

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
INSURANCE AND PRIVATE PENSIONS COMMITTEE**

**Cancels & replaces the same document of 24 November 2009**

**DRAFT GOOD PRACTICES FOR MITIGATING AND FINANCING CATASTROPHIC RISKS**

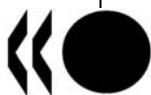
**3-4 December 2009**

*These good practices are based on an action framework and proposed principles drafted by several members of the High-level Advisory Board to the OECD International Network on the Financial Management of Large-Scale Catastrophes. It has been discussed by the Advisory Board.*

*It is circulated for comments at the occasion of the 84th session of the IPPC, to be held on 3-4 December 2009.*

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**JT03274975**



A white paper proposing principles and an action framework for governments, NGOs and the private sector to reduce losses and better cope with the financial impacts of large-scale disasters was drafted by several members of the High-Level Advisory Board to the OECD International Network on the Financial Management of Large-Scale Catastrophes and discussed by this Board. This paper was first presented to the IPPC in July 2009, with feedback sought on whether it might merit being turned into a Recommendation.

This document presents a first draft of good practices on mitigation and financial management of catastrophic risks, drawn from the above-mentioned white paper as well as from past work on catastrophe risk management achieved under the aegis of the Network. It is submitted for consideration and discussion by IPPC Delegates. Once revised according to Delegates' initial comments, upon their agreement, and taking account of the comments by the Legal Directorate, this document could be issued for public consultation as a draft framework of good practices, providing the basis for a possible recommendation.

## GOOD PRACTICES FOR MITIGATING AND FINANCING CATASTROPHIC RISKS<sup>1</sup>:

### 1. PRINCIPLES FOR DISASTER MANAGEMENT STRATEGIES

Strategies for coping with large-scale catastrophes should be anchored in an integrated framework of risk assessment, risk perception, risk management and disaster response<sup>2</sup>.

#### 1.1. Risk Assessment

- **Creating a culture of risk assessment:**

**Governments should undertake a public national disaster risk and vulnerability assessment that should be re-evaluated every 5 years. Mapped hazard data should be made publicly available and regularly updated where hazard levels are altered (e.g., due to climate change) or where there is improved science.**

*The prime tasks in assessing the risk are to measure the likelihoods of possible disasters, the distributions of their consequences across different stakeholders and the uncertainties surrounding these estimates. For each type of risk and level of severity, government should be able to quantify the costs it would have to bear under current programs as well as proposed strategies should one or more of these disasters occur tomorrow (e.g. costs of protecting critical infrastructure and public assets, expected financial relief to victims of the disasters - people, communities and businesses - and macroeconomic consequences).*

- **Quantifying primary and secondary effects:**

**Risk assessment should not be limited to the direct and immediate potential effects of a catastrophe (destroyed and damaged assets and affected victims) but also integrate secondary and indirect social and economic effects through geographical interdependencies and over time.**

*Given the growing interconnectedness of activities, a catastrophe that occurs in one area can have ripple effects on many other regions and global markets. Some of these effects can also be enduring so the total effect may greatly exceed the immediate physical loss.*

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<sup>1</sup> These good practices are based on a white paper prepared by Paul Kleindorfer (Insead), Howard Kunreuther (Wharton School), Erwann Michel-Kerjan (Wharton School) and Richard Zeckhauser (Harvard University), members of the High-Level Advisory Board to the OECD International Network on the Financial Management of Large-Scale Catastrophes.

<sup>2</sup> For the purpose of this document,

- *Risk assessment* refers to modeling risks (probability and consequences) and characterising the uncertainties surrounding the likelihood of certain events occurring and the direct and indirect consequences on affected stakeholders;
- *Risk perception* refers to how individuals and organisations process information on the likelihood and consequences of events (e.g., some individuals residing in hazard-prone areas may behave as if the event “cannot happen to me”) and evaluate alternative options for dealing with the risk (e.g., importance of goals/plans in the decision making process). Stakeholders are likely to have different values, goals and priorities and hence perceiving risks differently.
- *Risk management and disaster response* refer to alternative strategies involving the private market and public policies for reducing the likelihood of occurrence of a catastrophe risk and/or its consequences (e.g., financial protection, economic incentives to invest in risk-reduction measures, pre-positioning of assets and the design of effective logistics and relief efforts to respond to particular events, well enforced rules and standards, legal environment).

- **Developing national data collection and sharing:**  
National data collection on relevant hazards and vulnerabilities should be undertaken as a basis for a sound foundation for risk assessment. In countries where insurance is well-developed, governments should also facilitate a national data collection effort to measure insurance penetration and exposure at the firm and individual level, as well as to track insurance losses resulting from catastrophic events systematically.

*National data collection on insurance exposure allows providing a nation's decision-makers better knowledge of the level of financial protection in place for recovery and restoration activities.*

- **Promoting regional and international cooperation in the collection and sharing of data on large-scale disasters as well as in catastrophe risk modelling:**  
Governments and relevant public and private institutions in member countries and non-member economies would benefit from the promotion of regional and international cooperation in the collection and sharing of data on exposures to large-scale disasters as well as in the modeling of the nature of these risks and the uncertainties surrounding them. The OECD can be instrumental in this respect.
- **Harmonising and upgrading the collection of information on catastrophe risk:**  
Governments should encourage a greater level of detail, relevance and reliability in the parametric data collected and made available by national meteorological, seismological, and hydrological agencies on catastrophe events. Moreover, the development of harmonised taxonomies and categories should facilitate access to and comparison of information, data and statistics on catastrophe losses and possibly also on catastrophic risk exposures on a global scale.

*The development of global, open source disaster risk assessment models promoted by the OECD through the Global Earthquake Model (GEM) initiative constitutes an important first step in this direction; other natural perils should be considered as well. Natural hazard maps should also be integrated, stored and managed in a transparent and consistent way: mapped hazard information should be made publicly available and it should be used for long term planning and infrastructure decision-making.*

## **1.2. Risk Perception**

- **Recognising the behavioural biases and heuristics used by individuals and groups:**  
Risk perception and management strategies should address behavioural biases and heuristics (rules of thumb) utilised by both decision makers, groups and the general public.

*It is often not the risk estimate, but how one processes that estimate, that will lead to specific actions (of lack thereof). Failure to recognise this element is likely to jeopardize any national risk management strategy. This implies incorporating into disaster risk management strategies the most advanced results of research in cognitive and behavioural sciences. Understanding individual decision processes (including underestimation of disaster probability and tendencies toward myopia) as well as social interactions and short-term goals/priorities is of critical importance in this respect.*

- **Increasing risk awareness and improving the quality of disaster risk reduction education efforts:**  
Human-induced factors greatly contribute to direct and indirect costs of disasters. Changes in patterns of human behaviour, perception and decision-making at all levels of government and society which can lead to a substantial reduction in disaster risk should be promoted.

*The OECD Policy Handbook on Natural Hazard Awareness and Disaster Risk Reduction Education provides clear guidance to develop sound strategies in this field and it constitutes a useful benchmark to assess the situation in a given country or region and to identify possible improvements.*

### **1.3. Risk Management**

- **Promoting cost-effective prevention, adaptation and mitigation measures:**  
Efficient risk prevention, adaptation and mitigation where the expected long-term discounted benefits in reduced losses exceed the costs must be promoted as a fundamental building block of disaster management strategies.

*To achieve efficient prevention, adaptation and mitigation requires well-designed risk assessments (i.e. the use of good data and catastrophe modeling) to understand how expected losses will be reduced. The role of incentive systems including the use of insurance (e.g. premium reductions for policyholders / tax incentives for the formation of catastrophe risk reserves for insurance companies), or the use of building codes (e.g. incentives to build disaster resilient houses and buildings) and land use regulation, zoning and planning to encourage mitigation should be examined.*

- **Developing relief and recovery strategies:**  
Relief and recovery strategies should be developed as a prerequisite for determining ways to provide emergency rescue and to finance immediate recovery should a disaster occur.

*These recovery strategies need to be linked to alternative mitigation measures to better understand the relationship between actions taken before a disaster (ex ante measures) and those required after a catastrophe occurs (ex post actions).*

- **Equity and affordability:**  
The costs of mitigation measures and financial protection tools, such as insurance, should be commensurate with the means and abilities of individuals and companies to undertake or pay them.

*If the cost of insurance truly reflects risk, one might need to consider providing financial assistance to individuals in hazard-prone areas needing special treatment (e.g., low-income residents and businesses). Financial support should come from general public funding and not through artificially low insurance premiums which do not provide the right signal of exposure to the people since they can perceive low-priced insurance as an indicator that the risk they face is low. To this end, governments could provide insurance vouchers that can be used only to purchase insurance. Grants or low interest loans from the public sector could also be provided to these individuals and businesses to encourage them to invest in cost-effective mitigation measures that would reduce vulnerability and, as a consequence, the cost of financial protection. In developing countries, this effort might require financial support from the international community. This principle is not intended as a proposal for a vast shift in resources toward low income residents or poor countries. If such entities do not engage in appropriate mitigation measures, or purchase adequate insurance, relief efforts following a disaster will cost donor sources considerable amounts. The transfers contemplated should be measured against those amounts.*

- **Financial management of catastrophic risk:**
  - Governments should give careful consideration to politically realistic *ex ante* financial arrangements aimed at allocating resources efficiently, given equity concerns. Economic analyses should be undertaken to determine the respective financial responsibilities of all stakeholders under different catastrophe scenarios.

- **Private/public partnerships and a layered approach involving citizens, the insurance industry, financial markets and where relevant governments should be considered as an option.**
- **Possible *ex ante* pooling arrangements to ensure adequate financial capacity to cover peak risks should also be examined, as well as the potential value for governments of capital market solutions in catastrophic risk transfer, such as risk securitisation.**

*The design of a disaster management strategy needs to consider how losses after a disaster will be allocated among victims (people and firms), and private sector businesses that insure against risk (e.g., financial institutions, insurers, reinsurers and businesses themselves through reserves), and all levels of government (local, state, federal; i.e., present and future generations of taxpayers).*

- **Equal treatment:**  
**In developing a disaster management strategy, all citizens of a given country should be treated equally regardless of sex, race, ethnicity and class.**

#### **1.4. Disaster Response**

- **Pre-positioning of post-disaster capabilities and responsibilities:**  
**If the responses to disasters are to be effective, there must be pre-positioning and pre-testing of post-disaster capabilities and responsibilities before the catastrophe occurs.**

*As the development and deployment of these capabilities is costly and will affect ultimate outcomes in the event of a disaster, the design of response capabilities must be subject to the same dictates of efficiency, equity and behavioural realism as noted above.*

*The development of *ex ante* measures to mitigate and foresee efficient coverage of the financial consequences of disasters will need to take account of two potential challenges and obstacles:*

- *Government relief, while often necessary, may somewhat deter in the long run *ex ante* action by potential victims of future catastrophic risks: if one knows in advance that the government (or international donors) will provide ample financial assistance after hardship to those who were not protected, there will be less of an economic incentive for those in hazard-prone areas either to engage in loss reduction measures prior to a disaster and/or to purchase adequate insurance coverage (when available). Governments initiatives should thus be designed to avoid as much as possible crowding out of individual initiatives and/or moral hazard;*
- *Short-term electoral consideration may deter *ex ante* action by governments: elected officials at the local, state and federal levels can benefit politically from providing financial assistance to their constituencies following a disaster but not necessarily from inducing/requiring people to adopt costly protection measures beforehand. Indeed, given short-term re-election considerations, a city representative is likely to vote for measures that allocate taxpayers' money elsewhere that yield more political capital.*

Risk financing and risk transfer tools, such as insurance, can play a fundamental role in reducing the negative economic impacts of catastrophic risks. It is, therefore, very important to fully recognise the policy implications of their use in the context of national or regional disaster risk management strategies.

## 2. PRINCIPLES FOR THE USE OF INSURANCE AND OTHER FINANCIAL INSTRUMENTS AS A POLICY TOOL

- **Financial protection tools, such as insurance, should be made available, either privately or publicly, to enable all economic actors to plan ahead before a catastrophe occurs.**

*All households and businesses at risk should be strongly encouraged, through economic incentives, or, as necessary, legally required to carry financial protection at some appropriate level: compulsion of catastrophic risk insurance may allow to develop more comprehensive insurance coverage and build national insurance capacity. Micro-insurance schemes can be developed to assist affected individuals and businesses in low-income countries. Where the national strategy calls for reliance on such insurance for covering catastrophic losses, those who fail to purchase insurance should not be provided with ex post compensation by the government. This policy should be made explicit publicly ex ante (prior to the disaster) and adhered to ex post (following a disaster).*

- **Insurance premiums should be based on risk.**

*Risk-based insurance provides signals to individuals and firms as to the hazards they face, thereby encouraging them to engage in cost-effective mitigation measures that can reduce their vulnerability. In light of equity and affordability concerns, governments could provide financial assistance to purchase insurance and/or to adopt prevention and mitigation measures, rather than requiring insurers to set premiums artificially low.*

- **Government should consider using the existing insurance infrastructure for premium collection, loss adjusting, claims payment and distribution of insurance products, even if these products are backed by public money.**

*There are great advantages to having an operational private insurance industry: first, the insurance market may be able to absorb some catastrophe risk that would otherwise fall on the government; second, even if there is no sufficient financial capacity in the market to provide meaningful protection, the administrative resources of the private insurance industry can provide a platform for establishing a government funded and directed program. In this respect, insurance companies can perform key services such as marketing of the policies, premium collection, loss adjusting and claims payment.*

## 3. POSSIBLE INNOVATIONS TO BE DEVELOPED UNDER OECD LEADERSHIP

- **A specific structure within the OECD should be developed that could act as an international information-sharing platform providing data publicly available on large-scale catastrophes.**

*Obtaining relevant information and data under a harmonised framework, assessing risk and understanding risk perceptions of the relevant stakeholders are key ingredients for the development and evaluation of risk management strategies. Such initiative could be undertaken in conjunction with other organisations in the public and private sectors that already collect relevant data.*

- **The OECD should support comparative studies to understand relevant constraints and institutional arrangements in developed and developing countries that are likely to affect the availability of catastrophe coverage and the roles of government and the private sector in catastrophe risk management (e.g., nature and potential development of insurance markets, availability of mortgages, defining the respective roles of local and national governments).**

*In this regard, based on the stocktaking and comparative review already performed by the OECD during the past years, it will be important to examine alternative strategies practiced by different countries for dealing with specific risks with a view to understanding their relationship (either explicit or implicit) to a set of underlying guidelines and principles such as those noted above. This exercise could be done for a series of specific risks.*

- **The OECD should consider developing a comparative survey instrument to be administered regularly in OECD countries to better understand risk perception and the way specific policies are viewed by key stakeholders (the general public, private and public sector organisations).**
- **Case studies and examples should be developed to showcase innovations in catastrophe risk assessment, management and financing in OECD member countries<sup>3</sup>.**

*Given growing interdependencies between countries and industries due to globalisation of social and economic activities, top decision makers of non-OECD countries should be able to turn more systematically toward the OECD for advice on their disaster management issues and the development of new strategies. It is also in the interest of developed countries to assure that the citizenry and businesses of low- and middle income countries are less vulnerable to future disasters. Losses in these countries could indeed have ripple effects on global supply chains, markets and international security world wide as well as making demands on relief and multinational lending organisations more pressing.*

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<sup>3</sup> Illustrative innovations in catastrophe risk management :

- Better organisational solutions to assure well-enforced standards and regulations (e.g., building codes; land-use regulations)
- Better warning systems to reduce loss of lives, injuries and damage
- Well designed emergency plans that can be implemented following a disaster
- Development of financial solutions enhancing micro-finance/micro-insurance (protecting individuals and small businesses locally) as well as macro-finance/insurance (protecting government)
- Long-term insurance for providing protection against disasters (rather than the current widely employed one-year format)
- Long-term loans for encouraging mitigation measures coupled with economic incentives for undertaking these actions (e.g., insurance premium reductions).