats. The chapters give insight into a variety of organizational and methodical practices of different institutions. They may stimulate reflection, facilitate communication, initiate a more intense knowledge transfer, and enhance the overall knowledge about risk analysis and management.

The chapters are divided into three parts, each covering a specific professional context, including civil defense organizations, intelligence services, armed forces, multilateral institutions, as well as financial and insurance companies. In the first part, professionals serving in civil defense agencies, all of them partner organizations of the Crisis and Risk Network (CRN), outline their approaches to risk management. *Giulio Gullotta* of the German Federal Office of Civil Protection and Disaster Assistance postulates that the main political risk in protecting the people is a failure of leadership on the part of top-level decision-makers that may lead to a decline in public confidence. The rationale for risk analysis thus is to provide decision-makers with reliable and timely information in order to act quickly upon emerging risks. The change in threat perception from a rather one-dimensional focus on (nuclear) war during the Cold War to a multidimensional perspective of a broad variety of potential threats triggered the modernization of the German civil protection system. At its core are joint hazard estimations by the 16 constituent states and the federal government, and joint crisis management exercises that also integrate private companies as the operators of many of today's critical infrastructures. Important lessons for effective risk management include focusing on interdisciplinary work, joint approaches of different agencies, and public-private partnerships.

Sara Myrdal of the Swedish Emergency Management Agency (SEMA) describes the preparations for a large project aimed at studying critical dependencies in Swedish society. It reflects the need to adjust policy priorities and institutional structures in order to adequately cope with post-Cold War security threats. The project focuses on cross-sector analyses and includes international perspectives for strengthening national emergency preparedness. Earlier experiences in other countries served as important sources of inspiration. Ideas derived from them were

fed into a transatlantic and European context, and the institutionalization of these ideas by the EU and NATO influenced the position of the Swedish government and increased SEMA's chances of winning political backing for this project. Preliminary lessons of this ongoing project include the usefulness of crisis scenarios to attract the attention of stakeholders and explain the complexity of critical dependencies, the importance of communicating with the right people at the right level to confer legitimacy, and the challenge of reconciling broad cross-sector overviews with depth in research and analysis.

Stefan Brem and *François Maridor* of the Swiss Federal Office for Civil Protection emphasize the power-sharing and task-sharing arrangements between the different levels of authority in a strongly federalized political system. In the Swiss civil protection system, the tasks on the federal level mainly pertain to conceptual issues, while the actual implementation of preventative or emergency measures fall into the responsibility of cantons and municipalities. The authors further stress the need to understand the broader politico-legal framework within which the civil protection mechanism works – historical legacies, geographical peculiarities, federalism, or direct democracy – and they trace the steps that led to the adjustment of the civil protection framework after the end of East-West tensions. While the methodological tools need to be adapted to the sector under consideration and to the specific task at hand, an open dialog with other security-relevant authorities, the private sector, academia, and particularly the broader public is always a key part of success.

In the second part, authors from security-related institutions and agencies present their views on risk analysis and management. *Matthias Klopstein* of the Swiss Federal Service for Analysis and Prevention (SAP) claims that the key challenge of an intelligence service is to detect, identify, and indicate overt and potential threats at an early stage. He briefly sketches the strategic purpose, legal framework, and methodological approach of the SAP and particularly emphasizes the benefit of scenario planning for assessing responses to potential threats. He acknowledges that the problem is often not the timely detection of threats, but a lack

of appreciation of the fact that what is perceived as a local threat may have the potential for turning into a major political crisis.

Daniel R. Morris of King's College London and *Gregory Baudin-O'Hayon* of the Criminal Intelligence Service of Canada (CISC) demonstrate the advantage of a systematically developed strategic early-warning system that is focused on emerging threats and targeted to the specific needs of law enforcement decision-makers. They claim that the emergence of intelligence-led policing has altered the way law enforcement agencies must think and operate in the 21st century. Consequently, the traditional military indications and warning analysis has successfully been adapted for use in other domains because its central premise still holds true: events and conditions leading to a crisis situations often generate detectable signals or warning indications that, if correctly pieced together, can portend the coming calamity. The authors show how the CISC's approach to strategic warning intelligence is constructed and they highlight its benefit for the entire law enforcement community.

Roland Kaestner of the German Bundeswehr Academy shows how future analysis serves as a tool for supporting the long-term policy planning and conceptual development of armed forces. He argues that the methods that have been employed in the past for planning to build armed forces for future conflicts are based on assumptions that are only partially appropriate. The complexity of post-industrial force structures and the speed and extent of transformation implies that the planning for complex systems must sufficiently anticipate the future. Therefore, the Transformation Center of the German Bundeswehr has initiated a systematic, strategic analysis of future developments in order to identify security- and force-relevant potential for change at an early stage and to draw conclusions for long-term force planning.

Erik Falkehed of the Conflict Prevention Center of the Organization for Security and Co-Operation in Europe (OSCE) outlines early warning as a mode of operation and a key function of the OSCE. He presents a broad variety of tools that serve this purpose and emphasizes the OSCE's major strengths in early warning: on the one hand, the organization is closely in touch with developments on the ground through its extensive

regional presence in the form of field missions; on the other hand, the information available is very diverse due to a variety of communication channels. However, this diversity also poses the risk that early warning may be improvised, incomplete, and lose its impact due to a lack of organization-wide consolidation. For future endeavors, a pragmatic approach in line with the political nature of the OSCE and its manifold tools is needed to further strengthen its early-warning and political risk analysis capacities.

The third part contains contributions by risk experts from the financial and insurance business community. *Bruno Käslin* of the Institute of Insurance Management at the University of St. Gallen addresses the intensified discourse on emerging risks in many insurance companies. He argues that establishing a systematic approach to emerging risk management is of great benefit because it prevents surprises and provides more time for strategic maneuvers. Based on an in-depth empirical study, he outlines the institutions, processes, and tools and technologies, as well as the cultural factors associated with emerging risk management in four (re-)insurance companies. The critical factor of an effective early-warning system is its ability to effectively transfer its outcome in the institution's practices and procedures. If this attempt fails, it is often due not to "hard factors" such as deficient institutions or processes, but to social and cultural aspects such as a lack of support by top-level management.

Marco Lier of Swiss Re, a globally operating reinsurance company, focuses on the specific issues associated with political country risks. He describes the political country risk rating developed at Swiss Re, which intends to give underwriters a short and quantitative assessment of the country risk of business transactions, particularly in emerging markets. A few years ago, Swiss Re designed and established this tailor-made database for capturing those risk aspects that are actually relevant for the insurance business because the available ratings did not meet an insurer's specific needs. The customized rating system, which he outlines in detail, is currently used for feeding different ratings: while it is primarily used in the niche business of "political risk insurance", in other lines of

business it represents one of several factors to take into account when considering transaction decisions.

René P. Buholzer and *Manuel Rybach* of Credit Suisse, a globally active financial services company, claim that the debate on political risk and public policy issues has dramatically changed in recent years. Internationally active financial institutions face a dual challenge nowadays: they have to respond to the traditional public policy challenges of changes in their regulatory environment on the one hand, and to protect and enhance their reputation as they are increasingly in the spotlight of a critical public and the media on the other hand. With an elaborate process partitioned into three key phases – monitoring, assessment, and lobbying – Credit Suisse is able to contribute effectively to the policy debates that shape its regulatory environment and to protect and foster its reputation among key stakeholders. An important lesson is the need to secure a company-wide unified position on key policy issues and to ensure that all bank representatives speak with one voice on policy matters globally.