



Insurers around the world play a key role providing coverage for losses caused by natural hazards and advising policymakers in the design of disaster risk management and financing strategies. However, their involvement and responsibilities vary depending on the legal framework and the exposure to natcat risks in each country. Insurance solutions therefore vary greatly between jurisdictions, ranging from optional private solutions to compulsory covers and national pools covering certain risks.

In order to better understand these differences and inform the debate on enhancing climate resilience, GFIA has compiled information about various natural disaster insurance solutions and schemes across the world. The charts, published in the context of GFIA's engagement at COP26, provide information on a number of markets, including data on coverage and market penetration for selected natural catastrophe risks, for both individual and commercial insurance lines.



The provision of insurance in Australia is regulated by the Insurance Contracts Act 1984. The Act contains a “standard cover” regime which encompasses certain retail insurance products, including residential home and contents policies. The cover is integrated in home insurance, comprehensive motor insurance, sickness and accident insurance, consumer credit insurance and travel insurance.

However, an insurer is free to market policies that offer less than the standard cover, but they need to inform the insured of this decision. Until the insured is properly informed, the standard cover applies. If an insurer fails to inform the insured, the contractual terms are adjusted so that the policyholder receives standard cover. The reason insurers generally offer less than the standard cover is to keep premiums affordable.

The standard cover regime only applies to individual lines, not to commercial insurance contracts.

In addition, the Australian government is currently developing a statutory reinsurance pool to provide coverage for certain property risks in Northern Australia. This part of Australia is prone to damage from tropical cyclones and this has contributed to affordability concerns in relation to the price of home and contents insurance cover. The aim of the reinsurance pool is to reduce the cost of these premiums for consumers.

Commercial lines

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines ¹
Windstorm		✓		87.2%
Hailstorm		✓		87.2%
Lightning — direct hit		✓		87.2%
Lightning — surge			✓	NA
River flooding			✓	NA
Overflow of stagnant waters			✓	NA
Torrential rain			✓	87.2%
Storm surge			✓	87.2%
Earthquake			✓	87.2%
Snow pressure				
Avalanche				
Frost				
Landslide				
Subsidence				
Collapsing sinkhole				
Volcanic eruption				
Meteor strike			✓	87.2%
Tsunami			✓	87.2%
Bushfires/Wildfires			✓	87.2%

¹ A 2015 report by the Insurance Council of Australia on non-insurance in the SME sector estimated the level of non-insurance in Australia at 12.8%. Similarly to individual lines, the coverage of natcat perils is standard, with the exception of flood which is an optional cover.

Individual lines

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — individual lines ²
Windstorm		✓		89%
Hailstorm		✓		89%
Lightning — direct hit		✓		89%
Lightning — surge			✓	NA
River flooding		✓	✓	89%
Overflow of stagnant waters			✓	NA
Torrential rain		✓		89%
Storm surge		✓		89%
Earthquake		✓		89%
Snow pressure				
Avalanche		✓		89%
Frost		✓		89%
Landslide		✓		89%
Subsidence				
Collapsing sinkhole		✓		NA
Volcanic eruption		✓		89%
Meteor strike		✓		89%
Tsunami		✓		89%
Bushfires/Wildfires		✓		89%

² The Australian Consumer and Competition Commission (ACCC) in its Northern Australia Insurance Inquiry (Final Report, November 2020) estimated that the national rate of non-insurance for homes was 11% (p.279). Where coverage of a natcat peril is in effect compulsory by design due to the standard cover regime, this translates to an 89% penetration rate.



There are no public natcat insurance schemes for individuals and businesses. Insurance cover for natcat is provided by private insurance companies only. The government, however, created the Rural Insurance Premium Subsidy Program (PSR), providing financial assistance to farmers who wish to protect their crops and livestock against natural disasters and climate change-related risks. The PSR allows farmers to insure their production at a reduced cost.

To avail themselves of this opportunity, farmers must select an insurance company authorised under the PSR by the Ministry of Agriculture. The insurer receives a subsidy (ranging from 20% to 40%) from the government to offer lower premiums.

The rules are updated every three years. Based on [the latest update](#) (June 2021), there is a limit of R\$60 000 (US\$11 000) of financial assistance per year per type of production (agriculture, livestock, fisheries, forestry). The annual limit of financial assistance is set at R\$120 000 per beneficiary.

Peril	Compulsory cover	Standard cover	Optional cover	Market penetration
Windstorm			✓	NA
Hailstorm			✓	NA
Lightning — direct hit			✓	NA
Lightning — surge			✓	NA
River flooding			✓	NA
Overflow of stagnant waters			✓	NA
Torrential rain			✓	NA
Storm surge			✓	NA
Earthquake				
Snow pressure				
Avalanche				
Frost			✓	NA
Landslide			✓	NA
Subsidence				
Collapsing sinkhole				
Volcanic eruption				
Meteor strike				
Tsunami				



In Canada, insurance coverage is optional for homeowners. Hail, fire following earthquake and wildfire are all covered under a standard homeowner insurance policy, if purchased. Other natcat events are not usually covered by home insurance except through optional purchase (eg, overland flooding, including flash floods and earthquake shake coverage). Additional cover is widely available for damage caused by water, such as seepage, sewer back-up or overflow of a body of water. There is limited availability of optional storm surge coverage.

There are federal, provincial and territorial government programmes that provide financial assistance following a disaster. The Disaster Financial Assistance Arrangement (DFAA) is a federal programme that covers damage resulting from large-scale disasters and that transfers funds to provinces/territories following events such as spring flooding or forest fires. The expenses covered by the DFAA include evacuation costs, repair costs of public works and infrastructure, and the repair of essential personal property of individuals, small businesses and farmsteads.

The DFAA does not provide direct support to impacted individuals. Rather, it provides cost recovery assistance to provincial and territorial governments. Provinces and territories provide financial aid for their residents. The programme is funded by federal tax revenues. A per capita threshold is used to reimburse provinces/territories for specifically identified disaster aid expenditures.

Each province/territory is responsible for the first C\$3.27 of eligible per capita costs. The next C\$6.56 per capita is shared between the province/territory and the federal government (50-50). The federal government pays for 75% of the following C\$6.56 and any damages beyond this point are reimbursed 90% by the federal government for.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm			✓	NA	NA
Hailstorm		✓		NA	NA
Lightning — direct hit			✓	NA	NA
Lightning — surge			✓	NA	NA
River flooding			✓	NA	NA
Overflow of stagnant waters			✓	NA	NA
Torrential rain			✓	NA	NA
Storm surge			✓	NA	NA
Earthquake			✓	NA	NA
Snow pressure			✓	NA	NA
Avalanche			✓	NA	NA
Frost			✓	NA	NA
Landslide			✓	NA	NA
Subsidence			✓	NA	NA
Collapsing sinkhole			✓	NA	NA
Volcanic eruption					
Meteor strike					
Tsunami			✓	NA	NA
Wildfire		✓		NA	NA
Fire following earthquake		✓		NA	NA



Natcat cover for individuals and businesses is included in property damage and motor insurance contracts. A small surcharge applies (12% of the property premium). Storm, hail, and snow are typically excluded from standard cover, but can be covered by specific compensation systems. Agricultural risk (property, but not crops) is covered. Cover for windstorm is mandatory, but is a separate policy. Cover can be extended; the premium is based on risk rating.

Statutory deductibles can be adjusted with the implementation of prevention measures, based on land-use planning rules and construction codes. Required risk prevention actions (both at local authority and individual level) are eligible for state subsidies, financed through a prevention fund (Barrier Fund), which is fully funded by a levy (12%) on the natcat premiums collected.

The only difference between individual risks and commercial/business risks is the amount of the deductible, which is:

- For individuals: €380 for housing, vehicles and goods for non-professional use and €1 520 for drought and soil rehydration.
- For businesses: 10% of damage incurred (with a minimum of €1 140, except for drought, which is €3 050) unless a higher deductible is specified in the basic guarantee.

State intervention

French insurers collaborate with the government through a public-private partnership.

For compulsory cover, the state:

- Provides a legal framework
- Defines the hazards concerned and the triggering event
- Sets the prices, the deductibles and the cover
- Offers insurers the possibility to get reinsurance through the public sector reinsurer CCR

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm	✓			100%	100%
Hailstorm		✓		100%	100%
Lightning — direct hit			✓	80%	80%
Lightning — surge			✓	80%	80%
River flooding	✓			100%	100%
Overflow of stagnant waters	✓			100%	100%
Torrential rain	✓			100%	100%
Storm surge	✓			100%	100%
Earthquake	✓			100%	100%
Snow pressure		✓		100%	100%
Avalanche	✓			100%	100%
Frost			✓	50%	50%
Landslide	✓			100%	100%
Subsidence	✓			100%	100%
Collapsing sinkhole	✓			100%	100%
Volcanic eruption	✓			100%	100%
Meteor strike	✓			100%	100%
Tsunami	✓			100%	100%



Cover for storm, hailstorm, lightning strike and frost/overflow of water is usually bundled with fire insurance cover. Insurers typically do not offer stand-alone natcat products, except in industrial lines. Cover for other perils can be added to the standard fire policy.

Tariffs are risk-based and tailored to individual policies. Individual and commercial lines usually include minor deductibles. Higher deductibles may apply in zones with extreme risks. The implementation of prevention measures usually has a positive impact on the premium.

The sale and underwriting are handled by insurers and brokers, based on risk-zoning information. The use of individual risk surveys is common in commercial lines. The claims process is managed by insurance companies.

There is no state intervention and no public post-disaster compensation fund or national scheme for natcats. In the event of a large natcat, the government may decide to offer ad hoc subsidies to support companies and individuals. This practice has resulted in a “demand-problem”, with a number of small enterprises and homeowners not taking out natcat insurance as they expect the government to intervene should an event occur.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines ¹
Windstorm			✓	95%	95%
Hailstorm			✓	95%	95%
Lightning — direct hit			✓	99%	100%
Lightning — surge			✓	70%	70%
River flooding			✓	40%	47%
Overflow of stagnant waters			✓	40%	46%
Torrential rain			✓	40%	52%
Storm surge			✓	1%	1%
Earthquake			✓	40%	47%
Snow pressure			✓	40%	47%
Avalanche			✓	40%	47%
Frost			✓	80%	80%
Landslide			✓	40%	47%
Subsidence			✓	40%	47%
Collapsing sinkhole			✓	40%	47%
Volcanic eruption			✓	40%	47%
Meteor strike					
Tsunami			✓	40%	47%

¹ Ratio of the premium underwritten to insurable objects.



Insurance cover for most perils is optional. Coverage for certain perils is standard in basic fire insurance policies. The tariffs are set by individual insurers and are therefore subject to market competition. The extent to which policyholders have implemented prevention measures can influence the premiums.

There is no state intervention in the management of natcat risks.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm			✓	NA	NA
Hailstorm			✓	NA	NA
Lightning — direct hit		✓		NA	NA
Lightning — surge		✓		NA	NA
River flooding			✓	NA	NA
Overflow of stagnant waters					
Torrential rain			✓	NA	NA
Storm surge			✓	NA	NA
Earthquake			✓	NA	NA
Snow pressure			✓	NA	NA
Avalanche					
Frost			✓	NA	NA
Landslide			✓	NA	NA
Subsidence			✓	NA	NA
Collapsing sinkhole			✓	NA	NA
Volcanic eruption			✓	NA	NA
Meteor strike		✓		NA	NA
Tsunami			✓	NA	NA



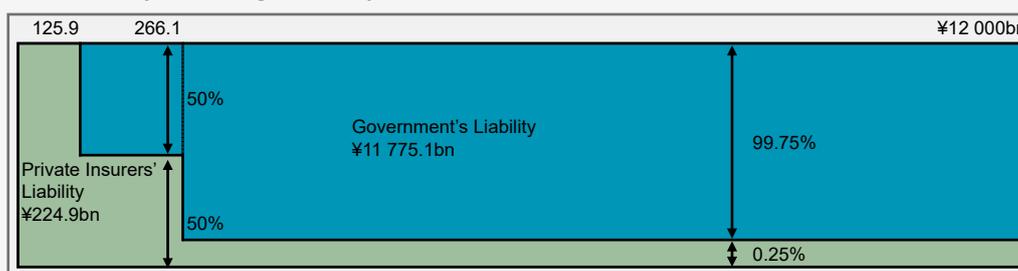
Residential earthquake insurance is provided through a public-private partnership, in which the government reinsures the earthquake insurance liabilities underwritten by private insurance companies.

Neither earthquake insurance nor fire (homeowner) insurance is compulsory. However, earthquake insurance is automatically bundled with fire insurance policies, unless a policyholder explicitly requests an exclusion. Earthquake insurance cannot be purchased separately. Fire insurance itself does not cover losses caused by fires that are the result of an earthquake or that spread because of an earthquake.

Residential earthquake insurance covers loss or damage to residential buildings and/or personal property due to fire, destruction, burial, or flooding caused directly or indirectly by an earthquake, volcanic eruption or resulting tsunami. Private insurers offer insurance products for other perils, including flooding, lightning strikes, windstorms, hailstorms and snow-related disasters. Whether cover for such perils is offered, or included in standard policies or endorsements could vary among insurers and/or products.

The premium rate is calculated by multiplying the basic rate of the insurance premium (based on the structure and location of the insured building) by a discount rate (based on the level of earthquake resistance). Policyholders set the amount insured in the earthquake insurance contract, which should be within a range of 30-50% of the amount insured under the fire insurance contract. Claims are processed on the basis of a simplified loss category system (total loss, major half loss, minor half loss, or partial loss) to allow for fast claims pay-out. There are tax incentives to encourage people to take out earthquake insurance.

The government and private insurers work together to reinsure earthquake-related risks through a shared liability scheme (see chart below). All residential earthquake insurance policies are ceded to Japan Earthquake Reinsurance, a reinsurer established by non-life insurers to exclusively handle earthquake insurance. JER retrocedes the risk to insurers and the government up to their predefined indemnity limits and retains any remaining indemnity.



Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm		✓	✓	NA	NA
Hailstorm		✓	✓	NA	NA
Lightning — direct hit		✓	✓	NA	NA
Lightning — surge		✓	✓	NA	NA
River flooding		✓	✓	NA	NA
Overflow of stagnant waters		✓	✓	NA	NA
Torrential rain		✓	✓	NA	NA
Storm surge		✓	✓	NA	NA
Earthquake		✓	✓	NA	30% ¹
Snow pressure		✓	✓	NA	NA
Avalanche		✓	✓	NA	NA
Frost		✓	✓	NA	NA
Landslide		✓	✓	NA	NA
Subsidence		✓	✓	NA	NA
Collapsing sinkhole		✓	✓	NA	NA
Volcanic eruption		✓	✓	NA	30% ¹
Meteor strike		✓	✓	NA	NA
Tsunami		✓	✓	NA	30% ¹

¹ The figure is the ratio of the number of earthquake insurance policies to the number of households, including those living in rental accommodation who usually do not purchase fire insurance. The figure excludes certain cooperative mutual aid products that cover earthquake damage.



Natcat insurance is not compulsory and is offered by private insurers through the extension of home and business insurance policies.

Within the framework of the government's risk management strategy, the Ministry of Finance established a pool to ensure compensation for high-risk natcats. The pool aggregates the exposure of the different states.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm			✓	18%	6.5%
Hailstorm			✓	18%	6.5%
Lightning — direct hit					
Lightning — surge					
River flooding			✓	18%	6.5%
Overflow of stagnant waters					
Torrential rain			✓	18%	6.5%
Storm surge			✓	18%	6.5%
Earthquake			✓	18%	6.5%
Snow pressure					
Avalanche			✓	18%	6.5%
Frost			✓	18%	6.5%
Landslide					
Subsidence					
Collapsing sinkhole					
Volcanic eruption			✓	18%	6.5%
Meteor strike					
Tsunami					



In 2020, the Moroccan government set up a specific scheme for natcat risks, covering floods, earthquakes and tsunamis, in addition to man-made (environmental) disasters. The Moroccan scheme consists of two components:

- For the insured, managed by private insurance companies.
 - o Cover is standard in property damage and civil liability insurance policies.
 - o An extra premium rate is applied to the premium of the standard policy.
 - o It covers direct material losses (building and content) and personal injury up to a certain amount. Cover depends on the type of event and on the capacity of the system.
- For the uninsured, managed by the Solidarity Fund Against Catastrophic Events.
 - o Financed by a tax of 1% on insurance premiums (excluding life insurance).
 - o Protection includes compensation for bodily injury and an allowance for persons whose principal residence is declared uninhabitable.

Fire insurance policies may be extended to include coverage of other events and other damage, such as storms, hailstorms, snow pressure, and lightning strikes that directly damage insured goods, but also damage caused by explosions, electrical damage, terrorist attacks, damage due to falling air navigation equipment or aircrafts and damage incurred by (identified) land vehicles.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm			✓	NA	NA
Hailstorm			✓	NA	NA
Lightning — direct hit			✓	NA	NA
Lightning — surge			✓	NA	NA
River flooding	✓		✓	Industrial risks: 90% Commercial risks: 20%	5%
Overflow of stagnant waters	✓		✓	Industrial risks: 90% Commercial risks: 20%	5%
Torrential rain			✓	NA	NA
Storm surge			✓	NA	NA
Earthquake	✓		✓	Industrial risks: 90% Commercial risks: 20%	5%
Snow pressure			✓	NA	NA
Avalanche			✓	NA	NA
Frost			✓	NA	NA
Landslide			✓	NA	NA
Subsidence			✓	NA	NA
Collapsing sinkhole			✓	NA	NA
Volcanic eruption			✓	NA	NA
Meteor strike			✓	NA	NA
Tsunami	✓		✓	Industrial risks: 90% Commercial risks: 20%	5%



Netherlands

Tariffs are calculated by the insurance companies. A deductible is common in windstorm risk policies and not in other perils. The standard cover for natcat perils is usually bundled with fire insurance cover. Stand-alone natcat products are not common on the Dutch market.

Based on the Loss Compensation Act (Wet Tegemoetkoming Schade, WTS), the government largely provides cover for losses caused by extreme events, including earthquakes and major river floods. The WTS also enables the government to provide compensation for other uninsured catastrophic losses.

The sales and underwriting processes are handled by insurance agents, banks or brokers. Claims processes are handled by insurance companies or, in the case of individual lines, by proxy agents.

Commercial lines

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines
Windstorm		✓		95%
Hailstorm		✓		95%
Lightning — direct hit		✓		95%
Lightning — surge		✓		95%
River flooding				
Overflow of stagnant waters		✓		98%
Torrential rain		✓		98%
Storm surge				
Earthquake				
Snow pressure		✓		98%
Avalanche				
Frost		✓		98%
Landslide				
Subsidence				
Collapsing sinkhole		✓		98%
Volcanic eruption				
Meteor strike				
Tsunami				
Drought				

Individual lines

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — individual lines
Windstorm		✓		98%
Hailstorm		✓		98%
Lightning — direct hit		✓		98%
Lightning — surge		✓		98%
River flooding			✓	0%
Overflow of stagnant waters		✓		98%
Torrential rain		✓		98%
Storm surge			✓	0%
Earthquake				
Snow pressure		✓		98%
Avalanche				
Frost		✓		98%
Landslide				
Subsidence				
Collapsing sinkhole		✓		98%
Volcanic eruption				
Meteor strike				
Tsunami				
Drought				



New Zealand is one of the riskiest countries when it comes to earthquakes, as measured by annual expected loss as a proportion of the size of the economy. Individual cover and commercial cover are organised differently.

Individual lines

Individual insurance is not compulsory, but homeowners with fire insurance are required to pay a levy, which is collected by insurers on behalf of the Earthquake Commission (EQC). The cover is consequently provided through a public-private-partnership, with the state meeting first losses up to NZ\$150 000 (to be increased to NZ\$300 000 from October 2022) for five specified hazards — earthquake (including fire following earthquake), tsunami, volcanic eruption, landslip and geothermal causes. Insurers provide cover for all other perils, except for land damage; the state provides cover for damage to land within eight metres of the residence.

Private insurers manage and settle all claims, acting as an agent for the EQC. There is a high penetration rate and the protection gap is less than 5%.

Commercial lines

Private insurers provide cover for commercial property. Secondary perils are included in the standard cover, with the exception of earthquake, which is a separate add-on.

Commercial lines

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines
Windstorm		✓		>90-93%
Hailstorm		✓		>90-93%
Lightning — direct hit				
Lightning — surge				
River flooding		✓		>90-93%
Overflow of stagnant waters				
Torrential rain				
Storm surge				
Earthquake			✓	87-90%
Snow pressure				
Avalanche				
Frost				
Landslide			✓	90-93%
Subsidence				
Collapsing sinkhole				
Volcanic eruption			✓	>87-90%
Meteor strike				
Tsunami			✓	>87-90%
Geothermal			✓	87-90%
Fire		✓		92-93%

Individual lines

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — individual lines
Windstorm		✓		>95%
Hailstorm		✓		>95%
Lightning — direct hit		✓		>95%
Lightning — surge		✓		>95%
River flooding		✓		>95%
Overflow of stagnant waters		✓		>95%
Torrential rain		✓		>95%
Storm surge		✓		>95%
Earthquake		✓		>95%
Snow pressure		✓		>95%
Avalanche		✓		>95%
Frost		✓		>95%
Landslide		✓		>95%
Subsidence		✓		>95%
Collapsing sinkhole		✓		>95%
Volcanic eruption		✓		>95%
Meteor strike		✓		>95%
Tsunami		✓		>95%
Geothermal		✓		>95%
Fire		✓		>95%



There are no stand-alone natcat insurance products on the market and cover for natcat perils is usually bundled with standard fire insurance policies. For apartment buildings, fire insurance is compulsory, thus ensuring there is cover for lightning (direct hit). Cover for earthquake, tsunami, volcanic eruption and lightning (surge) is optional and can be added to the standard cover.

Tariffs are calculated by the insurance companies (both premiums and deductibles). Deductibles are common for earthquake, tsunami and volcanic eruption only. The implementation of prevention measures usually lowers the premium.

The sales and underwriting processes are handled by insurers, banks or brokers. Claims are handled by insurers. Individual risk assessments are common in commercial lines.

There is no public compensation scheme for natcat, but the government can provide ad hoc subsidies for large natcat events.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm		✓		50%	50%
Hailstorm					
Lightning — direct hit	✓ ¹	✓		50%	50%
Lightning — surge			✓	<50%	<50%
River flooding		✓		50%	50%
Overflow of stagnant waters		✓		50%	50%
Torrential rain					
Storm surge					
Earthquake			✓	15%	15%
Snow pressure					
Avalanche					
Frost					
Landslide		✓		50%	50%
Subsidence		✓		50%	50%
Collapsing sinkhole		✓		50%	50%
Volcanic eruption			✓	15%	15%
Meteor strike					
Tsunami			✓	15%	15%
Rockfall		✓		50%	50%

¹ Only compulsory for apartment buildings



Schemes to provide compensation for damage caused to private homes in the wake of an emergency (including natcat) were first introduced in 2019 (regional programmes for home insurance). Insurers participate in these programmes on a voluntary basis. Those participating apply the same rate, depending on the regional programme.

Within the framework of the regional programmes, insurance for the loss or destruction of buildings is compulsory. Some programmes also cover:

- Damage to houses as a result of a (natural) disaster
- Damage to or destruction (or loss) of houses from any other event

The state and insurers work together to compensate for the damage; the respective shares depend on the risks specified in the regional programmes.

Government officials and expert organisations develop action plans, safety guidelines and declarations for natcat events on the basis of the expert assessment incorporated in national legislation on emergency situations.



Natcat cover is not compulsory and is offered by private insurers. Cover for most perils occurring in South Africa is, however, integrated in standard commercial and individual insurance policies. For some perils, policyholders can opt for more comprehensive cover (eg, drought, hailstorm, power surge, landslide, subsidence, collapsing sinkhole).

There is currently no public scheme in place, but the South African Insurance Association (SAIA) is engaging with policymakers and regulators to explore solutions for very difficult to insure (natcat) risks and the possibility of setting up a public-private partnership. In view of this, the SAIA is working on a proposal to introduce premium subsidies to encourage insurers to provide cover for these types of risk.

South Africa established a National Disaster Management Centre in 2002 with the objective of ensuring an integrated and coordinated system of disaster management. This system places a special emphasis on prevention and mitigation efforts by national, provincial and municipal authorities, communities and other players.

Peril	Compulsory cover	Standard cover	Optional/ additional cover	Market penetration ¹ — commercial lines	Market penetration ¹ — individual lines
Windstorm		✓		Very low	Very low
Hailstorm		✓	✓	Very low	Very low
Lightning — direct hit		✓		Very low	Very low
Lightning — surge		✓ (power surge)	✓	Very low	Very low
River flooding		✓ (property damage)		Very low	Very low
Overflow of stagnant waters		✓		Very low	Very low
Torrential rain		✓		Very low	Very low
Storm surge		✓		Very low	Very low
Earthquake		✓		Very low	Very low
Snow pressure		✓		Very low	Very low
Avalanche					
Frost		✓ (Part of crop insurance cover – Multi Peril Comprehensive Insurance (MPCI))		Very low	Very low
Landslide		✓	✓	Very low	Very low
Subsidence		✓	✓	Very low	Very low
Collapsing sinkhole		✓		Very low	Very low
Volcanic eruption					
Meteor strike					
Tsunami					
Drought		✓	✓	Very low	Very low

¹ Penetration rates are defined as written premiums as a percentage of GDP



The Consorcio de Compensación de Seguros (CCS) covers a large proportion of natcat perils. The standard CCS cover can be extended, on a voluntary basis, to include property, life or personal accident insurance. Tariffs vary depending on the type and level of exposure. There are deductibles for property damage (7% of the damage) and business interruption (set in the individual policy), except for vehicles, houses and community centres.

Private insurers collect the premiums for the CCS and also provide direct cover for certain risks not covered by the CCS (direct effects of precipitation, including hail, frost, lightning, etc.). Tariffs and deductibles for these perils depend on the company and are therefore subject to competition.

The CCS works with various stakeholders, including insurers, on risk prevention.

As regards natcat risks for the agricultural, livestock, forestry and aquacultural sector, protection is available through the Agroseguro, which manages the Combined Agrarian Insurance system. This system covers damage caused by any natcat (including frost, droughts, and floods) to all agricultural production, including crops and animal livestock. Cover is voluntary and made available through a public-private co-insurance pool, currently involving 18 insurers.

Companies work together with the CCS in processing claims, assessing losses and paying compensation to policyholders. The amount paid out is later reimbursed to the companies by the CCS. In the wake of certain events (windstorm/atypical cyclonic storm), the CCS manages the claims-handling process to speed up compensation.

The Spanish public-private partnership, managed by the CCS, is the oldest example of a natcat scheme. The system includes a state guarantee in case of catastrophic events exceeding the capacity of the CCS. To date, this has not been called on.

For more information, please visit <https://www.consorseguros.es>

Peril	Compulsory cover	Standard cover	Optional cover	Market penetration ¹ — commercial lines	Market penetration ¹ — individual lines
Windstorm		✓		100%	100%
Hailstorm			✓	85%	75-100%
Lightning — direct hit			✓	85%	75-100%
Lightning — surge			✓	85%	75-100%
River flooding		✓		100%	100%
Overflow of stagnant waters		✓		100%	100%
Torrential rain			✓	85%	75-100%
Storm surge		✓		100%	100%
Earthquake		✓		100%	100%
Snow pressure			✓	85%	75-100%
Avalanche			✓	85%	75-100%
Frost			✓	85%	75-100%
Landslide ²		✓		100%	100%
Subsidence ²		✓		100%	100%
Collapsing sinkhole			✓	85%	75-100%
Volcanic eruption		✓		100%	100%
Meteor strike		✓		100%	100%
Tsunami		✓		100%	100%

¹ Due to the characteristics of the Spanish market and the role of the CCS, the market penetration rate cannot be measured by risk, but depends on the type of private insurance product or business line.

² Landslide and subsidence are not covered, unless they occur simultaneously and are caused by rainfall that resulted in extraordinary flooding in a given area.



Article 33 of the Swiss Insurance Supervision Act stipulates that companies offering fire insurance must include cover for natural hazards as well. Contents insurance covers the same perils as buildings insurance, but is mostly optional.

The scope of coverage, premium, tariff and rules governing deductibles of natcat insurance in individual lines are set by law. Lake tsunamis are covered as part of the cover for river flooding and overflow of stagnant waters.

Peril	Compulsory cover	Standard cover	Optional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm	✓			99%	99%
Hailstorm	✓			99%	99%
Lightning — direct hit	✓			99%	99%
Lightning — surge	✓			99%	99%
River flooding	✓			99%	99%
Overflow of stagnant waters	✓			99%	99%
Torrential rain	✓			99%	99%
Storm surge					
Earthquake			✓	10%	10%
Snow pressure	✓			99%	99%
Avalanche	✓			99%	99%
Frost			✓	25%	25%
Landslide	✓			99%	99%
Subsidence			✓	5%	5%
Collapsing sinkhole			✓	5%	5%
Volcanic eruption					
Meteor strike					
Tsunami					
Rockfall	✓			99%	99%



Flooding is the most common and costly natural disaster in the United States, causing billions in economic losses each year. According to the National Flood Insurance Program (NFIP), 90% of all natural disasters in the United States involve flooding.

The federal government is the primary provider of flood insurance for residential risks, while private insurers provide coverage for commercial flood insurance risks. There is no coverage for flooding in standard homeowners' or renters' policies or in most commercial property insurance policies. Coverage is available in a separate policy from the NFIP and from a few private insurers.

As a general rule, the natural disaster guarantee is included in the homeowner's insurance policy. The standard homeowner's policy usually only covers damage caused by wind, including tornadoes, cyclones and hurricanes. Homeowners are, however, generally also protected against fires, storms, wind, wildfire and fire following earthquake.

The US market is governed by the principle of contractual freedom whereby insurance companies have complete freedom to set the amount of the contribution they deem appropriate.

Peril	Compulsory cover	Standard cover	Optional cover	Market penetration — commercial lines	Market penetration — individual lines
Windstorm		✓		NA	NA
Hailstorm		✓		NA	NA
Lightning — direct hit		✓		NA	NA
Lightning — surge			✓	NA	NA
River flooding			✓	NA	Limited
Overflow of stagnant waters			✓	NA	Limited
Torrential rain		✓ (due to water intrusion caused by damage)	✓ (due to rising water)	NA	Limited optional cover
Storm surge			✓	NA	Limited
Earthquake			✓	NA	Limited
Snow pressure		✓		NA	NA
Avalanche		✓		NA	NA
Frost			✓	NA	NA
Landslide			✓	NA	Limited
Subsidence			✓	NA	Limited
Collapsing sinkhole			✓	NA	Limited
Volcanic eruption			✓	NA	Limited
Meteor strike		✓		NA	NA
Tsunami			✓	NA	Limited



Insurance cover

Standard cover	The insurance of natcat perils is not compulsory, but cover is automatically integrated in other insurance products, and may not allow the insured the choice to opt for a personalised bundle of perils.
Compulsory cover	Taking out insurance for a natcat peril is mandatory.
Optional/additional cover	Insurance cover is either optional or policyholders can opt for an extension of the standard cover.
Commercial lines	Insurance cover below the level of industrial risk, typically for commercial/business entities, including small and medium-sized enterprises (SMEs).
Individual lines	Insurance cover for individuals for loss or damage, most typically homeowner's insurance.
Flat cover	Only one type of policy exists in the market, with a fixed, predefined list of perils covered.
Tariff/Pricing	Pricing is either based on legally set, fixed tariffs or is open to the free market. In both cases, the premium can be risk-based (including zoning) or cross-subsidised.
General event — limit of indemnity	In some countries, an overall limit of indemnity for a single event is set by law for the insurance industry. Losses greater than the limit are not fully compensated; policyholders only receive a quota of their claim.
Fixed value	A policy that provides a fixed amount of money, regardless of the total cost of the damage, in the event of a total loss.
Sum insured	There is no cap and the total cost of the damage is covered, in the event of total loss.
Reinstatement value (replacement cost coverage)	The cost of replacing the damaged item is covered regardless of depreciation or appreciation. There is also "extended replacement cost", in which the pay-out will exceed the coverage limit if the costs for construction (or replacement) have increased. —> A TV set costing €2 000 five years ago was destroyed in a flood. TV sets have a typical lifespan of 10 years. A similar TV set today costs €2 500. The destroyed TV set had 50% (five years) of life remaining. Regardless of the five years of wear and tear, the insurer will pay the replacement cost of €2 500.
Current value	Current value is calculated by subtracting depreciation from the replacement cost. Depreciation is usually calculated by establishing the lifespan of the item and determining what percentage of that life remains. This percentage multiplied by the replacement cost equals the current value. —> A TV set costing €2 000 five years ago was destroyed in a flood. TV sets have a typical lifespan of 10 years. A similar TV set today costs €2 500. The destroyed TV set had 50% (five years) of life remaining. The current value is €2 500 (replacement cost) x 50% (useful life remaining), or €1 250.
Value of claim	The value of claim is the amount determined after a formal request to an insurance company for a payment based on the terms of the policy. It is paid to the policyholder once approved.
Deductible	A deductible is the amount that must be paid by a policyholder before the insurer makes any payment. It can be a fixed amount (eg, €250), a percentage of the claim (eg, 5%) or a percentage of the sum insured. —> The insurance policy has a fixed deductible of €100. The claim is €500. The insurer pays €400 and the policyholder pays €100.
Franchise	The threshold that must be reached before an insurer pays any expenses. It can be paired with a deductible. —> The insurance policy has a franchise of €2 000. The claim is €1 950. The insurer pays nothing because the threshold was not reached. If the claim were €2 200, the insurer would pay for the whole loss, ie €2 200.

Perils

The specific source of loss (such as fire, flood, explosion) covered by the policy.	
Typical bundle	Natcat perils are often bundled into one or more "packages".

Risk assessment (besides zoning)

Individual risk assessment usually implies the collection of risk-relevant data at the location of the damage, analysis of that data, and an expert or underwriter's decision as to the terms and conditions of the policy.

Risk prevention

Individual risk prevention	Individual risk prevention includes all prevention measures taken on site by a policyholder to protect their property. —> <i>Examples include water-tight seals for windows (especially basement and ground floor), stop-log barriers for doors, back-pressure valves for sewer systems, drainage enlargement, installation of new central heating systems in the attic instead of the basement, installation of hail-resistant roof shingles, installation of lightning and surge protection, etc.</i>
Large-scale risk prevention	Constructions such as dikes, levees, protective barriers, etc. Usually the responsibility of public authorities.

Risk areas

Low-risk area	The area in a country where the likelihood of natcat losses is the lowest.
High-risk area	The area in a country where the likelihood of natcat losses is the highest.
Flat-risk	A country does not differentiate between high- and low-risk areas.