European natural hazards insurance business models

NEWSLETTER #5
EUROPEAN NATURAL HAZARDS INSURANCE BUSINESS MODELS

This NAIAD newsletter is based on a literature review and interviews with 61 executives from (re)insurance companies and related stakeholders in the EU. The goal of this research was to offer new insights into the role of insurance industry in addressing the goals of disaster risk reduction and climate change adaptation. It highlights the role of insurance industry in the efforts to make society more resilient and support the transition to ex-ante disaster risk management paradigm.

At the end of this newsletter, we listed 3 key recommendations for stakeholders to take into account when tailoring new business models.

Understanding the European natural hazards insurance business models is crucial to leverage the industry’s contributions to achieve climate change adaptation and disaster risk reduction goals and targets. Insurance schemes are significantly different from one another, according to the type of contracts, prices, coverage, cultural risk and insurance perception.

The 11 NAIAD countries can be classified as:

• Voluntary insurance (Germany, Italy, Slovenia),
• Semi-voluntary (Denmark, Sweden, Poland, the Netherlands and United Kingdom) and
• Mandatory (France, Spain and Romania).

Authors:
VOLUNTARY INSURANCE SCHEMES
How well do you know European natural hazard insurance systems?
COUNTRY FACT SHEET GERMANY

Before
(Prevention)

Voluntary, but “highly-recommended insurance”

- State - responsible for coordinating large scale protective measures
e.g., “National Flood Protection Programme”

- Bundesländer - responsible for large scale protective measures and implementation of the EU Directives as well as voluntary campaigns to raise natural disasters risk awareness

- Cities and towns - locally responsible for land-use planning including analysis of vulnerabilities and small scale protective measures

- Individuals - responsible for the individual protection of their houses (e.g., structural measures)
- voluntary subscription to insurance policy
- risk-based pricing (all perils; based on risk zone mapping, individual protective measures and climate change vulnerability)

private insurance companies - cover the remaining risks

Homeowners have implemented individual protective measures?

NO: no discounts on premiums

YES: incentives on premiums/
lower deductibles

If policyholders are under the regulation of the “Sozialgesetzbuch II”,
Social Security Code: the government helps them to pay their premiums

After
(Recovery)

No State compensations beyond emergency aid

Private insurance companies

compensation based on the policy
deductible fixed by the contract

Private reinsurers

To know more: http://www.naiad2020.eu

German Insurance Association (GDV), IRSTEA/CCR Nov.2018

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Voluntary private bundled indemnity insurance

- **State** - The Civil Protection Department has a guiding role, in agreement with regional and local governments, of projects and activities for the prevention, forecast and monitoring of risks and intervention procedures.
- **The Ministry of Environment** - in July 2018, the functions in the field of environmental emergencies previously exercised by the Presidency of the Council of Ministers (under the Mission structure “Italia Sicura”) were transferred to the Ministry of Environment. Italia Sicura was a fund to finance protective measures (€9.9 bn in the fund “National Plan against hydrological risk 2016-2023”)
- **Regions** - Play a significant role in identifying geographical and sectoral intervention priorities, as promoted by the SNAC in the framework of the collaboration between the various levels of governance (i.e., CCA Regional Strategy for the Lombardy Region)
- **Municipalities** - Must draw Civil Protection Plan “Piani di protezione civile”
  - to manage natural disasters and emergency // Draw local CCA plans
- **Individuals** - targets of the communication to raise their risk awareness

**Before** (Prevention)

- **Contract premiums**
- **voluntary insurance coverage**
- market-based premiums and deductibles for fire and natural hazards coverage
- premiums ~€100/200 year/one family building

**Event occurrence**

**After** (Recovery)

- **Ad-hoc governmental assistance (SIGRA)**
  - The State can declare an event as a “disaster”
  - unlock
  - National Solidarity Fund (FSN) for large disasters
  - ~€3.5 billion/year
  - spent in ex-post financial aid

- **Private insurance companies**
  - can choose to be reinsured by private reinsurers
  - each insurance company has to create a natural hazard provision based on tax-deductible

**3 possible types of compensations:**

- **European Union Solidarity Fund (EUSF)**
  - often unlock after:
  - State/Municipalities
  - For reconstruction operations, to cover the costs of emergency services, temporary accomodations, clean-up operations, protection measures for cultural heritage sites

- **Contract premiums**
- **Compensation/deductible based on the policy**
- **policyholder**
- **citizens**
- **To know more:** http://www.naiad2020.eu

References: Le Den et al., 2017, Maccaferri et al., 2012, EUSF, Unipol, ANIA, IRSTEA/CCR Jan. 19
COUNTRY FACT SHEET  SLOVENIA

**How well do you know European natural hazard insurance systems?**

**Before (Prevention)**

- **State** (Slovenian Water Agencies) - preparation and implementation of the Flood Protection Plans, risk assessment, selection of the measures and get the budget *(from own State budget and other European funds)* (legal obligation but not always implemented)

- **Municipalities** - responsible for harmonizing Municipal Spatial Plan with Flood Protection Plan

- **Individuals** - targets of the communication to raise their risk awareness

  - Voluntary insurance coverage
  - market-based premiums/deductibles for fire and natural hazards coverage

  - ~€165/year/one family building

**Event occurrence**

Administration for the Civil Protection and Disaster Relief (ACPDR) during the event occurrence the ACPDR both ensures protection of properties and people within the 32 municipalities (rescue services)

**After (Recovery)**

- **Law on the elimination of consequences of natural disasters**
  - *damage assessment by the ACPDR*
  - *Damages only exceed 0.3% of the national budget income/year*
  - *The government approves (or not)*
  - *Water Rehabilitation Program*

- **Private insurance companies**
  - can refuse to cover properties and agricultural areas
  - can choose to be reinsured by **Private reinsurers**

- **Are individuals insured?**
  - **YES:** they will receive both State/EUSF and private insurance compensation/deductible based on the policy
  - **NO:** they will receive only State and EUSF compensations

How well do you know European natural hazard insurance systems?

COUNTRY FACT SHEET NORWAY

Before (Prevention)

- **Private insurance companies**
  - sharing data: natural hazard and water related claims at address level

- **Norwegian National Scheme for Natural Damage Assistance**
  - State scheme (amended 01/01/2017)
  - risk-based premium
  - natural hazard flat premium 0.07% of the fire insurance sum
  - promote + financial support for protective measures implementation
  - all insurance companies providing fire cover must be member of the pool
  - Norsk Naturskadepool established in 1980: collecting loss data since 2008: water damage data
  - buy reinsurance on the behalf of the companies


Event occurrence

- Not part of nat cat scheme
- flash flood, storm water, pluvial floods and sewage back-up
- “Act of god, Natural hazards”**
- river flood
- **list fixed by the Act on natural damage of June 16th 1989

After (Recovery)

- Private insurance companies look at the main cause of hazard to declare “urban” hazards or natural hazards

- insurance companies look if liability of municipality is trigger and if damages are due to ineffective maintenance of the water and sewage system

- Municipalities compensate losses

- Court case judgement

- Policyholders

- Norwegian National Scheme for Natural Damage Assistance
  - provide compensation for Other objects not suitable to insure against fire:
    - roads
    - farmland + crops
    - bridges

- Loss adjusters’ assesses the cost of the damages***

- Policiesholders

- *** in case of major disasters coordinates loss adjusters for coherent pricing

To know more: [http://www.naiad2020.eu](http://www.naiad2020.eu)


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SEMI VOLUNTARY INSURANCE SCHEMES
**COUNTRY FACT SHEET**

**DENMARK**

**How well do you know European natural hazard insurance systems?**

Before (Prevention)

- Semi-voluntary insurance with a public disaster fund financed by tax-payers’ money

<table>
<thead>
<tr>
<th>Contract</th>
<th>Private insurance companies</th>
</tr>
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<tbody>
<tr>
<td>premiums</td>
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- Fire premium includes an annual tax of 60 DKK/policy to finance the fund.
- **DSC Fund** covers everyone who has a fire insurance.

Event occurrence

- Storm surge (covered if it is a “20 year events or over” recognized by a DSC declaration)
- Floods (from waterways & lakes)
- Windfall

* The Danish Storm Council recognizes these 3 types of natural catastrophes

After (Recovery)

**The private insurer refuses to cover the claims due to floods or storm surge**

- **Policyholders, businesses**
- **Flood/storm surge damage claims request to the DSC only if they are fire insured**

- **The claims adjusters’ assess the cost of the damages**
- **DSC pays compensation, fixes deductible and registered damage into the BBR building and housing register**

**Disaster relief scheme**

- **Forest owners** apply to the DSC for a subsidy (to finance costs of cleaning up and replanting)
- Must be insured against storm damage to trees and the contract must cover the entire area

- **The claims adjusters’ assesses the cost of the damages**
- **DSC pays subsidy tax-deductible fixed by the DSC**

**References:** Le Den et al., 2017, Danish Storm Council 2017, IRSTEA/CCR Nov. 2018

**To know more:** [http://www.naiad2020.eu](http://www.naiad2020.eu)
Semi-voluntary private bundled indemnity insurance

**Before** (Prevention)

- **State** - allocates *fund dedicated to preventive measures* (~40 million Swedish kronor/year)
- **Government Financing Swedish Environmental Institutes**
- **Municipalities** - responsible for *water services, dimensioning, maintenance of the pipes*

**After** (Recovery)

- **No State compensations**
- **Municipalities** - strict liability if responsibility is established: *have to compensate damage*

Private insurance companies can choose to be reinsured by Private reinsurers.

### Nature Insurance value: Assessment and Demonstration


*List of perils, natural hazards’ definition and thresholds are fixed by the policy*

### Semi-voluntary private bundled indemnity insurance

**References:** Le Den et al., 2017, Danish Insurance Association et al., 2013, Insurance Sweden, IRSTEA Oct. 2018
How well do you know European natural hazard insurance systems?

COUNTRY FACT SHEET UNITED-KINGDOM

Before
(Prevention)

Voluntary private insurance with a reinsurance risk pooling

CUSTOMER decide to purchase insurance policy

Private insurance companies

- encourage flood mitigation measures investments by the government

Risk-based premium bundled with home/contents insurance mortgage requirement

low flood risk home

high flood risk home

Private insurance companies can decide to cede some of high flood risk homes

are reinsured by Private reinsurers

State DEFRA €2.5Bn over six years for capital investment in protective measures

Before
(Prevention)

Event occurrence

* list of perils defined by the policy

After
(Recovery)

Compensation for: flooded homes

Private insurance companies

compensation/deductibles based on the policy

flooded homes

Compensation for: flooded homes

Under Flood Re

flood claims net of deductible

Private insurance companies

flood claims net of excess

flooded homes


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How well do you know European natural hazard insurance systems?

**COUNTRY FACT SHEET NETHERLANDS**

**Before (Prevention)**

The insurance sector has a policy not to provide flood insurance compensation is possible through an ad-hoc State intervention.

1. The policyholder must pay these taxes:
   - Government premium: Water tax €63/year to finance maintenance of protective measures.
   - Private insurance companies:
     - Basic premium.
     - Not possible to be insured against flood & other hazards.

2. The policyholder can choose their insurers and policies:
   - Neerlandse underwriters of Lloyds:
     - Basic premium.
     - Natural hazard risk based premium.
     - €11/month/one family building.
     - 2 different measures eligible for premium discount of 5% each.
   - Private insurer agent employed by the government:
     - The loss adjuster assesses damage cost.
   - Private insurance companies:
     - Compensation under the CCA.
   - Private reinsurers:
     - Compensation for perils covered by the policy.

**After (Recovery)**

Event recognized as a “disaster” by Royal Decree of the Ministry of Justice and Security?

- **NO**: The policyholder have to cope with the losses by themselves or relying on their insurance contract.
- **YES**: Royal decree applicable only for damage that is uninsurable, unavoidable, non-coverable.

Positive Assessment:

- The loss adjuster assesses damage cost (Private insurer agent employed by the government).
- Political decision to define the % of compensation (law: no full compensation, restoration reconstruction).

Negative Assessment:

- Citizens, businesses, government, churches, associations, foundations & agriculture.

MANDATORY INSURANCE SCHEMES
How well do you know European natural hazard insurance systems?

COUNTRY FACT SHEET FRANCE

Before (Prevention)

Compulsory insurance coverage extension for multiperils:

- Individuals
- Businesses
- Automobiles

Policyholders

Contract premiums

- Basic premium
- Additional premium
- 12% year
- ~ €20/year/one family building

Private insurance companies

In France and overseas territories

Can choose to be reinsured by

- Caisse Centrale de Réassurance
- Private reinsurers

State reinsures CCR

Intervenes as a last resort

Public-private partnership

Event occurrence

The Mayor

Has 18 months from the date of occurrence to fill a request with the Prefect demanding that the event be recognized as a "Natural catastrophe"

The Prefect

Submits the request to the Interministerial Commission

The Interministerial Commission

Determines whether the event may be declared a disaster or not.

The list of municipalities recognized or not by decree is published in the Official Journal

Phenomenon is recognized as a "natural catastrophe" by governmental declaration?

After (Recovery)

Contractual policy for specific hazards?

- Yes: Natural Catastrophe scheme
  - Unlock CATNAT compensation
    - (Deductible fixed by the law)
  - The loss adjusters’ assesses the cost of the damages
  - Indemnifies the insured within the 3 months following the date of remittance of the claims adjusters’ assessment

- No: No insurance coverage
  - The loss adjusters’ assesses the cost of the damages
  - Private insurance companies
    - Indemnifies in accordance with the conditions laid down in the contract*

State reinsures CCR

Unlimited guarantee in case of extreme event

Private reinsurers

(i.e., CCR Re)

Private reinsurance

Caisse Centrale de Réassurance, IRSTEA Jan. 19

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**COUNTRY FACT SHEET SPAIN**

How well do you know European natural hazard insurance systems?

Before (Prevention)

**Compulsory insurance coverage extension for multi-perils:**

- **Policyholders:**
  - homeowners
  - businesses
  - personal injury
  - automobiles
  - infrastructures
  - life & accidents

- **Contract premiums:**
  - bundled premium

- **Private insurance companies:**
  - compulsory coverage extension for extraordinary risks on the insured

Event occurrence

- **Before:**
  - homeowners residential
  - businesses commercial industrial properties
  - personal injury
  - automobiles business interruption
  - infrastructures
  - life & accidents

- **Consorcio de Compensacion (~€8bn):**
  - state intervenes as last resort

- **Private insurance companies:**
  - pay compensation for non-extraordinary hazards defined by the insurance policy

- **Claims management:**
  - The loss adjusters' assesses the cost of the damages

- **Direct compensation:**
  - if losses exceed CCS' ability to pay:
  - state intervenes as last resort

After (Recovery)

- **Direct compensation:**
  - policyholders 
  - businesses
  - personal injury

- **Compulsory insurance coverage extension for multiperils:**
  - €

**References:**

- Consorcio de Compensacion de Seguros, IRSTEA / CCR
- Feb. 19

**To know more:** [http://www.naiad2020.eu](http://www.naiad2020.eu)
How well do you know European natural hazard insurance systems?

COUNTRY FACT SHEET ROMANIA

Before (Prevention) Compulsory insurance coverage with a national pool (PAID) and private insurance

- PAID, “a strong financial reserve to financially protect Romania in case of extreme natural phenomenon and reduce the impact on national budget in case of catastrophes”
- Pool-UI de Asigurare Impotriva Dezastrelor naturale

- Pay basic premium for flood, earthquake and landslides according to the house’s type:
  - Type A house (reinforced concrete)
    - €20/year
  - Type B house (walls made of above)
    - €10/year

- Voluntary extension for storm & fire
  - Pay basic premium and voluntary additional premium based on location, type, prevention measures etc.
  - Can choose to be reinsured by Private reinsurers

- National pool of 10 shareholders

- Reinsured on private markets in case of excess of losses

- Businesses, legal entities, civil constructions

Private insurance market - mandatory insurance for businesses (construction and erection all risks) in case of projects financed by EU funds. Otherwise it is a facultative insurance for businesses in case of extreme events

- Pay basic premium and voluntary additional premium based on location, type, prevention measures etc.
- Can have a prevention component with recommendation for disaster risk management

Event occurrence

- Pay basic premium for flood, earthquake and landslides according to the house’s type:
  - Type A house (reinforced concrete)
    - €20/year
  - Type B house (walls made of above)
    - €10/year

After (Recovery)

- Compensation based on the policy
- Government financing
- Infrastructural reconstruction and repairs local authorities

If a natural or legal person is not insured according with the law, is not entitled to receive any financial compensation from governmental sources

- Fines are applicable in case of failing to close a PAD policy according with the law conditions

- Compulsory insurance for these perils, fixed by the law 260/2008
- Voluntary extension for these perils

- List of risks covered fixed by the policy


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**Recommendation 1:** The European Commission has to consider insurance schemes’ differences to reinforce and create harmonized linkages between climate change adaptation/disaster risk reduction (CCA/DRR) policies and insurance businesses. New policies main-streaming ecosystem based disaster risk reduction measures (Eco-DRR) and insurers’ contribution, could be based on public-private partnerships (PPPs). Thus, it is an opportunity to promote risk awareness, risk reduction and to bridge the knowledge gap in the insurance industry on prevention measures.

**Recommendation 2:** The interviews revealed the need for Nature-based Flood-Directive based on the same principle as the Floods Directive (risk maps integrating protective measures, greener risk financing). Interviews also revealed the need for clear European and national roadmaps for sustainable insurance. However, there are divergent opinions on the idea of an EU imposition. This is linked to the EU proposal to foster insurance industry in DRR.

**Recommendation 3:** Projects like NAIAD scale-up experimenting, testing and demonstrating the applicability of NBS, challenge the EU on the policy interaction between NBS implementation and current protected areas (Natura 2000, ZNIEFF etc.) The EU could base future policies on NAIAD standards for NBS implementation. The key challenges are to determine the insurance value of ecosystems and to assess the multiple benefits of DRR whether disaster strikes or not. We are facing undergoing rapid changes based on increasing integrated approaches.

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**About the NAIAD Project**

‘NAIAD’ (Nature Insurance Value – Assessment and Demonstration) is an advanced, first of a kind, EU Horizon 2020 applied research programme focused on Nature Based Solutions (NBS) in risk management strategies, with a focus on water. NAIAD aims to operationalize the insurance value of ecosystems to reduce the human and economic cost of risks associated with water (floods and drought) by developing and testing - with key insurers and municipalities - the concepts, tools, applications and instruments (business models) necessary for its mainstreaming.

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This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 730497.

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