



Formose-Changes Post Graduate Course « Protecting Mountain Societies from Natural Hazards: Plans or Dams »
Barcelonnette, 23-29 June 2013

Promoting Public/Private Partnerships (PPPs) for the development of natural catastrophe insurance in Europe

Roland Nussbaum, CEO, MRN



Il s'agit d'un projet de loi qui vise à
améliorer la gestion des risques naturels

Promoting PPPs for the development of NatCat insurance in Europe

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OUTLINE

- Introductory remarks
- Insurance and NatCat DRM
- PPPs for NatCat risk transfer
 - Case studies on IKM4DRR initiatives
 - Initiated by the insurance associations (MRN)
 - Expanded at PPP level (ONRN)
- From stakeholder categories to networks and collective governance circles, as research « living labs »
- To conclude: Expectations from EU Research




1. A practitioner's perspective...

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- CEO of Mission Risques Naturels www.mrn.asso.fr
- Member of **governance bodies at national level** : CMI, ONRN
- Board/Standing Committee Member of Thematic Associations:
 - **Association française pour la prévention des catastrophes naturelles** (Excutive Board) www.afpcn.org
 - **Association française de génie parasismique** (CAREX)



www.afps.org

- Member of Scienfic Advisory Board of  www.fondation-maif.fr
- Teaching : Agro/Mines/Ponts ParisTech,
MASTERS 2 PRO : ENASS, Lyon III, Montpellier III, Paris XII, UHA, etc

- Member of Sustainable Non Life Committee  www.insuranceeurope.eu
- *Expert to EC DG R&I, World Bank/IFC GFDRR Results Management Council*
- *End user representative, Advisor to EU FP7 Projects: CapHaz-Net, CONHAZ, KNOW-4-DRR, SMARTeST, STAR-FLOOD...*



A very topical subject !

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Major NatCat events are currently triggering new developments towards more PPPs for risk transfer:

- Extreme River Floods May-June 2013 in Central Europe
 - Austria, Czech Republic, Germany, Hungary...
- Extreme torrential Floods in South of France (Agly, Lourdes)
- Floods in the UK (2007, 2009, 2012) – « Statement of principles » ends on June 30th 2013,
- Floods in Australia (2010-2011)
- Earthquakes in Chile (2011), Japan (2004, 2011), New-Zealand (2011)
- Cyclones and Tornadoes in USA (2004, 2005...)

New developments in public DRM policy (EU level)

- Green paper on the insurance of natural and man made catastrophes
- Strategy for climate change adaptation
(action 8: innovative insurance products)



1. Insurance and NatCat DRM: setting the scene (concepts, definitions) & brief outlook at EU level



1. Insurance and NatCat DRM

1.1. Setting the scene

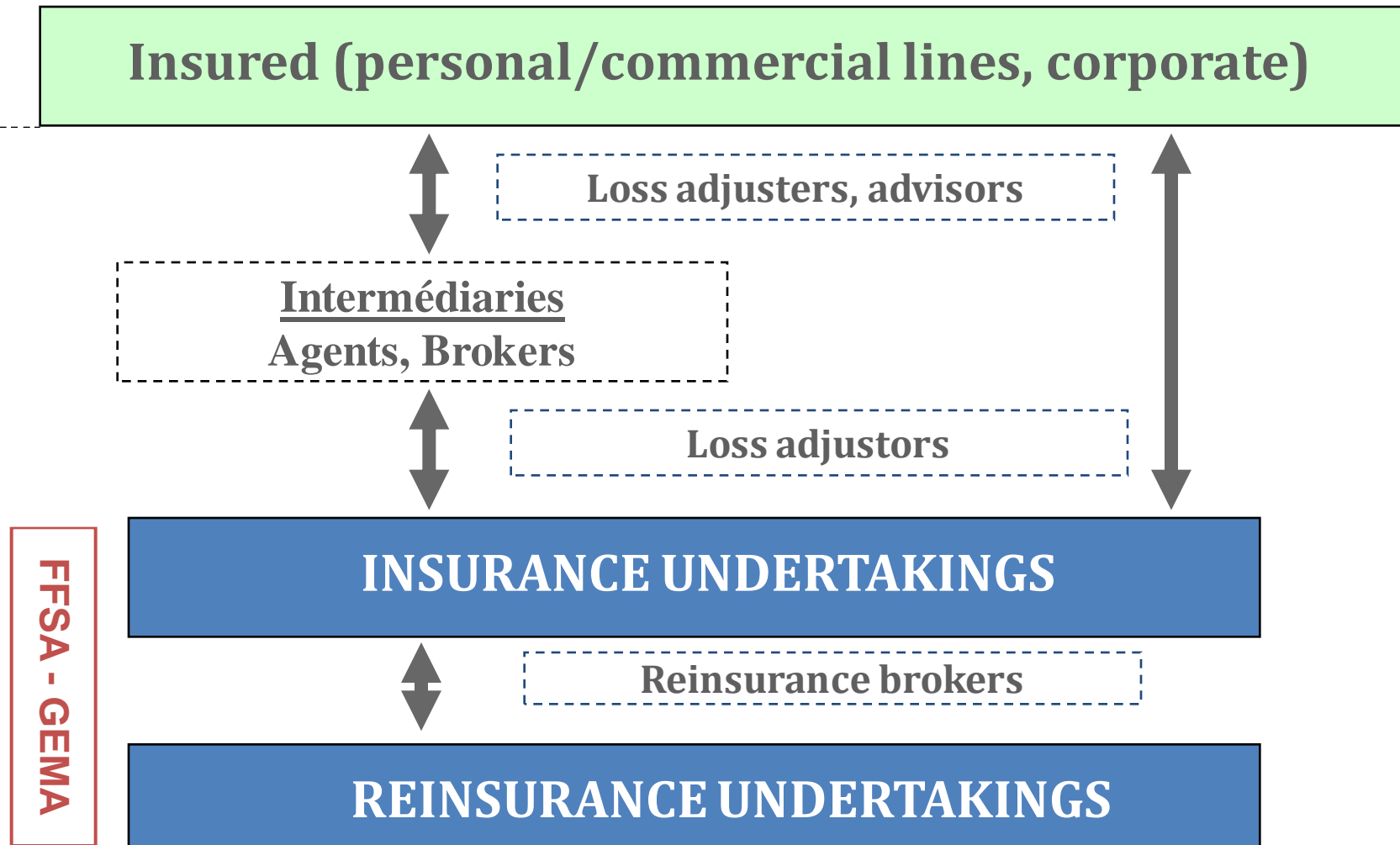
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- Insurance industry:
 - Players & value chain,
 - Impact on the economy
 - Products and market penetration
- Insurance as a risk transfer market instrument:
 - Risk retention and transfer
 - Alternative market instruments
- Insurance as an economic incentive to risk reduction
 - Information asymmetries: adverse selection, moral hazard
 - Insurance pricing: premium, deductibles
 - Product bundling, compulsory extended coverage
- Risk cost mitigation at individual and society level
 - Solidarity and liability,
 - Risk sharing



Insurance industry (value chain)

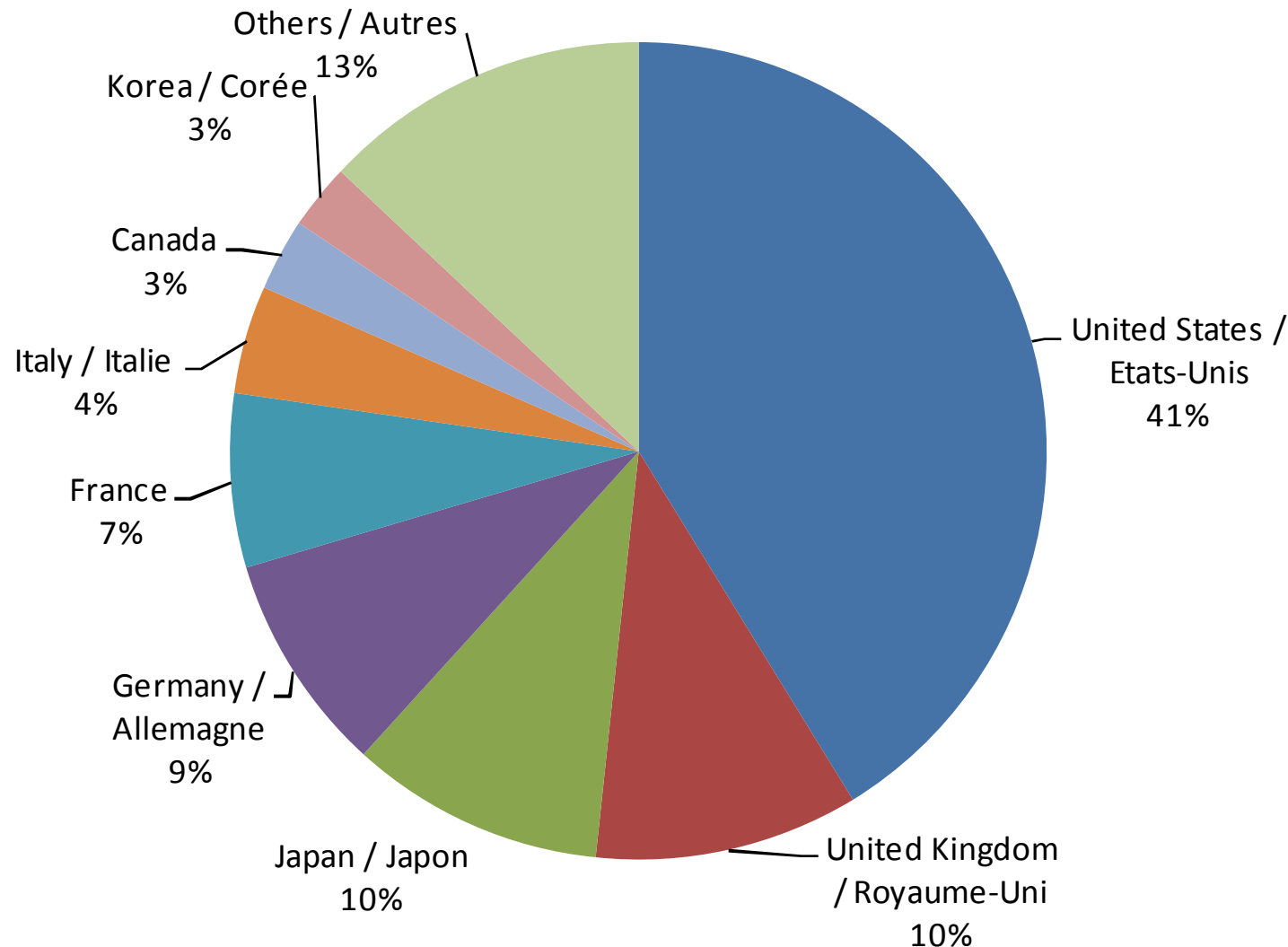
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Insurance market shares / OECD countries (1)

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Market share in OECD - Total / Part de marché dans l'OCDE - Total

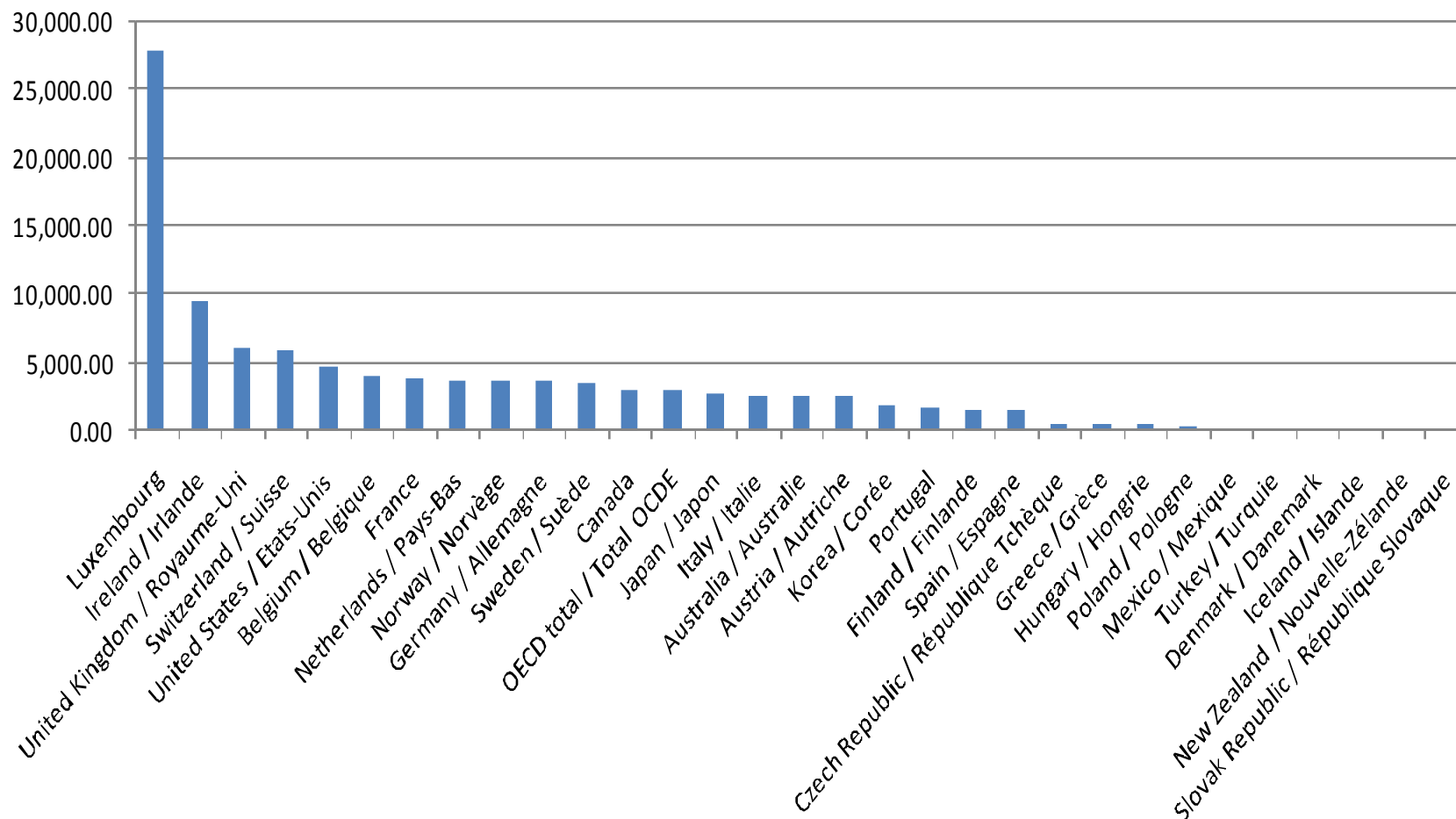


source :  OECD

Insurance premium per capita (2)

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Premiums per capita - Total / Primes par tête - Total (US dollar per inhabitant / Dollar des EU par habitant)

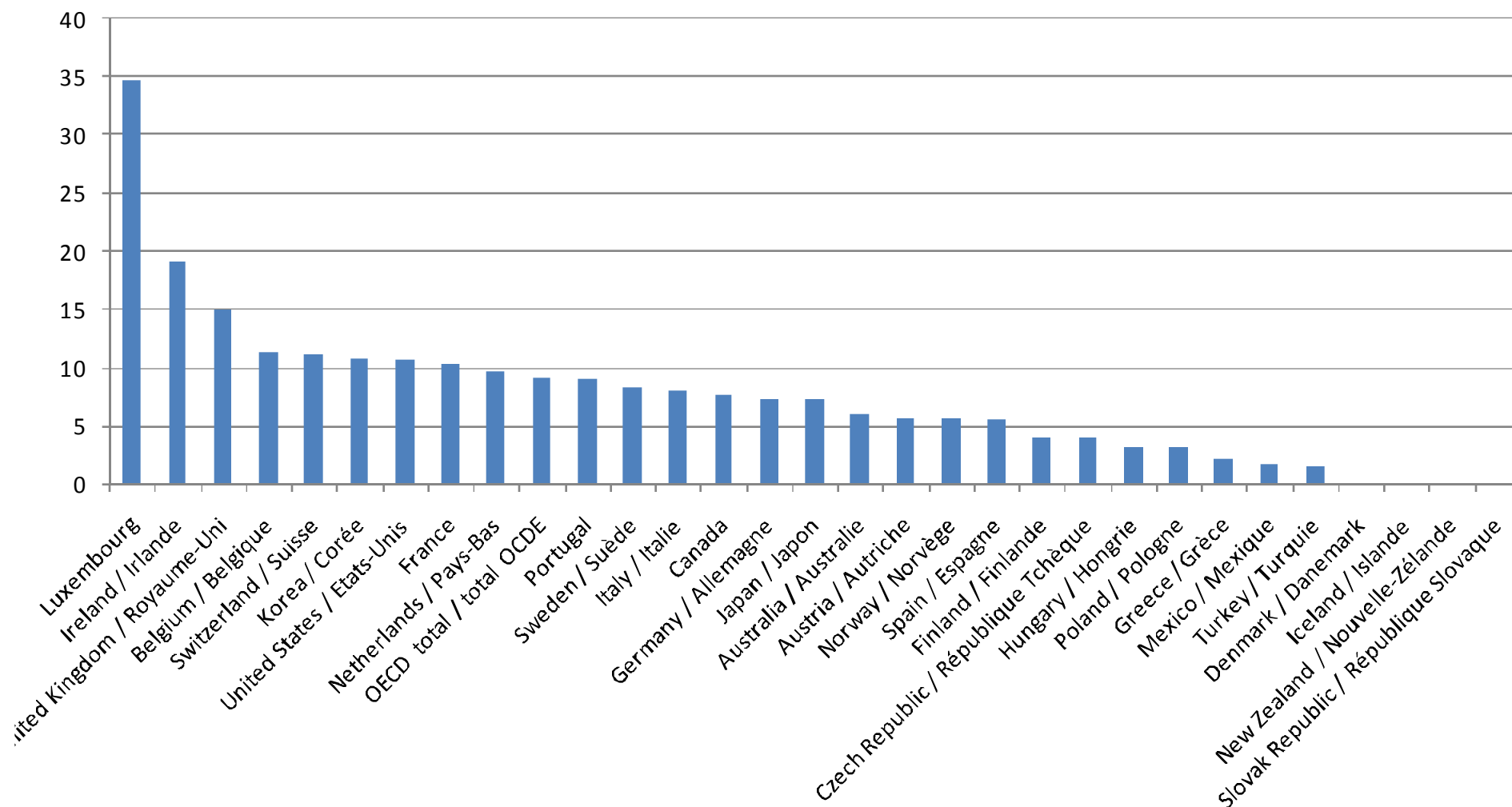


NB. Les cas du Luxembourg et de l'Irlande ne sont pas significatifs

source : OCDE

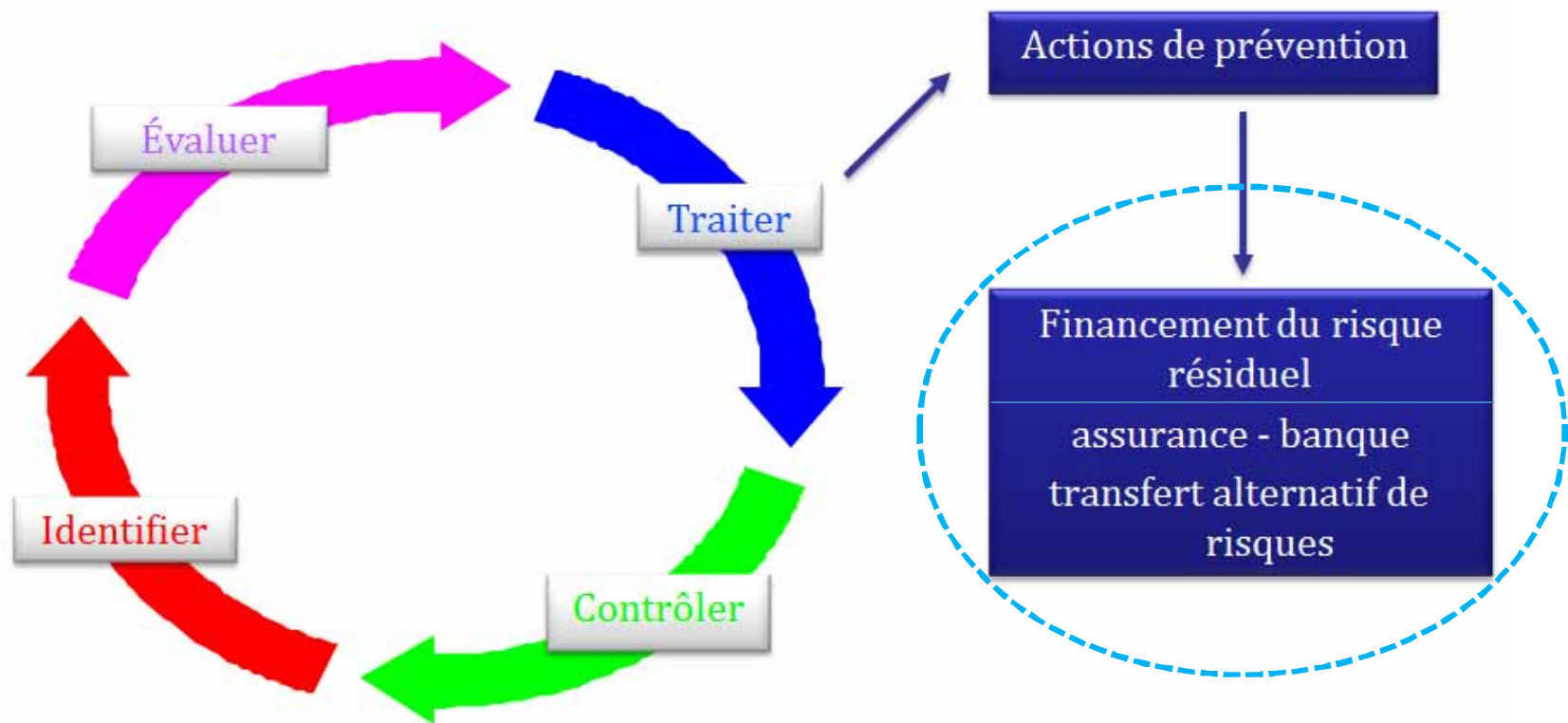
Insurance premiums as % of GDP (3)

Premiums/GDP - Total / Primes/PIB - Total (As a percentage of GDP / En pourcentage du PIB)



NB. Les cas du Luxembourg et de l'Irlande ne sont pas significatifs

source : OCDE



Residual risk treatment

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Risk retention : accepting to take over totally or partially the risk cost and to assume consequences

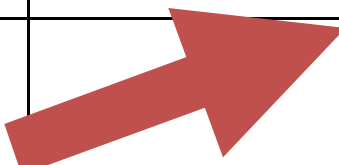
Risk transfer : the financial impact is carried by someone else, though a contractual arrangement
eg. Insurance contract: limits and costs of transfer are specified.



Cost assessment approaches

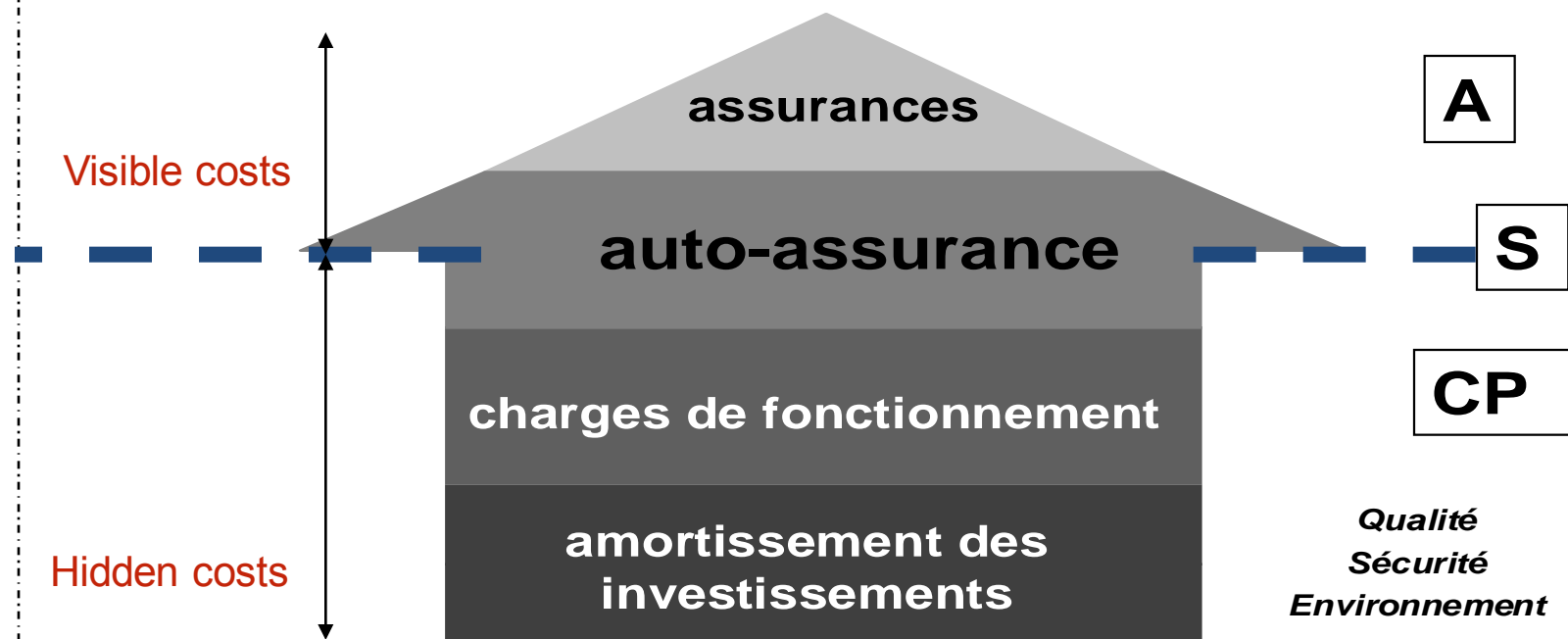
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| Approaches | <i>A posteriori</i> per event | <i>Ex ante</i> per scenario |
|---|--|--------------------------------|
| micro | Loss adjustment report | Site survey |
| Meso, macro (portfolio, network) | First estimate Accounting, Reserving | modeling |
| statistic | Average costs Damage functions | |



L'iceberg du coût global du risque

représentation schématique du concept de « total loss control »

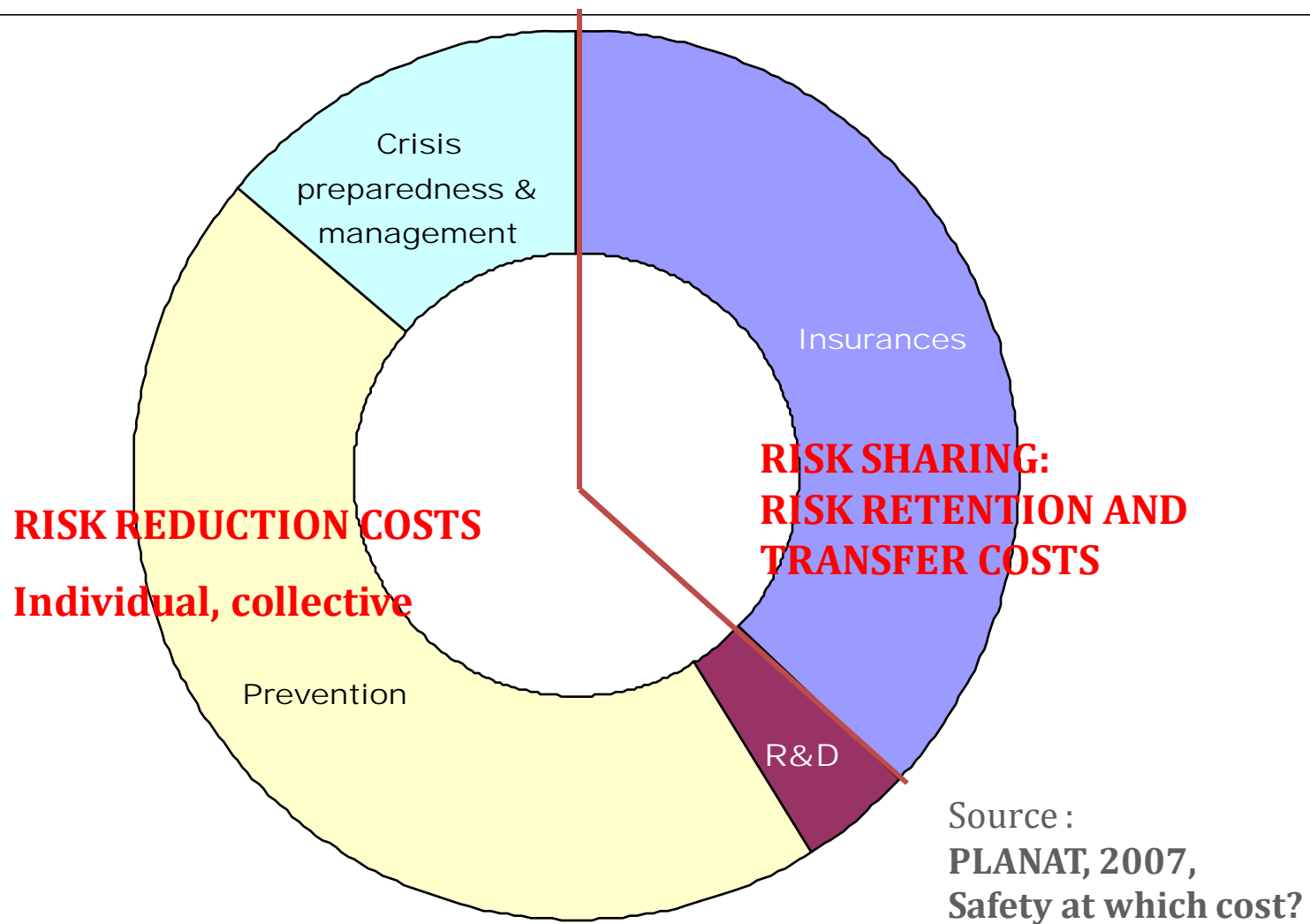


$$\text{coût global du risque : } C = A + S + CP$$



Trend towards integrated DRM costs control
Is it an equilibrated country profile?

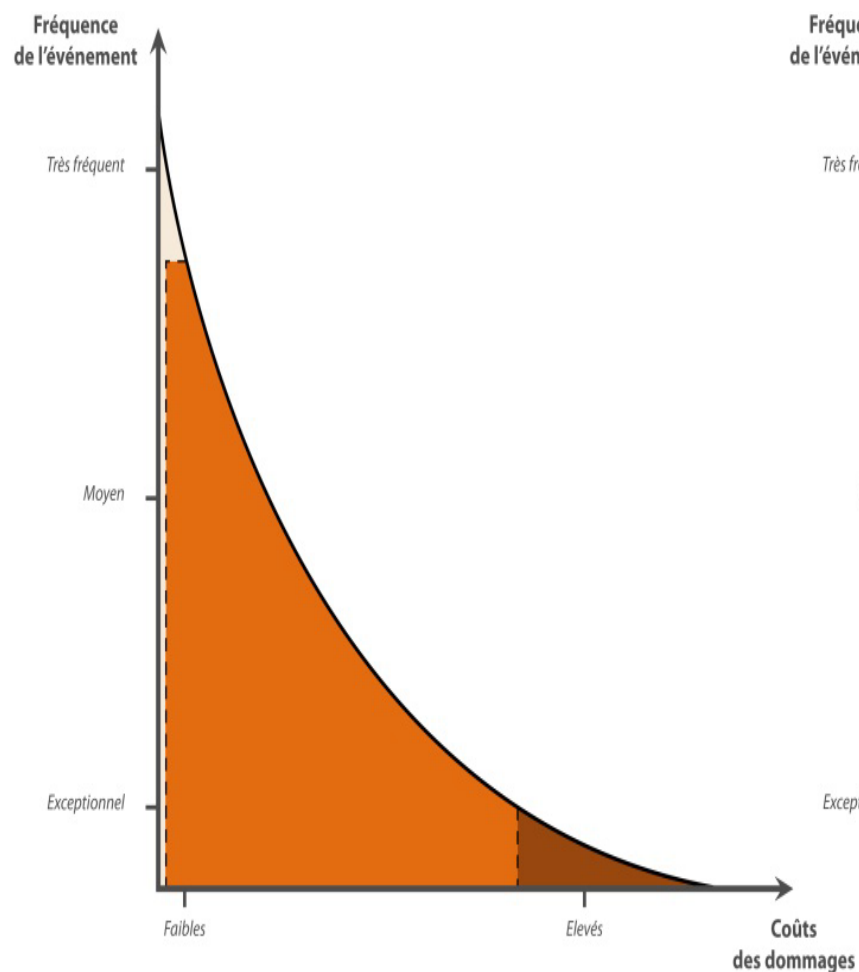
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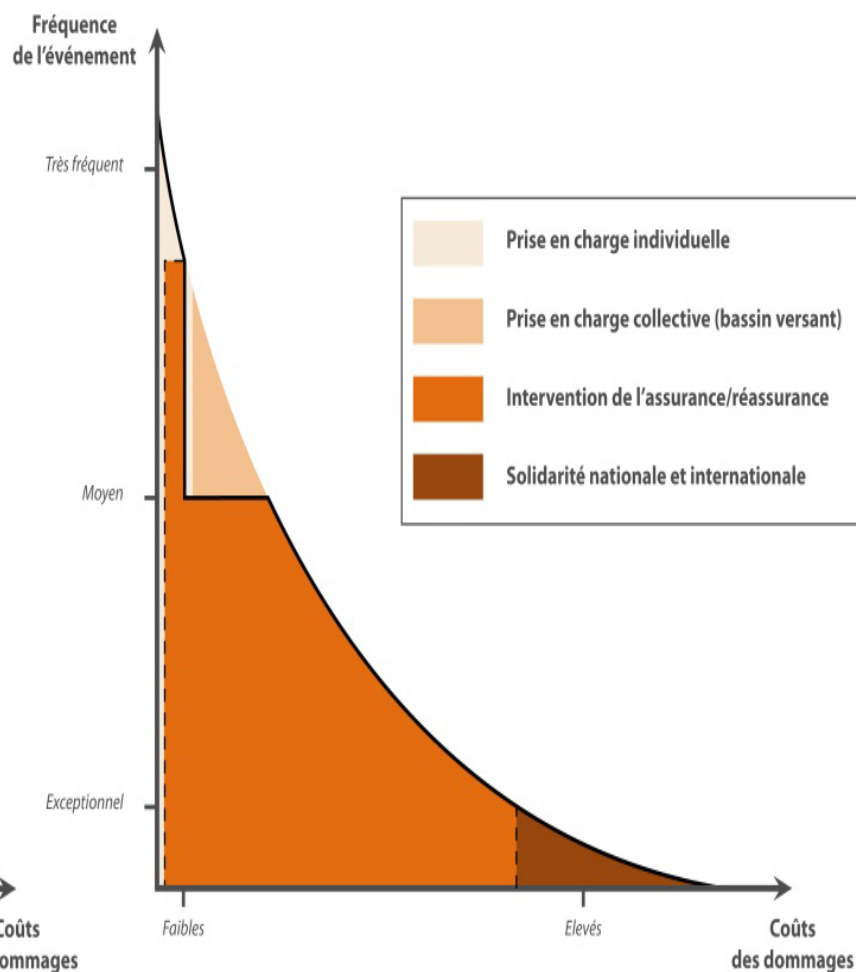
Risk sharing, retention and transfer, along LEP* Curve (eg. for floods under NatCat regime)

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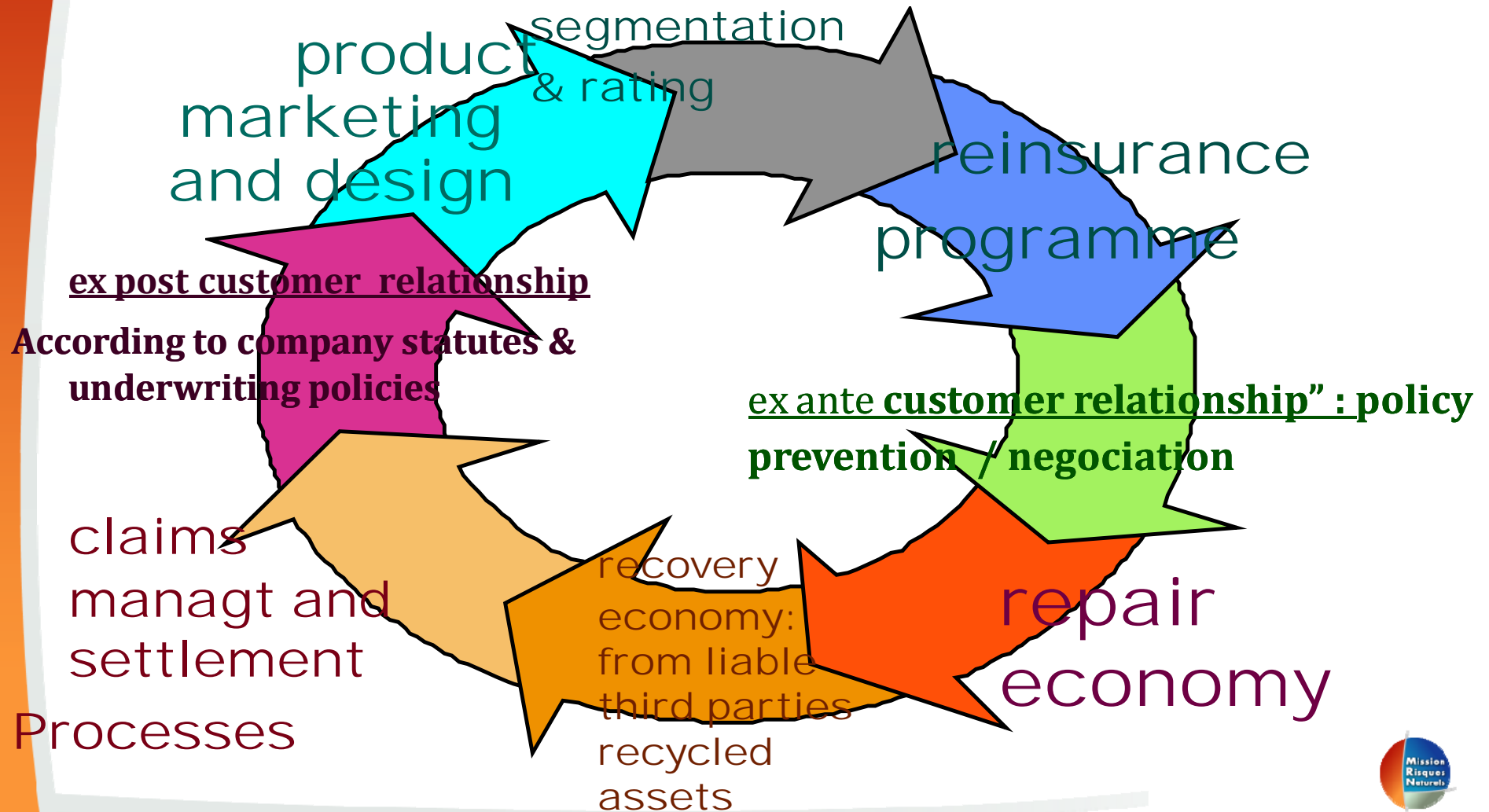
Without DRR measures at risk basin level

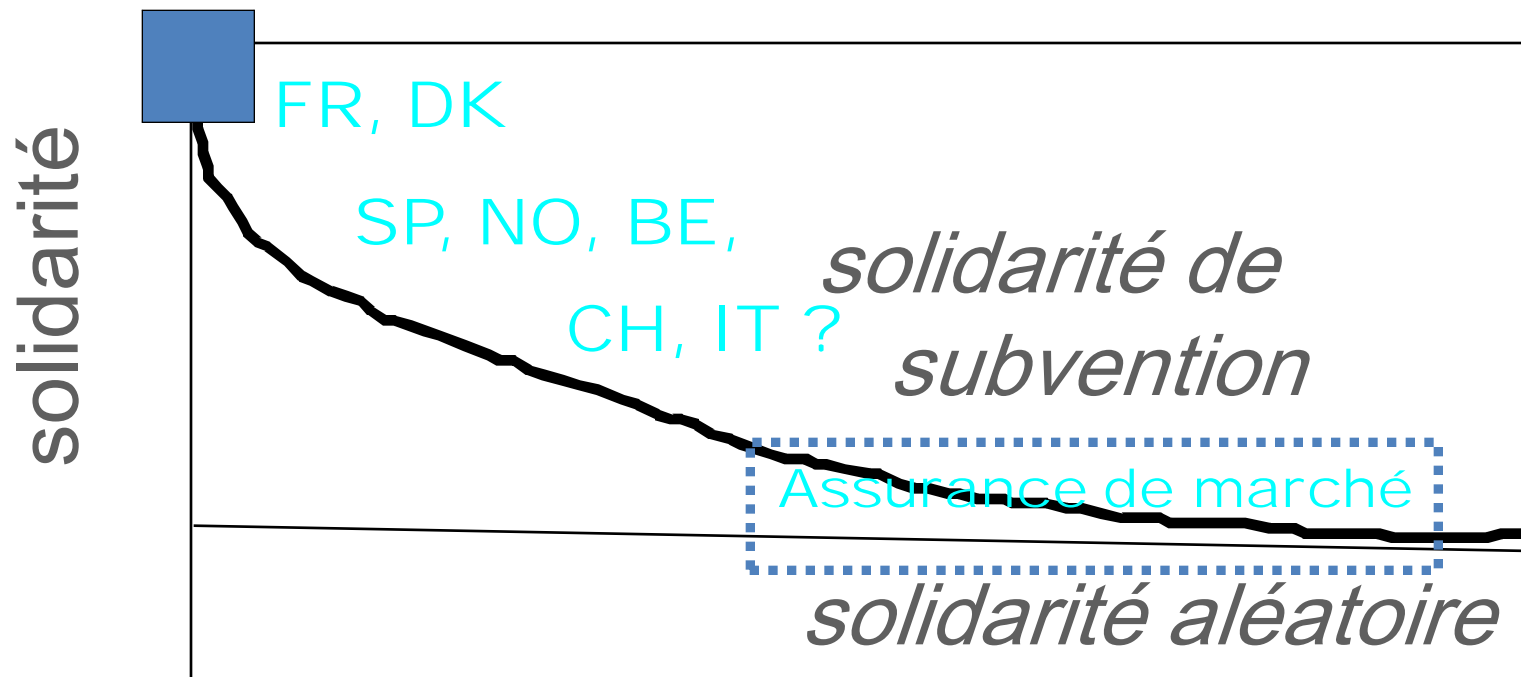


With structural DRR measures at risk basin level



* LEP Curve = Loss Exceedance Probability Curve





Segmentation selon nbre de
facteurs explicatifs de risque utilisés



Risk sharing

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Risk sharing occurs when the overall risk burden is taken over on the whole LEPC, resulting of a combination of solutions:

- Individual / collective risk reduction,
- Then risk retention/transfer
 - through insurance solutions
 - If the country risk profile requires it with respect to limited market capacities, through national solidarity :
 - Public fund
 - State acting as reinsurer of last resort.



1.2. Insurance and NatCat DRM - Brief outlook at EU level

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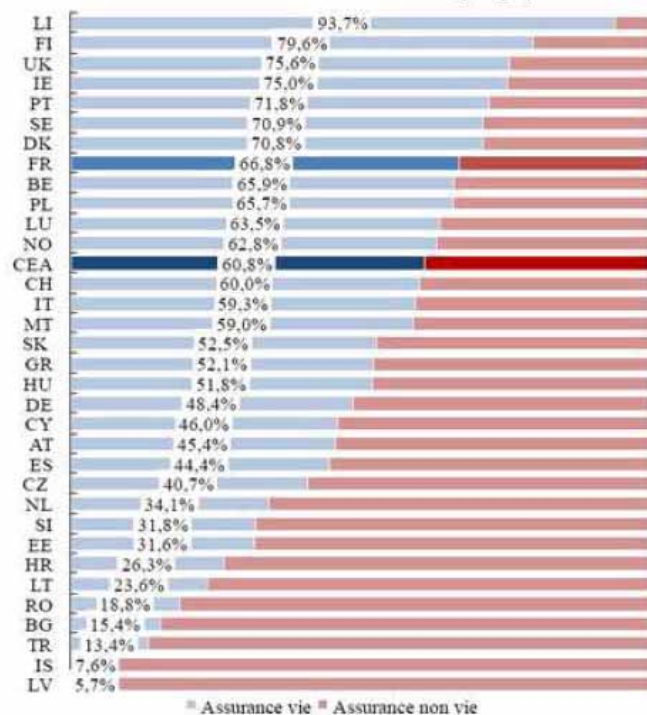
- In a market economy, insurance is the primary economic resilience tool
- Insurance penetration, particularly NatCat cover for personal lines, remains low in many EU countries.
- Therefore the need to develop insurance solutions:
 - « to make room for insurance » by improving both :
 - the perception by the individual of its needs to transfer part of his risks,
 - the insurability conditions: country risk profile, especially in terms of frequency exposure
- EU policy drivers:
 - Art 100.2 of EC Treaty
 - EU Climate Change Adaptation Strategy (16/04/2013)
 - Green Paper on Catastrophe exposures and their coverage (public and private) in EU Member States (16/04/2013)



Natural events insurance as part of property insurance, in EU / France

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Part des assurances vie et non vie dans chaque pays en 2008 *



Pour l'Allemagne, les données incluent les « Pensionskassen » et les fonds de pension.
Pour les Pays-Bas, le marché étranger est inclus.

AT : Autriche
BE : Belgique
BG : Bulgarie
CH : Suisse
CY : Chypre
CZ : République Tchèque
DE : Allemagne
DK : Danemark
EE : Estonie
ES : Espagne
FI : Finlande
FR : France
UK : Royaume-Uni
GR : Grèce
HR : Croatie
HU : Hongrie
IE : Irlande
IS : Islande
LI : Liechtenstein
LT : Lituanie
LU : Luxembourg
LV : Lettonie
MT : Malte
NL : Pays Bas
NO : Norvège
PL : Pologne
PT : Portugal
RO : Roumanie
SE : Suède
SI : Slovaquie
SK : Slovaquie
TR : Turquie

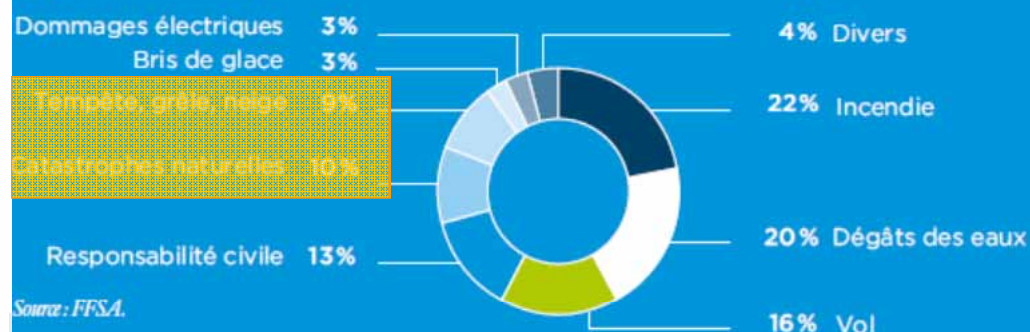
| Cotisations 2008 en milliards d'euros | |
|---------------------------------------|-------------|
| Automobile | 17,9 |
| Multirisques habitation | 7,2 |
| Biens professionnels | 5,9 |
| Biens agricoles | 1,0 |
| Catastrophes naturelles | 1,4 |
| Construction | 2,5 |
| Responsabilité civile générale | 3,4 |
| Protection juridique | 0,7 |
| Transports | 1,1 |
| Crédit-caution | 1,0 |
| Assistance | 1,1 |
| Pertes pécuniaires | 1,6 |
| Total des affaires directes | 44,8 |

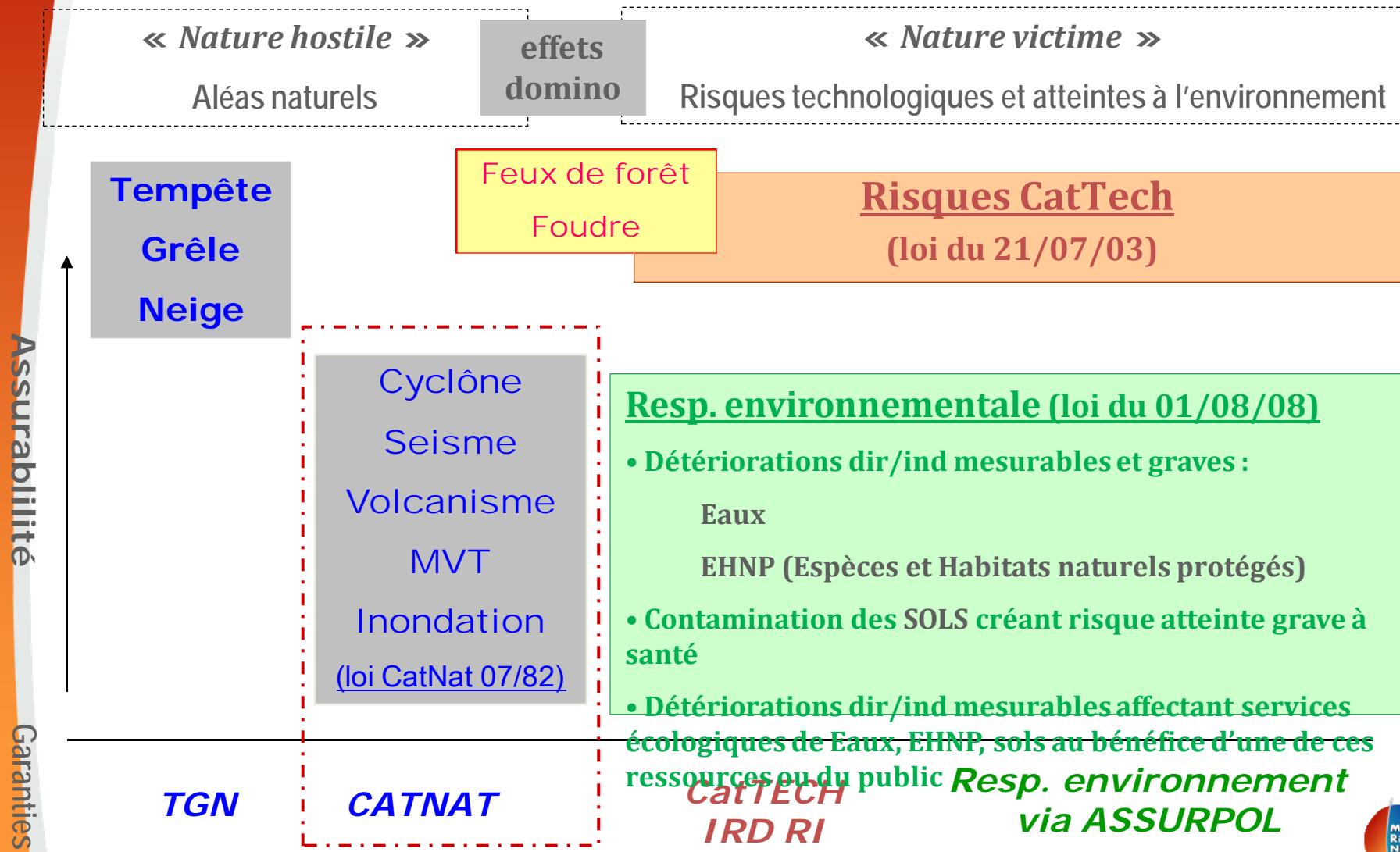
Premium income related to natural events = # 3 bn €/yr:

- 1,5 bn €/yr : NatCat Cover

- 1,5 bn €/yr : Storm, Hailstorm, Weight of snow covers

Répartition des garanties au sein des contrats multirisques habitation en 2008





Resp. environnementale (loi du 01/08/08)

• Détériorations dir/ind mesurables et graves :

Eaux

EHNP (Espèces et Habitats naturels protégés)

• Contamination des SOLS créant risque atteinte grave à santé

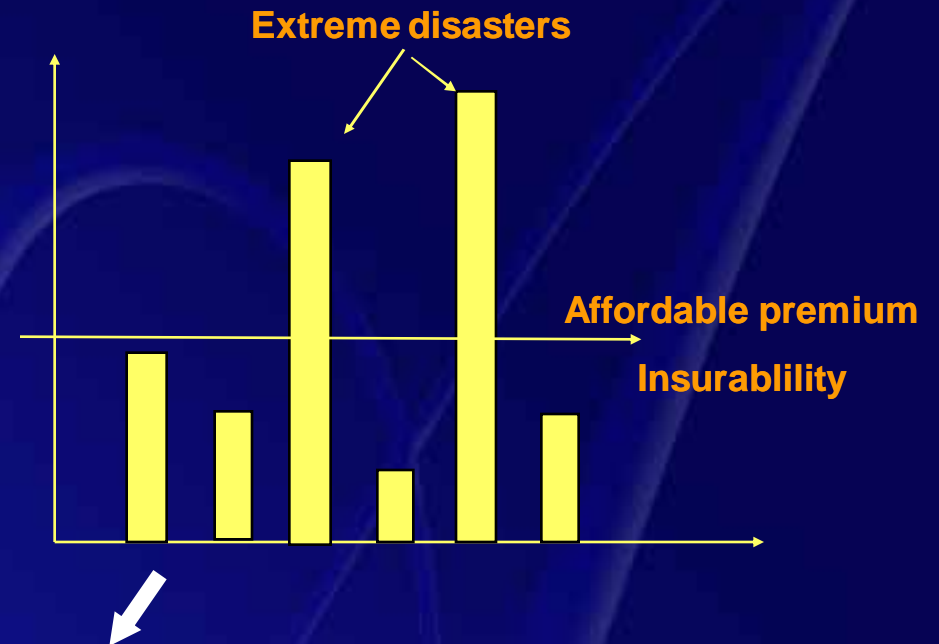
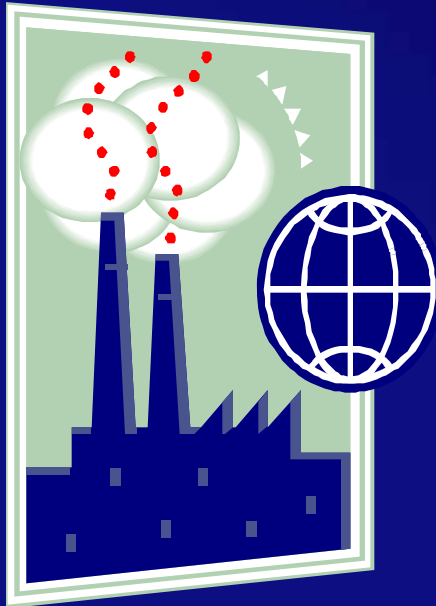
• Détériorations dir/ind mesurables affectant services

écologiques de Eaux, EHNP, sols au bénéfice d'une de ces ressources ou du public

Resp. environnement via ASSURPOL



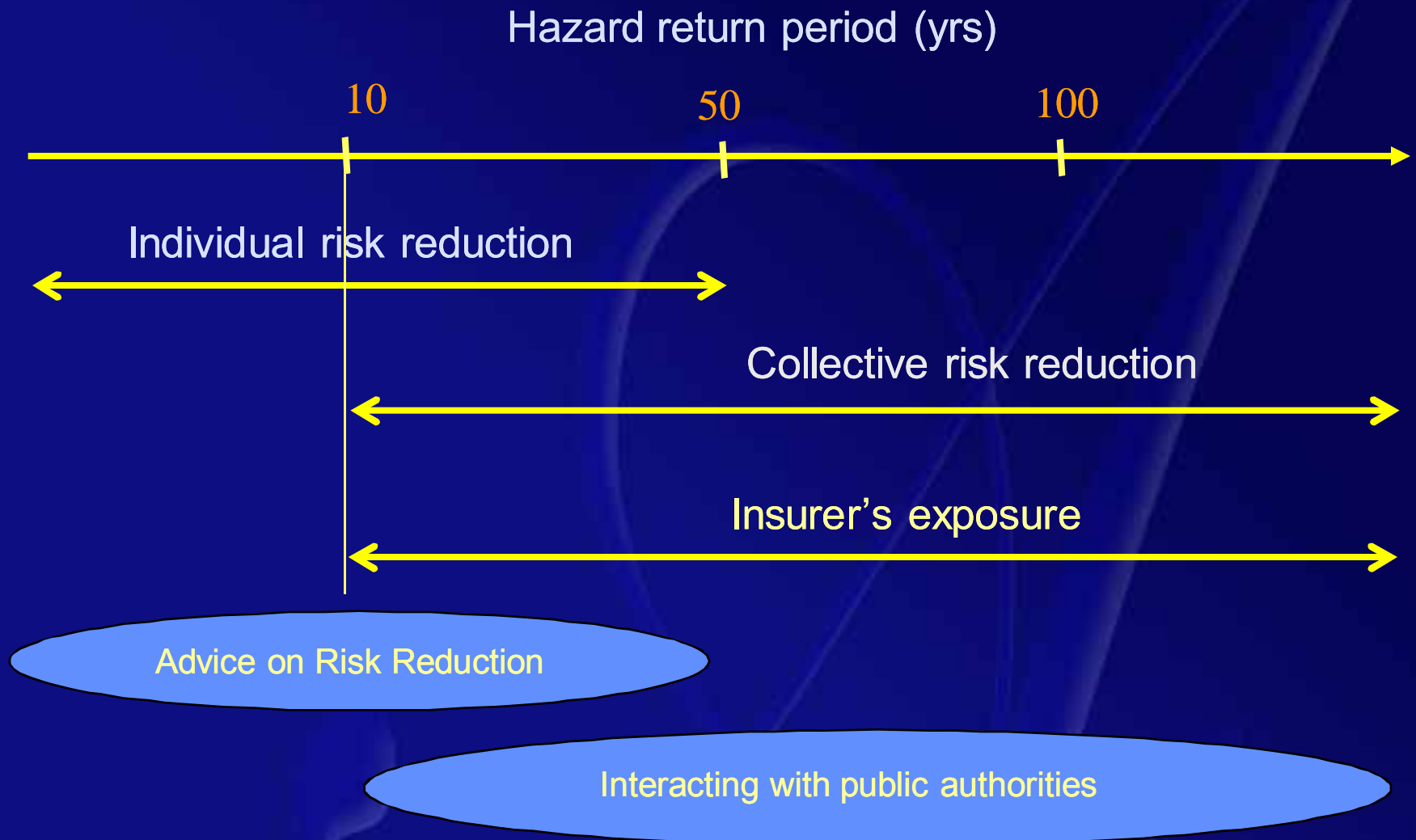
Insurance and risk reduction incentives



Incentives through insurance:

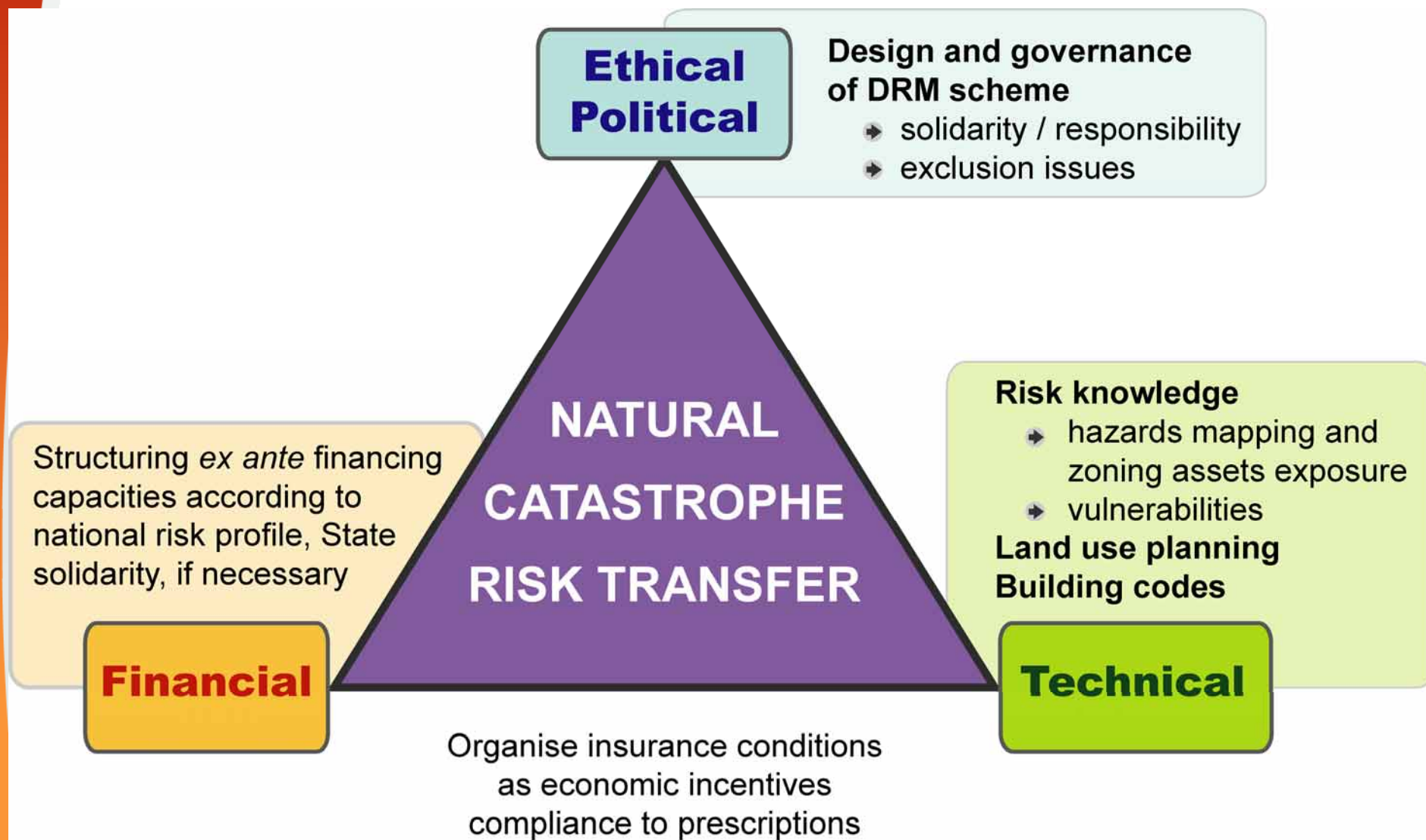
- Premium
- Deductible
- Cover limits
- Exclusions
- Risk reduction requirements

Flood risk management in France risk reduction vs risk transfer



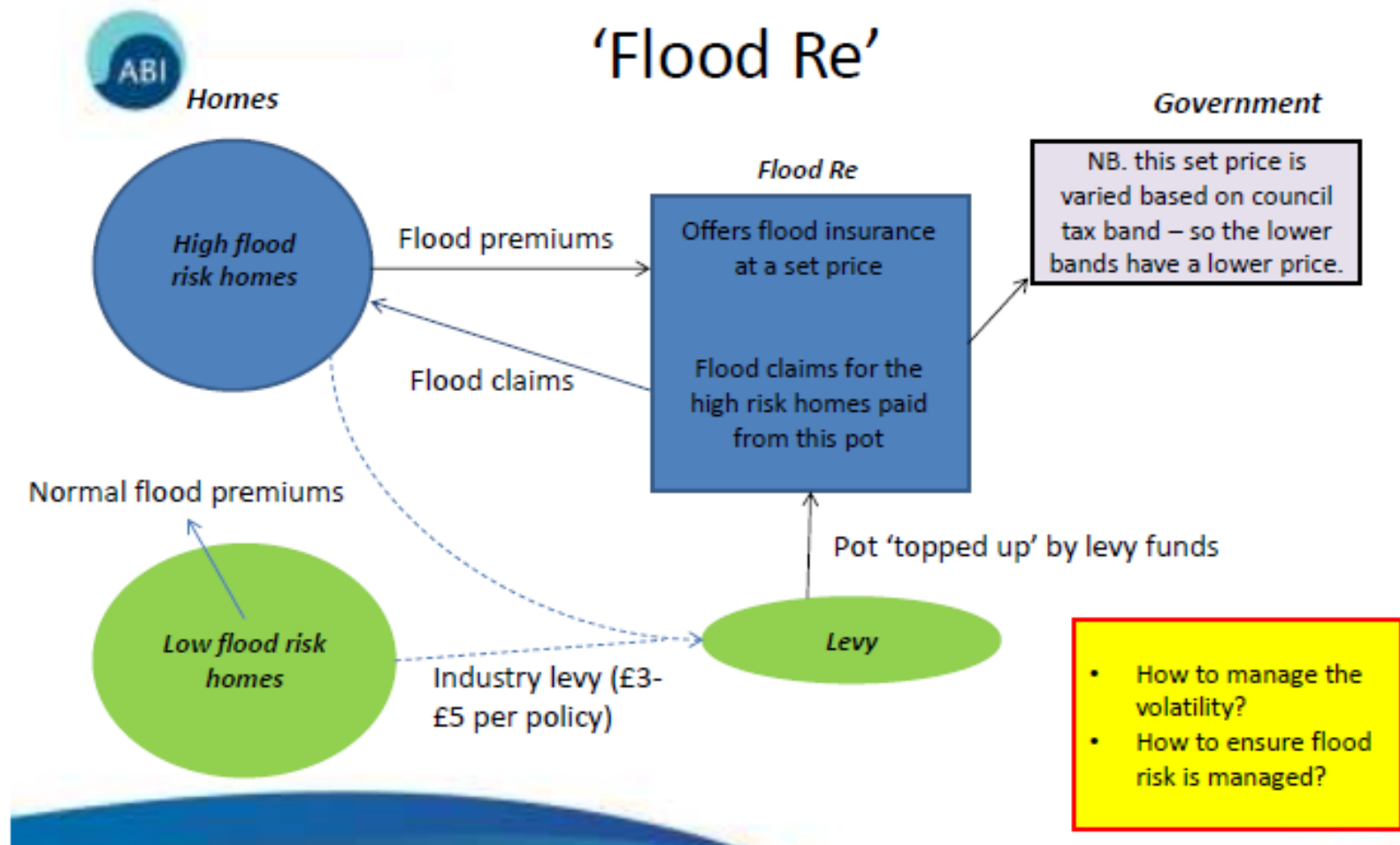
2. Public Private Partnerships (PPPs) for NatCat risk transfer

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A PPP flood insurance scheme under discussion in the UK

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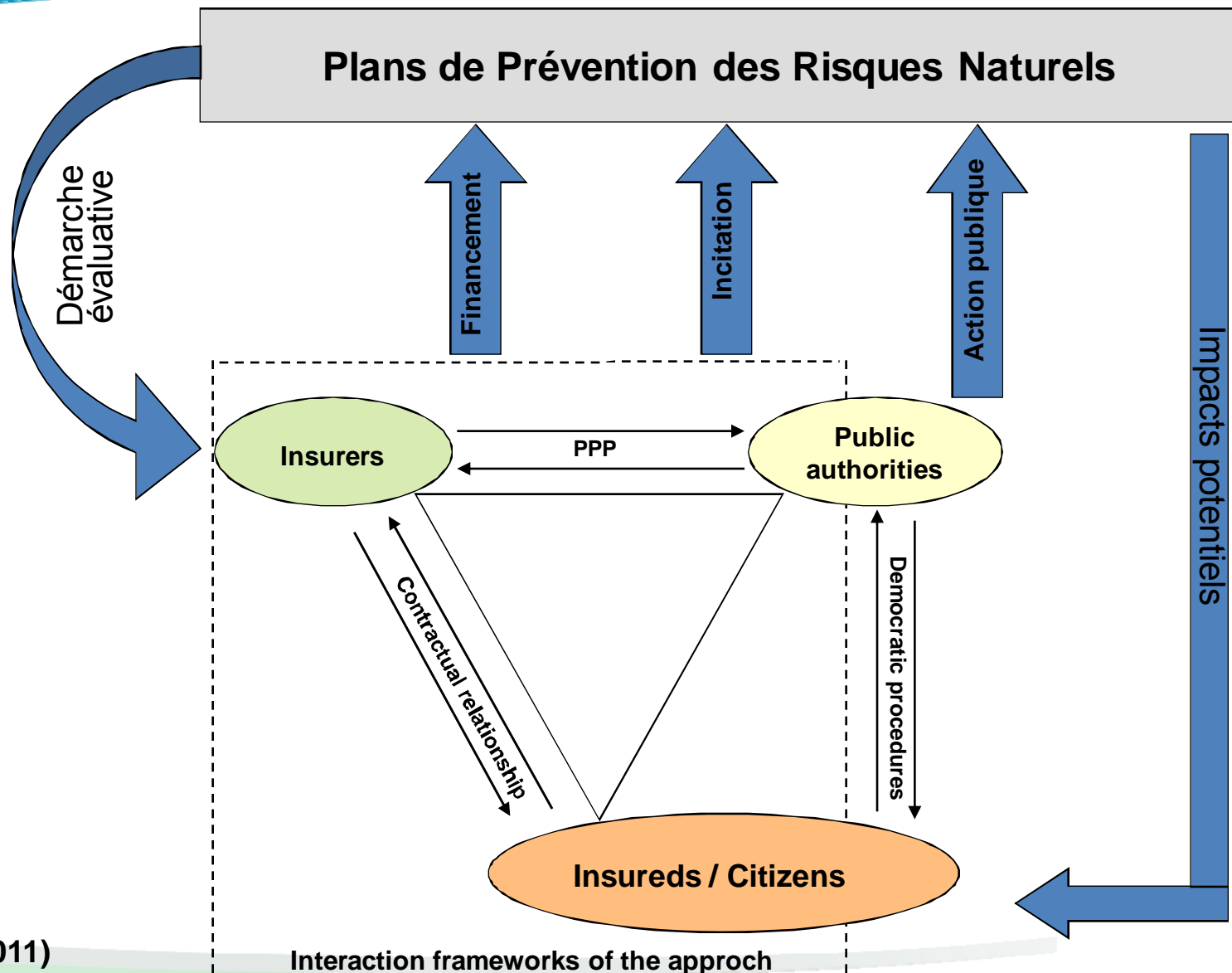


Two linked components



Synthesis scheme of evaluative approach carried out at MRN

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(Gérin, 2011)

3. From stakeholder categories to networks and collective governance circles, as « living labs »

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- **From stakeholder categories:**
 - State, local authorities,
 - General public,
 - NGOs, Media...
 - Private stakeholders, in their customer relationships and institutional communication/behavior:
- **To networks and collective governance circles, as « living labs »:**
 - Insurance industry as a whole, and its representative bodies at territorial, national and EU levels : **MRN , Insurance Europe**
 - National DRR platform : COPRNM and **AFPCN**
 - National/territorial collective governance bodies :
 - COPRNM (general DRP policy) and CDRNM (strategic land use planning)
 - **CMI** (FRM strategy and resources allocation) and COMITER
 - Public Private Partnership : **ONRN**, as a joint agreement State – CCR – MRN for data gathering and sharing, public policy evaluation



3.1. Introducing MRN

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Mission des sociétés d'assurances pour
la connaissance et la prévention des risques naturels

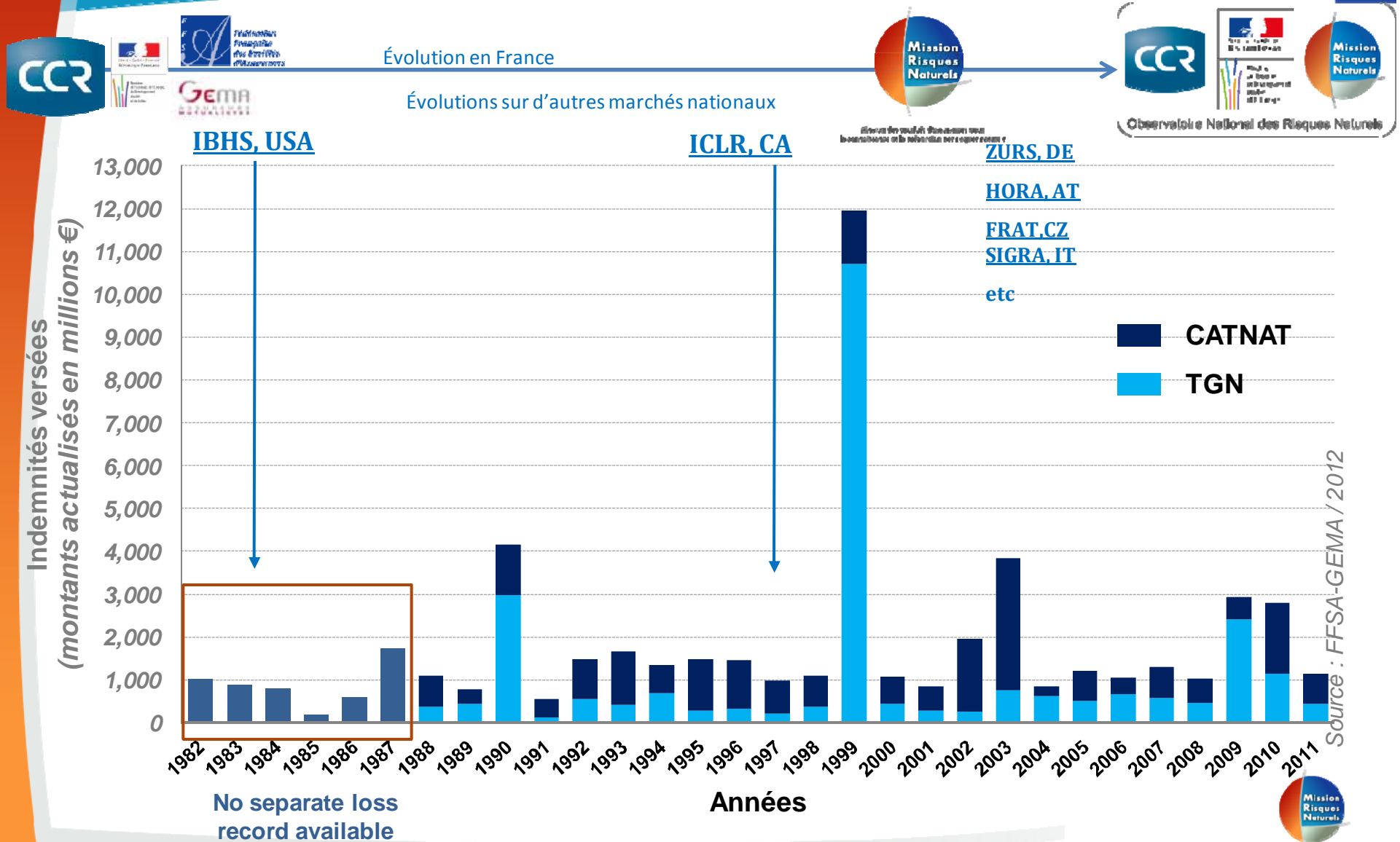
www.mrn.asso.fr

**An association dedicated to NatCat risk knowledge and reduction,
in partnership with public authorities, created in 2000 between:**



Synchronoptic perspective the last 30 years: annual loss records – DRM PPP developments in France and other countries

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MRN, a unique social innovation

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- in the US:



Where building safety research leads to real-world solutions.

- in a few EU countries:

- ✓ PPP agreements :
 - AT (VVO and Lebensministerium)
 - UK (ABI, CML and Environment Agency)
- ✓ Project teams: country (name of flood risk zoning project)
 - AT (HORA), CZ (FRAT), DE ('ZURS GEO), IT ((ANIA))
- ✓ Policy advisors : ABI



Featuring MRN

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- **Activities :**

- ✓ **Institutionnal**
- ✓ **Studies**
- ✓ **Operational General Interest Support Services to Member Insurance Companies**



- **Permanent staff members:**

engineers, geoscientists, PhD students...

- **Collaborative network of hundreds of correspondents :**

- ✓ **insurance companies that are members of FFSA or GEMA**
- ✓ **State and local authorities**
- ✓ **Stakeholders' and thematic associations**



interacting with national and local stakeholders



**Voluntary representatives
of member insurance companies**

- ✚ Take part to collaborative governance bodies
- ✚ Technical support to municipalities in their information duties
- ✚ Teaching to public civil servants
- ✚ Conferences and public debates



Partnership EP Loire - MRN

Asset exposure assessment in cooperation with EP Loire team

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Insurers contribute to incentivize their professional lines customers for a flood vulnerability diagnosis

l'Europe s'engage
le bassin de la Loire

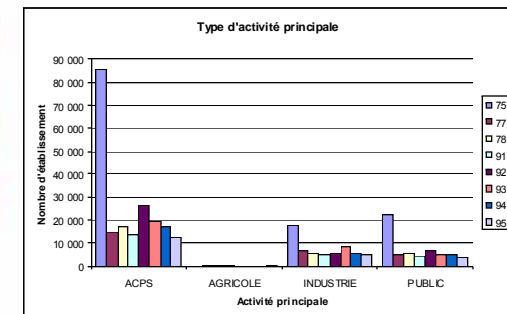
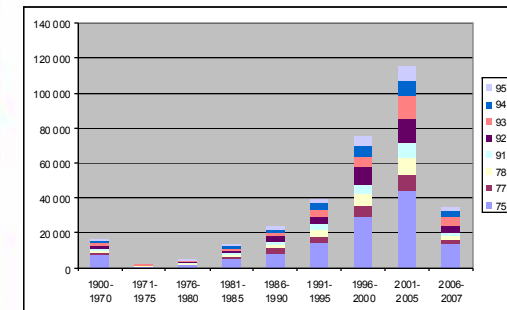
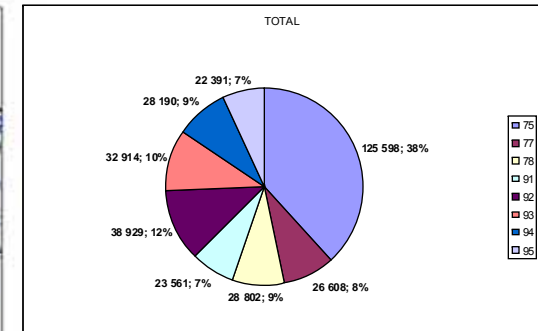
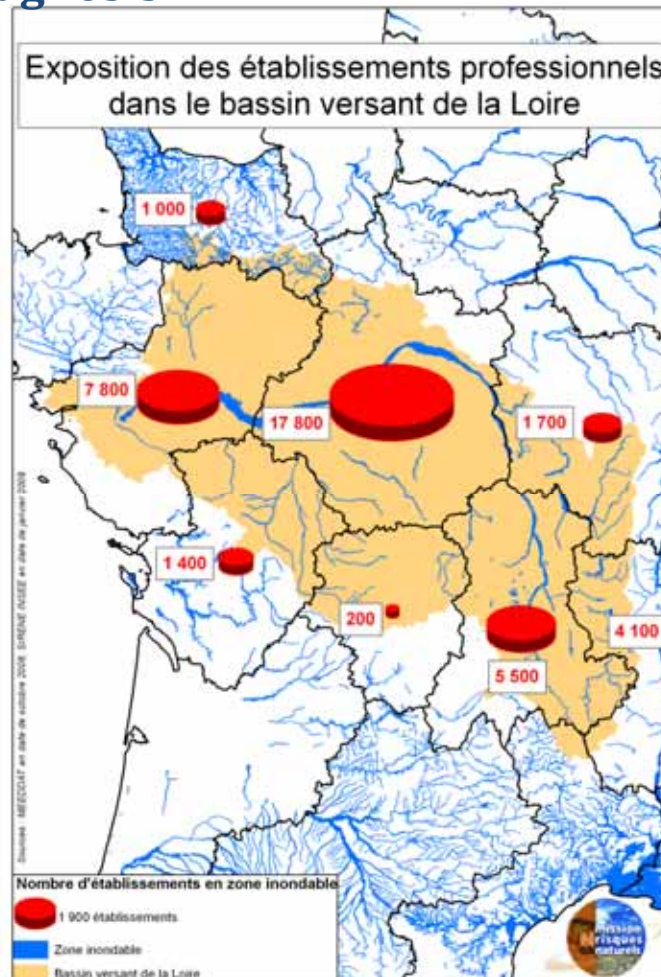


Votre assureur vous informe

Le risque inondation existe !

Pour prévenir les dommages en cas de crue majeure de la Loire ou de ses affluents, faites réaliser un diagnostic de vulnérabilité aux inondations de votre entreprise. Il vous indiquera les mesures à mettre en œuvre pour limiter les conséquences de la catastrophe sur votre activité et votre personnel.

Information et demande de diagnostic : www.plan-loire.fr/diagnostics-entreprises/



3.2. National Collective governance bodies : COPRNM and CMI

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Governance at the national level

- Advisory Council for the Prevention of Large-Scale Natural Risks (COPRNM): created to give opinions and make proposals to the Minister of Ecology in the field of natural risk prevention. Presided by a MP and made up of representatives of:
 - All ministries concerned
 - National and local elected officials
 - Civil society including insurance companies
 - Experts

The advisory council is consulted about all policy changes in natural risks management

- Joint Commission « Floods »: created from members of the COPRNM and the National Committee for Water, and extended to relevant stakeholders in flood management. Steering committee for the national policy on flood risk management. Co-presided by two MP and made up of representatives of:
 - Ministries concerned
 - Local elected officials
 - Civil society including insurance companies
 - Experts



The Joint Commission has to draw up the national strategy for flood management and is responsible for giving a « label » to local flood prevention action plans

3.2. Regional Collective governance bodies

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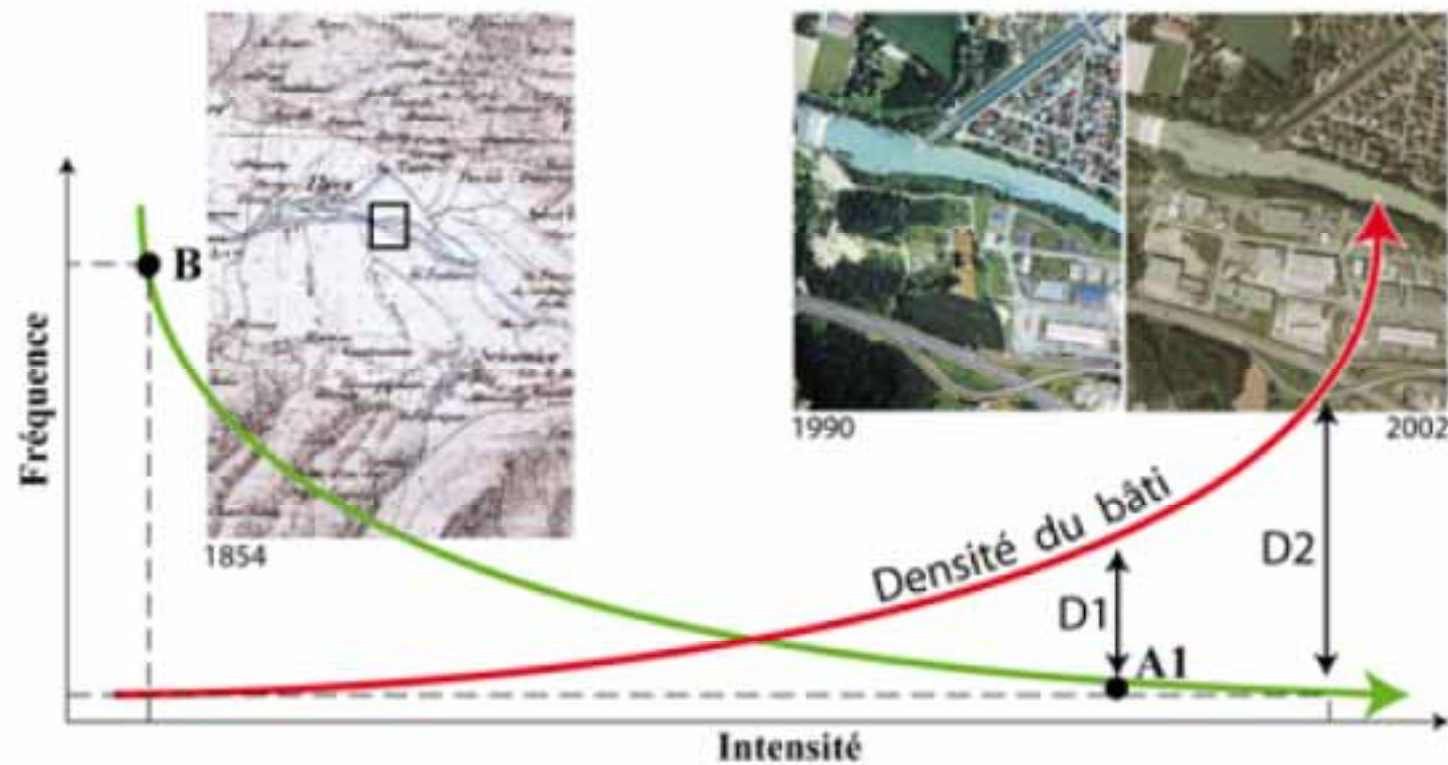
Governance at the local level

- Each great water basin has a « water parliament » which is a steering group for water policy at the district level. Responsible for the draw up of the WFD's River Basin Management Plans
- Specialized working groups were created for the governance of the flood management policy at the district-level: they all include representants from insurance companies



uses of the Farmer Curve in Social Sciences

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P. PIGEON, 2010,



Collective governance of risk prevention measures

Questions and tools

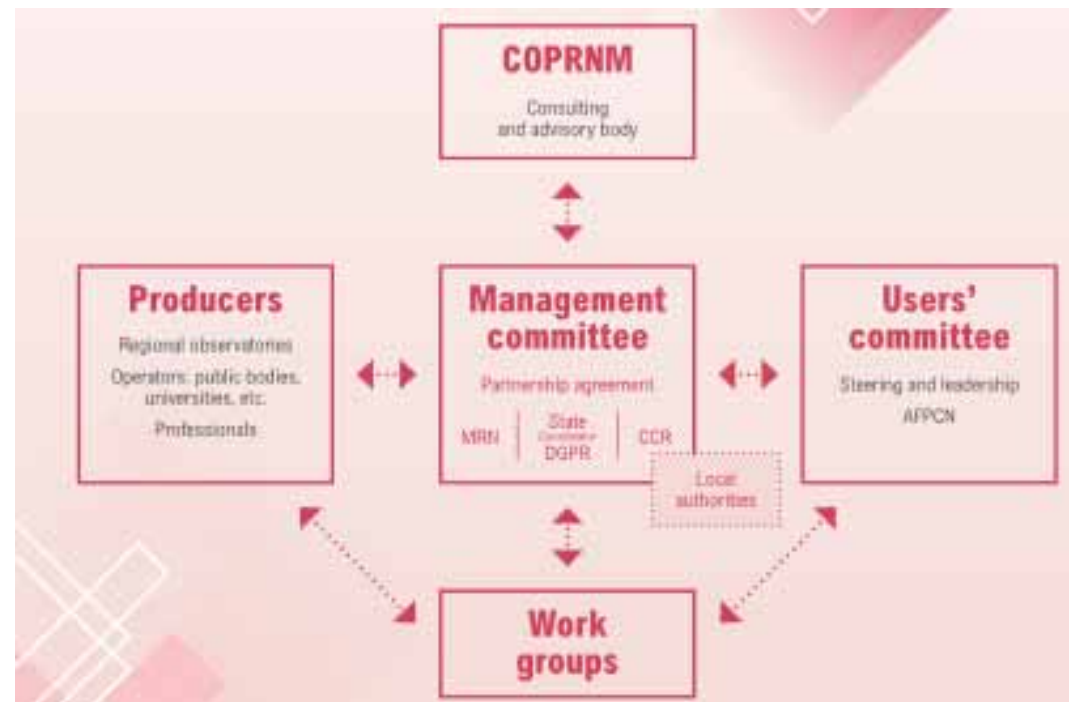
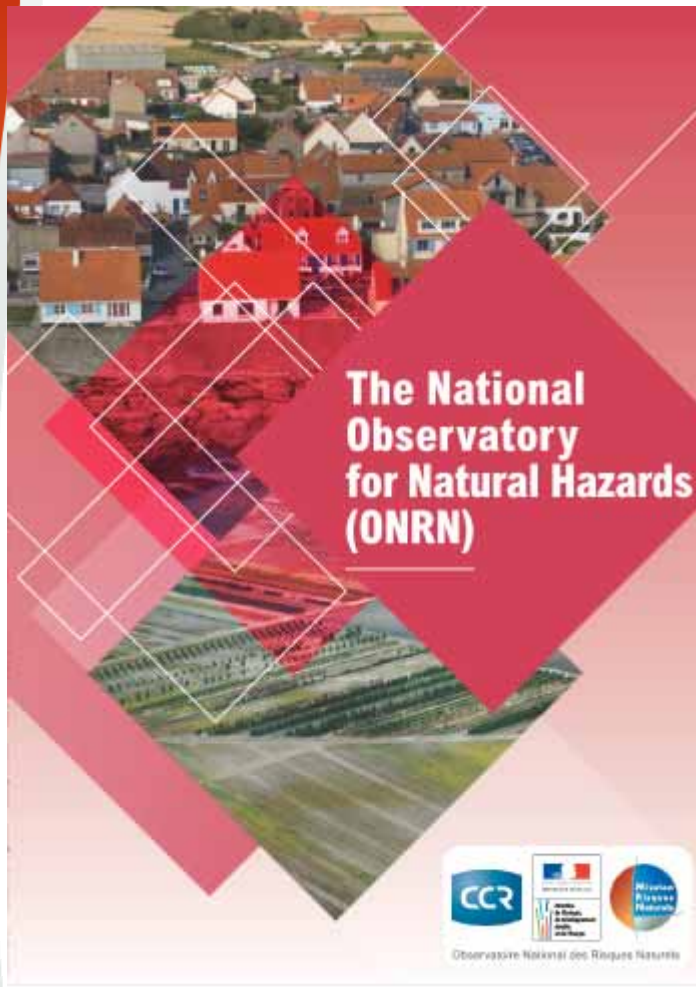
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- **How to monitor the efficiency of DRR measures?**
 - ✓ Risk metrics and risk reduction performance evaluation at individual or collective level
 - ✓ CBA of a risk reduction project (meso scale, project temporality)
- **How to allocate limited resources in a limited time frame through a collective governance process? (National Flood Risk Management Strategy)**
 - Prioritising risk reduction measures: strategic planning of resources allocation at national/regional level, moving ahead step by step in terms of risk transfer thresholds and providing to citizens of a certain risk profile equity of treatment



ONRN: governance and organisation

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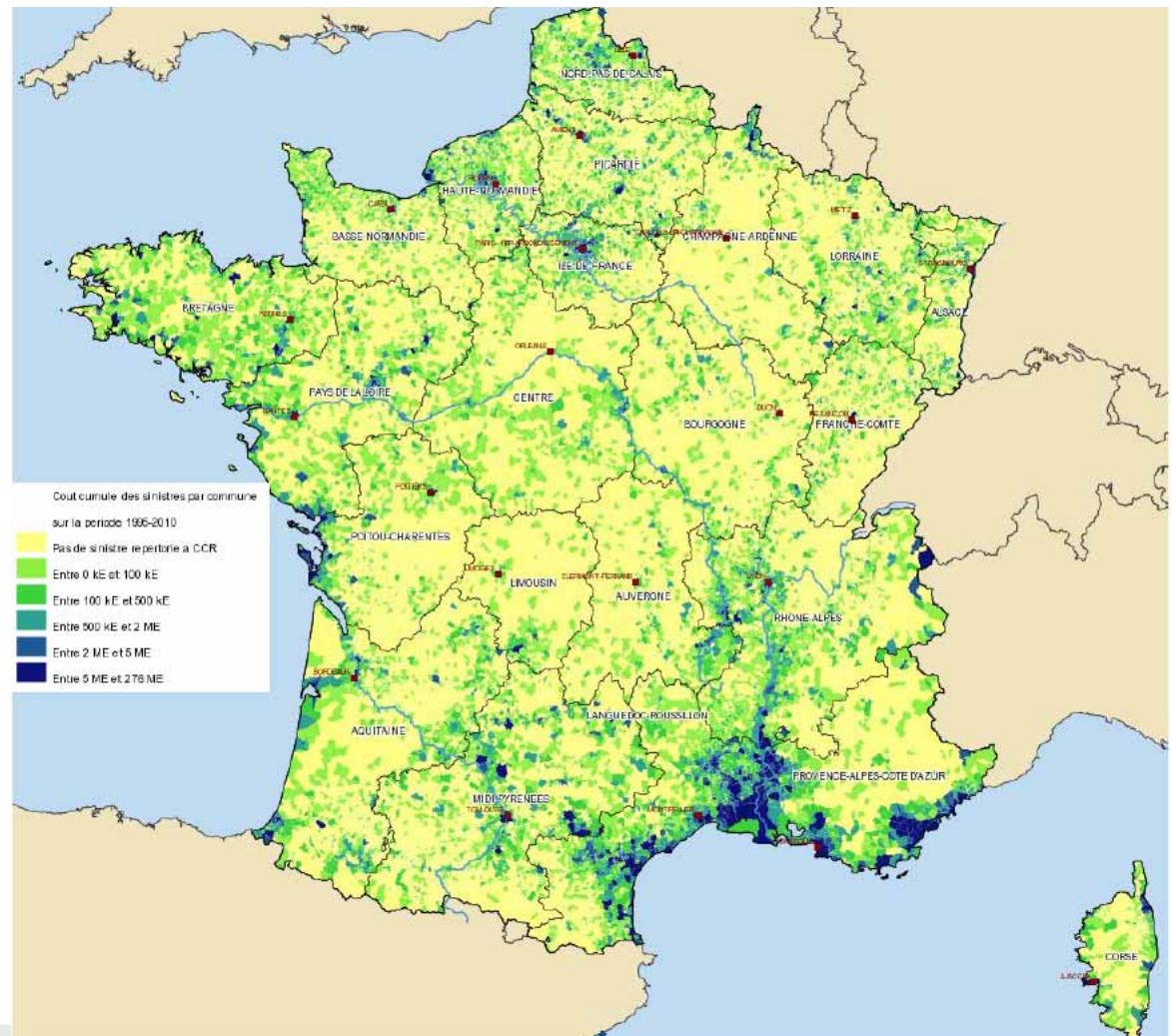
- Hazards
- Assets exposure, vulnerability, resilience
- Loss records and lessons learnt
- Stakeholders and their projects
- Risk reduction public procedures and programmes

National Observatory of Natural Risks (ONRN) website

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www.onrn.fr

Downloadable indicators and data
eg. Map of cumulated flood losses per municipality (from 1995 to 2010)



4. Expectations from EU Research

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- Risk metrics (monetary and non monetary), at different scales, spatial and temporal
- Data collection, sharing, dissemination, uncertainty communication: past events databases, evaluated under present conditions
- Multirisk conventional approach, tracking uncertainties...
- Clarify possibilities and limits for use of Farmer curve (LEPC)
 - ✓ in social sciences (eg. geography, psychology, etc), as a bridge between risk economy - decision making sciences and finance - risk transfer options
- Consider new collective governance bodies as « living labs »
 - ✓ integration of scientific knowledge/methods into decision making,
 - ✓ assessing the efficiency of their interactions at various scales,
 - ✓ promoting the social utility of collective governance
- Strategic planning of resource allocation to DRR measures, from science to policy making
- Integrated pluridisciplinary and multisectoral comparative studies of country risk reduction and transfer systems : legal, economic, PPP solutions (investigate their ethical components), etc



ANNEXES



Objectives of the Union (Article 2)

The Union shall set itself the following objectives:

— to **promote economic and social progress** and a high level of employment and to achieve balanced and sustainable development, in particular through the creation of an area without internal frontiers, through the **strengthening of economic and social cohesion** and through the establishment of economic and monetary union, ultimately including a single currency in accordance with the provisions of this Treaty,
(...)

Economic and monetary policy (Art. 100.2)

Where a Member State is in difficulties or is seriously threatened with **severe difficulties caused by natural disasters** or exceptional occurrences beyond its control, the Council, acting by a qualified majority on a proposal from the Commission, **may grant, under certain conditions, Community financial assistance to the Member State concerned.** The President of the Council shall inform the European Parliament of the decision taken.

Consumer protection (Art. 153)

1. In order to promote the interests of consumers and to ensure a high level of consumer protection, the Community shall contribute to protecting the health, **safety and economic interests of consumers**, as well as to promoting their right to information, education and to organise themselves in order to safeguard their interests.
2. Consumer protection requirements shall be taken into account in defining and implementing other Community policies and activities.
3. The Community shall contribute to the attainment of the objectives referred to in paragraph 1 through:
 - (a) measures adopted pursuant to Article 95 in the context of the completion of the internal market;
 - (b) measures which support, supplement and monitor the policy pursued by the Member States.
4. (...)
5. Measures adopted pursuant to paragraph 4 shall not prevent any Member State from maintaining or introducing more stringent protective measures. Such measures must be compatible with this Treaty. The Commission shall be notified of them.

REGIO: EU Solidarity Fund (2002) - INTERREG

ENV: Floods directive (2007)

INFSO: INSPIRE directive (2007)

ENERGY: European critical infrastructure protection directive (2008)

CLIMA: CCA adaptation strategy green paper (2009)

White paper : Insurance solutions / Clearinghouse mechanism

EU CCA adaptation strategy (2013)

ECHO - citizen protection:

- Financial instrument for civil protection (2007)
- DRP Strategy (2009)

DEV: DRR cooperation strategy with third countries (2009)

MARKT: Internal Market and Financial Services

Solvency II directive (2009)

Green Paper on NatCat insurance (2013)

RTD: Research and Innovation

Framework Programmes (e.g. FP7 projects), GMES...



About risk sharing

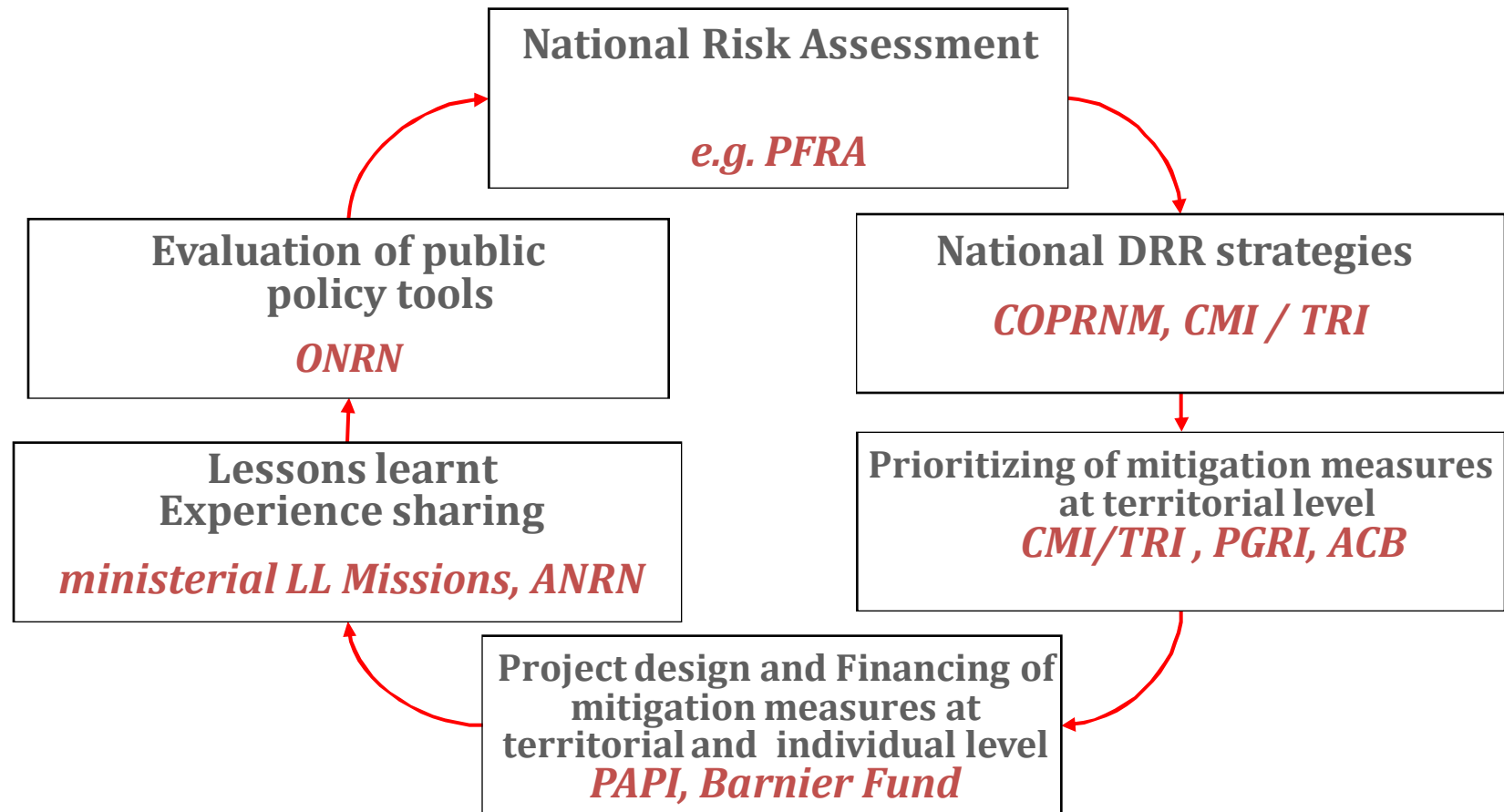
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Along the loss/frequency curve for a given territory, the complete management of risk burden results from a combination of solutions involving risk retention and mitigation at individual and collective level, then risk transfer to insurance and perhaps, but ultimately, according to country profile in case of insurability (private reinsurance market) limitations, by the means of national/ regional solidarity.



Involvement of insurance sector (FR Case) into the institutions/tools of a risk reduction governance cycle

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Useful links

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- www.mrn.asso.fr www.ccr.fr www.onrn.fr
- Fédération Française des Sociétés d'Assurances (FFSA) - www.ffa.fr
- Groupement des Entreprises Mutuelles d'Assurance (GEMA) - www.gema.fr
- Comité des Entreprises d'Assurances (CEA) - www.ceassur.fr
- Autorité de contrôle prudentiel (ACP) - www.banque-france.fr/acp/index.htm et www.acam-france.fr
- Insurance Europe - www.insuranceeurope.eu
- European Insurance and Occupational Pensions Authority (EIOPA) <https://eiopa.europa.eu/>
- National Association of Insurance Commissioners (NAIC) - www.naic.org
- International Association of Insurance Supervisors (IAIS) - <http://www.iaisweb.org/>
- NATURAL HAZARDS, UNNATURAL DISASTERS - The Economics of Effective Prevention - <http://www.gfdrr.org/gfdrr/nhud-home>
- Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX) - <http://ipcc-wg2.gov/SREX/report/>

