

2023 2024 (Re)assessment of the nat cat standard formula parameters

Fields marked with * are mandatory.

Responding to the paper

EIOPA welcomes comments on the 2023 2024 (Re)assessment of the natural catastrophe standard formula parameters.

Comments are most helpful if they:

- respond to the question stated, where applicable;
- contain a clear rationale; and
- describe any alternatives EIOPA should consider.

Please send your comments to EIOPA using the EU Survey tool **by Thursday, 20 June 2024, 23:59 CET** by responding to the questions below.

Contributions not provided using the EU Survey tool or submitted after the deadline will not be processed.

Publication of responses

Contributions received will be published on EIOPA's public website unless you request otherwise in the respective field in the survey below. A standard confidentiality statement in an email message will not be treated as a request for non-disclosure.

Please note that EIOPA is subject to Regulation (EC) No 1049/2001 regarding public access to documents [1] and EIOPA's rules on public access to documents[2].

Contributions will be made available at the end of the public consultation period.

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[1] Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents (OJ L 145, 31.5.2001, p. 43).

[2] [Public Access to Documents](#)

[3] Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45 /2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

About the respondent

* Please indicate the desired disclosure level of the responses you are submitting.

- Public
 Confidential

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Questions to Stakeholders

Q1: Do you have any comments about the (re)assessment/(re)calibration for Romania earthquake?

- Yes
 No

If yes, please provide these other comments.

According to current calibration of standard formula, the risk coefficients for earthquake vary from 0.02% (Belgium) to 2.12% (Republic of Cyprus). Other larger risk coefficients are for the following countries:

- Republic of Bulgaria and Croatia (1.60%)
- Romania (1.70%)
- Hellenic Republic (1.75%)

In Romania, earthquake, flood and landslide risks are covered under the Natural Disaster Insurance Pool (PAID). PAID covers compulsory home insurance only, up to specific limits as per local legislation. Industrial, commercial and excess residential risks are covered by primary insurers in Romania.

As part of the ongoing consultation, we note EIOPA's proposal to introduce a new country factor for Romania without the risk covered by PAID.

We agree that the risk factor for Romania should reduce. This is supported indicated by analyses of various sources of earthquake related information available online (such as AON's Impact Forecasting publication available at https://www.aon.com/attachments/impact_forecasting_global_2008.pdf and output of 2020 European Seismic Hazard Model available on the European Facilities for Earthquake Hazard and Risk platform available at <https://maps.eu-risk.eucentre.it/>).

For example, we can compare exposure difference for Romania and Hellenic Republic, shown in earthquake hazard maps referred to above (2020 European Seismic Hazard Model). The comparison shows that, at a high level only, half of Romania (Eastern half) exhibits exposure to earthquake hazard like Hellenic Republic, while the other half of Romania (Western half) exhibits lower exposure to the hazard. The Western half is not dissimilar to the Republic of Hungary, which in turn has a hazard coefficient of 0.20%.

A similar comparison with the Italian Republic's exposure to earthquake (which has a hazard coefficient of 0.77% in the Standard Formula) suggests that, overall, Romania compares better with the Italian Republic. This again supports a lower than 1.7% Standard Formula factor for Romania.

On balance, considering also developments in construction requirements and legislation over the last 40-50 years in Romania – which have significantly improved structural resistance of newly erected buildings (initiated shortly after the 1977 earthquake in Romania), we would expect the country factor for Romania to be in the range 0.75% to 1.25%, without the PAID effect.

The PAID effect should act to reduce the exposure further by c. 0.25%, having in mind that PAID is, essentially, a non-proportional risk transfer. We note that a similar conclusion is reached in EIOPA's consultation regarding the PAID effect.

Q2: Do you have any comments about the (re)assessment/(re)calibration for Switzerland earthquake?

- Yes
 No

Q3: Do you have any comments about the (re)assessment/(re)calibration for Portugal earthquake?

- Yes
 No

Q4: Do you have any comments about the (re)assessment/(re)calibration for Italy earthquake?

- Yes

No

Q5: Do you have any comments about the (re)assessment/(re)calibration for Liechtenstein earthquake?

Yes

No

Q6: Do you have any comments about the (re)assessment/(re)calibration for Poland windstorm?

Yes

No

Q7: Do you have any comments about the (re)assessment/(re)calibration for Czechia windstorm?

Yes

No

If yes, please provide these other comments.

The calibration changes proposed for Czechia are relevant and reflect past experience.

Q8: Do you have any comments about the (re)assessment/(re)calibration for Ireland windstorm?

Yes

No

If yes, please provide these other comments.

There would be an acceptance that given the proposed country factors were in the range 0.10% - 0.25%, it is appropriate not to recalibrate the factors at this time.

In the future it would be useful to know the distribution of proposed factors within the 0.10% - 0.25% range. For example, did more of the proposed country factors lie at the upper end of the range which is a why a 0.22% factor was selected. If at the next review, there are models that propose lower (or higher) country factors than the current factor of 0.22% it would be useful to understand the rationale for the new factor e.g. have there been improvements made to more recent models or do the newer models have the benefit of better quality and quantity of data? It would seem important to apply more weight to newer models if there is the belief that newer models are better at modelling the underlying risk.

In respect of Coastal Flooding, it is important to understand if the data modelled for windstorm in Ireland includes or excludes coastal flood losses. A similar approach to the inclusion of coastal flood within the windstorm risk as per the approach taken to the UK would appear appropriate.

Q9: Do you have any comments about the (re)assessment/(re)calibration for Denmark windstorm?

- Yes
- No

Q10: Do you have any comments about the (re)assessment/(re)calibration for Portugal windstorm?

- Yes
- No

Q11: Do you have any comments about the (re)assessment/(re)calibration for Guadeloupe windstorm?

- Yes
- No

Q12: Do you have any comments about the (re)assessment/(re)calibration for Martinique windstorm?

- Yes
- No

Q13: Do you have any comments about the (re)assessment/(re)calibration for St-Martin windstorm?

- Yes
- No

Q14: Do you have any comments about the (re)assessment/(re)calibration for La Reunion windstorm?

- Yes
- No

Q15: Do you have any comments about the (re)assessment/(re)calibration for Iceland windstorm?

- Yes
- No

Q16: Do you have any comments about the (re)assessment/(re)calibration for France flood?

- Yes
- No

Q17: Do you have any comments about the (re)assessment/(re)calibration for Romania flood?

- Yes
- No

If yes, please provide these other comments.

According to the current calibration of Standard Formula, risk coefficients for flood risk vary from 0,10% (Belgium) to 0,35% (Slovak Republic). Romania's neighbour countries have the following factors:

- 0,16% (Republic of Bulgaria);
- 0,25% (Republic of Hungary).

Romania's factor has been 0,4% until 2017, and then lowered to 0,30% in 2017. The reduction was supported by comparing the factor to Romania's neighbour countries (we note that no model was available in 2017).

Other countries across the Danube River basin have the following flood risk coefficients:

- 0,13% (Republic of Austria)
- 0,20% (Republic of Germany)
- 0,35% (Slovak Republic)
- 0,00% (Republic of Croatia).

With regards to Romania, we note the following:

- A country specific map of flood hazard and risk, prepared in line with EU Floods Directive, is available at <https://inundatii.ro/en/maps-portal/> .
- Similarly, the EC provides an EU wide flood hazard and risk viewer available at <https://discomap.eea.europa.eu/floodsvviewer/> .
- The Danube River represents the vast majority of the border between Romania and Republic of Bulgaria, which suggests a similar flood hazard for the two countries in the Danube region.
- Compared to Republic of Hungary, Romania has a smaller exposure to the Danube River, due to the large Hungarian plateau and the two major rivers crossing the Republic of Hungary (Danube in the centre, and River Risa in the East). Romania has also smaller and limited plateaus, with internal rivers in the country with smaller average discharges (3-9 times lower than Republic of Hungary).

We also note EIOPA's proposal to recalibrate the flood risk factor is based on CRESTA zones (instead of NUTS risk zones currently used).

In conclusion:

- We are supportive of reducing the risk factor (without the PAID effect) for Romania. In our view, a suitable range for the risk factor is 0,10% to 0,20%, which is consistent with EIOPA's proposal of 0,13%. (For the avoidance of doubt, our estimates are largely based on public data and comparisons with neighbouring countries, and ranges are only given to support or otherwise proposals in EIOPA's consultation, and not as a replacing factor).
- Similarly, with the PAID effect, we deem a suitable range for the risk factor to be from 0,09% to 0,12%.
- With regards to the Bucuresti Bucharest area (PC2 ZONE 01-07):
 - ZONE 01-06 is characterised by mostly units of blocks of flats residential and commercial buildings, which reduces impact of river floods. Due to its geography, flash floods and marine floods are significantly less likely, with industrial exposure being marginal. We therefore deem that exposure to flood in the Bucharest Bucuresti area ZONE 01-06 is marginal, and the risk coefficient for flood should be minimum at 0,40%.
 - ZONE 07 has some exposure to flood risk and therefore the risk coefficient should remain as originally was at 1,3%.

Finally, we would suggest the use of risk maps for Romania (links are provided above), given that the current split by counties is less accurate and not in line with how flood risk is assessed by Romanian authorities.

Q18: Do you have any comments about the (re)assessment/(re)calibration for Czechia flood?

- Yes
 No

If yes, please provide these other comments.

The calibration changes proposed for Czechia are relevant and reflect past experience.

Q19: Do you have any comments about the (re)assessment/(re)calibration for Italy flood?

- Yes
- No

Q20: Do you have any comments about the (re)assessment/(re)calibration for Belgium flood?

- Yes
- No

If yes, please provide these other comments.

We agree on the materiality assessment. We note that, following the Bernd event, different insurers have developed adaptation measures including warning/alerts sent to their clients. A more thorough consideration of these developments would probably have been beneficial to recognise the investment from these insurers and their related impact. We recommend to better integrate adaptation and prevention measures which are developed by insurers in the SF calibration for flood risk.

Q21: Do you have any comments about the (re)assessment/(re)calibration for Liechtenstein flood?

- Yes
- No

Q22: Do you have any comments about the (re)assessment/(re)calibration for Germany flood?

- Yes
- No

If yes, please provide these other comments.

The calibration for the parameters for flood risk in the natural catastrophe risk module is conservative. Even the enormous damage caused by the flooding of the Bernd rainstorm in 2021 is covered by the current calibration by far.

Q23: Do you have any comments about the (re)assessment/(re)calibration for Portugal flood?

- Yes
- No

Q24: Do you have any comments about the (re)assessment/(re)calibration for Ireland flood?

- Yes
- No

If yes, please provide these other comments.

We welcome the proposal to include Irish flood risk in the calibration of the Standard Formula ('SF'). Flood is a non-trivial peril for the Irish market, and we believe exclusion of this peril before now has been an oversight.

However, we note that availability of data, particularly on a 1-in-200 year basis, is very scant. It is widely acknowledged in the Irish market that any vendor models available are subject to limitations. Owing to lower population density than some major European nations, and a more diverse geographic and infrastructural landscape than some central European nations, commercial models for the Irish market are understood to be less well developed and less sophisticated. Therefore, we consider that caution should be exercised in placing excessive reliance on the outputs of a single model for the purpose of SF calibration. In particular, we urge EIOPA to avoid undue future instability of the SF by over relying on a single model.

Owing to the country's geographic features, flood events in Ireland are typically very localised phenomenon. Hence, we believe it appropriate to allow for a large degree of diversification between CRESTA zones in the calibration of the SF.

We also recognise that Ireland is highly exposed to coastal floods. While pluvial and fluvial floods are also features, floods of this nature are understood to be of lower risk compared to mainland European nations. Having noted the exposure to coastal flood, we also recognise that such risk is more prominent along the Atlantic facing western seaboard which has a significantly lower population density than the east coast where property values and concentration are far greater. Furthermore, as noted in our response to questions 8, 47, 48 and 49, we have called for coastal flooding risk to primarily be recognised under the windstorm peril within the SF, similar to the treatment adopted for the UK. We urge EIOPA to avoid double counting of coastal flood risk by applying penal country charges for both windstorm and flood simultaneously. The proposed country factor of 0.17% is perceived to be high for Ireland relative to other countries if based on flood excluding coastal flood.

We also call on EIOPA to carefully consider the consumer impact of penal CRESTA zone factors which are potential calibrated on scant data. For example, we note that zones IE-10-KY and IE-05-DL have relatively high factors of 4.1 and 3.2 respectively. This compares to factors of 0.5 and 0.7 for zones IE-07-GY and IE-18-MO. This is despite all four zones sitting on the Atlantic coast. We are concerned that unduly high factors might have the unintended consequence of discouraging insurers from offering cover in certain regions and recommend that EIOPA consider credibility of the calibration data or else dampen the significant differentiation of CRESTA zone factors across these regions.

Q25: Do you have any comments about the (re)assessment/(re)calibration for Norway flood?

- Yes
- No

If yes, please provide these other comments.

We agree that there is a need to recalibrate the parameter for Norway flood. The material does, however, not provide enough detail regarding underlying models or assumptions to make a proper assessment of the reasonableness regarding country specific parameter.

Country factor for Norway Flood: The executive summary lists a country factor of 0.05 for Flood risk in Norway. We interpret this number as 0.05% which is reasonable compared to the Norway windstorm factor of 0.08%. A factor of 0.05% is also given in the section on the reassessment of Flood risk for Norway.

Q26: Do you have any comments about the (re)assessment/(re)calibration for Sweden flood?

- Yes
- No

If yes, please provide these other comments.

The executive summary lists a country factor of 0.045 for Flood risk in Sweden. We interpret this number as 0.045% which is reasonable compared to the Sweden windstorm factor of 0.085%.

A factor of 0.45% is given in the section on the reassessment of Flood risk in Sweden. We consider this to be a typesetting error and that the factor should read 0.045%.

Q27: Do you have any comments about the (re)assessment/(re)calibration for Finland flood?

- Yes
- No

Q28: Do you have any comments about the (re)assessment/(re)calibration for the Netherlands flood?

- Yes
- No

If yes, please provide these other comments.

- EIOPA states on page 45 “There is still uncertainty regarding the plans on a public-private scheme in the Netherlands for primary flood risk. However, it might be that the primary flood risk is insured in the future. Therefore, this uncertainty leads us to being more conservative in setting the NL flood factor for the current flood coverage.”

- In our view, the country factor should be entirely based on secondary dikes. The determination and substantiation of the country factor for the Netherlands should not include any arguments that refer to the possible extension to primary dikes. Primary dikes are currently not insured and are therefore not part of the risk. The possible expansion to primary dikes (in any form) is at the most a trigger to revise the parameters. The current wording suggests that this has led to a more conservative factor than the actual risk that is now insured and in our view this is unjustified.

- The current flood modelling includes both heavy local precipitation and flooding of secondary flood defences. There are insurers who only insure precipitation, and so no distinction is possible. A discount on the impact could be considered.

- Compared to the vendor models, we see in the Dutch market that landscape height plays a much larger role in the 1–200-year scenario than can be modelled on the basis of 2-digit postal code areas. EIOPA wanted to connect with the CRESTA classification for simplicity reasons as they already had for Hail and Windstorm, but in contrast to these capital requirements, there can be major differences for Flood within a zone of the current CRESTA classification. We would like to advise EIOPA to consider refining the CRESTA classification to 4-digit postal code areas for Flood in the Netherlands, in order to better express the height differences (especially in eastern Netherlands).

Q29: Do you have any comments about the (re)assessment/(re)calibration for Denmark flood?

- Yes
 No

If yes, please provide these other comments.

The executive summary lists a country factor of 0.04 for Flood risk in Denmark. We interpret this number as 0.04% which is reasonable compared to the Denmark windstorm factor of 0.25%. A factor of 0.04% is also given in the section on the reassessment of Flood risk for Denmark.

Q30: Do you have any comments about the (re)assessment/(re)calibration for Luxembourg flood?

- Yes
 No

Q31: Do you have any comments about the (re)assessment/(re)calibration for Malta flood?

- Yes

No

Q32: Do you have any comments about the (re)assessment/(re)calibration for France hail?

Yes

No

Q33: Do you have any comments about the (re)assessment/(re)calibration for Italy hail?

Yes

No

Q34: Do you have any comments about the (re)assessment/(re)calibration for Germany hail?

Yes

No

If yes, please provide these other comments.

The increase of the factor for motor hail (from 5) to 10 seems to be reasonable given the evidence. However, raising the country factor for hail and setting it to 0.03 is not justified:

GDV data show that household and commercial contents play a subordinate role in windstorm and hail. The risk is overestimated by the proposed factor. This is not adequately reflected in the standard formula.

Q35: Do you have any comments about the (re)assessment/(re)calibration for Belgium hail?

Yes

No

Q36: Do you have any comments about the (re)assessment/(re)calibration for Luxembourg hail?

Yes

No

If yes, please provide these other comments.

A recalibration has been made for Luxembourg, resulting in a country factor that is considerably higher than that of neighbouring countries. However, EIOPA noted that Luxembourg only has one risk zone, which is assigned a weight of 1. For Windstorm and Flood, Luxembourg's country factor is comparable to its neighbouring countries, which seems inconsistent.

Q37: Do you have any comments about the (re)assessment/(re)calibration for Netherlands hail?

- Yes
- No

If yes, please provide these other comments.

The Hail module has been calibrated in the past for the event type “severe convective storm”. This means that this module not only contains hail, but also tornadoes and very heavy local rain showers. This could create some overlap with the new Flood component with regard to flooding from heavy rainfall. The question is how EIOPA views this “double counting”, but also how this relates, for example, to insurers who cover flooding due to rainfall, but not flooding from secondary dikes. For such insurers, the SF SCR Flood could potentially be too high.

Q38: Do you have any comments about the (re)assessment/(re)calibration for Poland hail?

- Yes
- No

Q39: Do you have any comments about the (re)assessment/(re)calibration for Norway hail?

- Yes
- No

If yes, please provide these other comments.

We agree with EIOPA’s conclusion of hail not being a material risk for Norway and therefore not calibrate a country factor.

Q40: Do you have any comments about the (re)assessment/(re)calibration for Motor for hail?

- Yes
- No

If yes, please provide these other comments.

The factor to reflect the increased vulnerability of motor insurance to hail has doubled. Insurers who primarily focus on motor insurance may experience a material increase of the SCR.

It is noted that different insurers have developed adaptation measures including warning/alerts sent to their clients. We are wondering how this could be better reflected in the standard formula approach.

Q41: Do you have any comments about the (re)assessment/(re)calibration for France subsidence?

- Yes
- No

Q42: Do you have any comments about the (re)assessment/(re)calibration for Belgium subsidence?

- Yes
- No

If yes, please provide these other comments.

We agree on the zero correlation between France and Belgium. The exposure to subsidence risk in Belgium differs from that in France. The hazard, particularly the presence of clay in the soil composition, is limited to specific zones in Belgium, and the building mix is also different. We question whether these differences are adequately reflected in the proposed country factor of 0.02%, which may seem high considering recent loss observations. Additionally, some relativity factors for Cresta zones with lower clay presence appear relatively high.

Regarding the impact assessment, we are surprised that EIOPA used windstorm sums insured to calculate the impact of the new subsidence module. Compulsory insurance for subsidence is limited to Simple Risks, and the penetration of subsidence coverage for other risks is rather limited. We recommend re-running the impact assessment using the windstorm sums insured for Simple Risks only. This information should be readily available to catastrophe modelling firms.

Q43: Do you have any comments about the (re)assessment/(re)calibration for UK subsidence?

- Yes
- No

Q44: Do you have any comments on the impact of wildfire for the European insurance sector?

- Yes
- No

If yes, please provide these other comments.

Given the increasing temperatures across the continent and prolonged period of hot dry weather becoming a new norm do you expect any significant trends in the near term for countries currently not included in the wildfire assessment?

Country-specific comments:

- Belgium-specific comment: For Belgium, we agree on the low materiality of this peril. The concentration of property risk in densely forested areas is low and significantly below the high concentration of risk present in other parts of the country. When considering the hazard component, this risk is currently not perceived as material.

- Germany-specific comment: The impact of wildfires for Germany is currently low and well below the materiality threshold for the standard formula. So far, practically no damage to buildings due to wildfires has been observed - despite several hot and dry summers since 2018 and corresponding wildfires. There is therefore no reason to include the risk of wildfires in the standard formula for Germany in the foreseeable future. Given that there is a certain materiality of wildfire, and it is included in the standard formula, there must be no double counting of the risk.

Q45: How should wildfire be included in the SF?

- Yes
 No

If yes, please provide these other comments.

We support the inclusion of wildfire as a new stand-alone peril in the Standard Formula.

We agree with EIOPA's analysis that the risk wildfire is difficult to be included among the existing perils. Wildfire can only occur locally in forest areas or in the immediate vicinity (not nationwide), it should therefore be considered as a separate peril. Adequate modelling is only possible with regard to the geocoordinates of individual buildings (which is difficult for integration in the standard formula). Using cresta zones seems unsuitable for modelling purposes.

We would like to note that SF already includes a scenario for man-made risks, and the causes of wildfire risk could be typically related to human activities. Therefore, it should be ensured that adding a stand-alone wildfire scenario would not result in double counting with the existing man-made scenario. Moreover, the inclusion of a new stand-alone risk in the standard formula should be consistent with the 99.5% probability for the total Solvency Capital Requirement.

Q46: Are there key factors driving the wildfire risk not mentioned so far?

- Yes
 No

If yes, please provide these other comments.

Wildfire exposure includes both property and tree exposure. Should the management of wildfire in the SF be considered separately regarding the insurance of properties, which may already be addressed through the existing man-made scenario, versus the insurance of forests?

Q47: Do you have any comments on the impact of coastal flood for the European insurance sector?

- Yes
 No

If yes, please provide these other comments.

Based on the evidence provided, coastal flooding will have an increasingly material impact for exposed countries over the long-term time horizon. Although, dependent on the individual countries' unique exposure (exposure varies by country) this may result in increased risk across the European insurance sector. It would therefore seem sensible to consider coastal flooding for exposed member states within the standard formula.

- Denmark-specific comment: Floods in Denmark primarily originate from coastal floods, when large volumes of water are pushed into the Baltic Sea in connection with storms combined with Easterly winds or from the North Sea in combination with winds from a more westerly direction. There are few larger lakes and rivers in Denmark, and it is therefore very rare to see flooding events caused by lakes or rivers.

- Belgium-specific comment: The development of defenses, such as dykes, along the sea front and in some exposed estuaries is of high importance. Various catastrophe models recently had to review their assumptions regarding the role of these defenses, as their previous risk assessments were generally too high compared to the recent reinforcements of the dykes. Consideration of public adaptation measures for coastal flooding is important for an accurate risk assessment.

- Germany-specific comment: The impact of coastal flood for Germany is currently low and well below the materiality threshold for the standard formula. Therefore, there is currently no reason to include the risk of coastal flood in the standard formula for Germany. Given that there is risk of coastal flood rises above the materiality threshold, and it is included in the standard formula, there must be no double counting of the risk.

Q48: How should coastal flood be included in the SF?

- Yes
 No

If yes, please provide these other comments.

To reduce additional complexity, a similar approach to the inclusion of coastal flood within the windstorm risk as per the approach taken to the UK would appear appropriate. An additional review of this may be required based on the models available for non-UK coastal flood risk within existing windstorm models. It is noted that, in practice, most coastal floods in Europe are linked to windstorms rather than tides (or tsunami / sea-level rises) and so consideration should be given whether an alternative approach for coastal floods would be to consider them together with windstorms.

Generally, it seems that the flood parameters in the standard formula are adequate and include both floods from fresh water and floods due to sea water. Given proper parameterization (e.g. correlations), all the options described to include coastal flood in the Standard Formula could potentially work.

Country specific comments:

- Belgium-specific comment: It is noted that flood is subject to the Nat Cat law with a specific limit to the insurer's exposure. To maintain the ability to calculate the impact of the public intervention in case of a large loss, the parameters for coastal flooding should be kept separate from wind parameters in this approach. If coastal flood is added to the standard formula, we would recommend reviewing the wind parameters for the coastal zones to make sure that there is no conservative approach in the wind parameters in these zones which could generate double counting between the wind and coastal flooding parameters. Some experts are indeed considering that the wind parameters for the Belgium coastal zones are high if we only consider the wind component.
- Norway/Sweden specific comment: In our opinion we do not believe that Sweden and Norway have the same problems with flooding in relation to the Baltic Sea which occurs in Denmark due to the narrow passage in the Oresund and in the Belts around the island of Funen.
- Germany specific comment: Based on our Germany-specific experience, coastal flood could be considered as a separate peril. We consider that this peril is different from windstorm as coastal flood can only occur locally (on coasts) and not every storm on the coasts results in a damaging coastal flood. In general, storm surge also occurs independently of river flooding or flooding caused by heavy rainfall, thus should not be part of the peril flood. Another reason for considering coastal flood separately is that not all insurance companies have coastal flood in their portfolio.

Q49: Are there key factors driving the coastal flood risk not mentioned so far?

- Yes
 No

If yes, please provide these other comments.

1. Any potential improvements to risk adaptation measures, in particular where these measures may be temporary in nature, may not be reflected within the risk models. This could result in overstatement of the impacts.

2. Consideration should be given to the risk of dyke breaches. The likelihood of breaches can vary significantly depending on the type of dyke. For instance, very large dykes are likely to have a low breach probability, whereas narrower dykes may exhibit greater sensitivity to high tides. This variability in breach probability based on dyke type could be factored into risk assessments.

Q50: Do you have any comments on the impact of drought for the European insurance sector?

- Yes
 No

If yes, please provide these other comments.

Drought may also impact risks other than agricultural drought. It would be beneficial for the paper to explore whether drought has been assessed as a material risk for the insurance sector overall. Drought significantly impacts the soil's water absorption capacity and the frequency of flash floods. It would be valuable to consider the secondary effects of drought on flash floods and other related perils.

Drought can also impact the levels of subsidence especially for clay type soil which have tendencies to shrink and crack in prolonged dry conditions.

It is noted that Agricultural insurance is not a significant product in some countries, making agricultural drought as a separate peril potentially disproportionate to the risk in these regions. However, in countries where agricultural insurance is provided exclusively by specialized insurers, there is a clear need to cover this type of risk. It is also important to recognize the correlation between drought and flood, as the risk of flooding increases after a drought due to the reduced water absorption capacity of dried-out soils. Therefore, it would be valuable to investigate whether drought risk could be integrated into the flood factor for agricultural specialty insurers.

Drought is also not affecting all countries in the same way and appears to be more severe for Central and Southern Europe.

Country-specific comments:

- In the Nordics, over recent years we have seen increased exposure to rain and rising groundwater levels rather than drought. Increased precipitation can lead to water seeping into basements creating problems with foundations. In relation to agriculture, water in the fields can also lead to reduced harvest yields.
- The impact of drought for Germany is currently low and well below the materiality threshold for the standard formula. Therefore, there is currently no reason to include the peril drought in the standard formula. If the peril drought becomes material and it is included in the standard formula, there must be no double counting of the risk.

Q51: How should agricultural drought be included in the SF?

- Yes
 No

If yes, please provide these other comments.

We believe that the parameters in the standard formula are adequate at present. In the event of accelerated climate change caused by tripping events we could potentially see large changes to exposure in the future. This comment is also relevant for other perils. In such cases, where there is a significant increase in risk and heightened exposures, a new stand-alone module could become more appropriate (e.g., agricultural drought could be considered in a new stand-alone multi-peril crop insurance module: option iv. page 68).

Additionally, some of our members have expressed concerns with regards to the association of agricultural drought with the subsidence module, noting that the exposure and the dynamics leading to the two perils could be different. Further consideration may be warranted by EIOPA in this respect.

Germany-specific comments:

Notwithstanding the comments in the first paragraph, are colleagues from the German Actuarial Association have noted the following comment, specific to their German market perspective:

- Agricultural drought could be considered as a separate peril as part of the Natural Catastrophe module and not as part of the premium and reserve risk module. It may be integrated in a separate Nat Cat submodule only considering crop insurance business with respect to agricultural drought (without mixing with the other perils).
- Another reason for considering agricultural drought separately is that not all insurance companies have it in their portfolio.

Q52: Are there key factors driving the agricultural drought risk not mentioned so far?

- Yes
 No

Q53: Do you have any other comments?

- Yes
 No

If yes, please provide these other comments.

While the Delphi method has been applied, it presents challenges in assessing the suitability of the calibrated country factors and their corresponding weights. It would be helpful to disclose the tests conducted on the results of the various models, along with the expert judgements used. To ensure transparency and traceability in capital-related measurements, additional details on these aspects would be valuable. Furthermore, providing a comparison of the standard formula factors with market-standard models such as AIR and RMS would enhance understanding and confidence in the methodology.

Presenting a risk ranking of different countries by perils could enhance the evaluation of the outcomes. Additionally, leveraging the EIOPA dashboard on insurance protection gaps might aid in representing and

evaluating natural catastrophe distributions more clearly. This approach could provide a more comprehensive understanding for stakeholders.

We note that the reassessment of perils and country factors is a process that was established before 2016. We are curious whether EIOPA could make provide a comprehensive database based the data used for calculating these factors. We would be willing to support EIOPA in developing such a NatCat database for future reassessments.

The impact assessment by EIOPA provides results at the member state level. Although outcomes for individual entities are determined, they are not displayed in the document. We were wondering if EIOPA could consider providing the impact ranges for individual entities.

Given that it has been over 10 years since certain natural catastrophes were last calibrated or recalibrated, it might be helpful to understand the process for monitoring the suitability of these calibrations. The underlying methodological concepts for the Standard Formula, such as the 200-year return period, seem to assume a statistically stationary risk regime. This approach may not fully account for emerging risks like climate change, which introduce non-stationary trends for weather catastrophes. Given that the NatCat recalibration is scheduled every five years, incorporating a forward-looking risk analysis could ensure that the parameters remain prudent not only currently but also in the future, considering the additional risks posed by unavoidable climate change.

Additionally, any insights on whether long-term views of natural catastrophe trends have been incorporated would be appreciated. Calibration of SII must be consistent with the basic requirement of solvency II: The SCR shall correspond to the VaR of own funds with a confidence level of 99.5% over a one-year period. A higher prudence is not required and should not be requested. A forward-looking assessment considering possible changes in the future shall explicitly be part of undertakings' ORSA. Possible trends need to be consistent with trends in all other climate-related scenarios to ensure holistically a coherent treatment.

More specific comments:

- The discussion paper's reliance on net risk analyses might overlook changes in risk due to limited exposure or adaptation measures. This approach may not be sufficiently prudent or forward-looking. It could be more effective to trigger NatCat recalibrations based on changes in the gross risk, allowing individual companies to then apply the formula based on their own net risk. This method might provide a more comprehensive understanding of the risks involved.
- Ireland specific comment: In the last 20 years in Ireland, there have been some material freeze events which are currently not reflected in the Standard Formula. Consideration should be given to the potential impact of Freeze risks within the Standard Formula.
- The number of countries affected by hail seems to be significantly lower than those impacted by windstorms or floods. We were wondering if this disparity has been addressed by the experts from the various NCAs?
- Governments are actively investing in mitigating effects of natural catastrophes (most notably flood), building barriers; not allowing any development in flood risk areas etc. We were wondering if any of these actions were taken into consideration in the calibration.
- It seems that the consideration of the overall natural catastrophe risk within the standard formula could be seen as rather conservative compared to the underlying risk itself, as shown by users of the standard formula who use their own NatCat models to assess risks.

- We would encourage consideration of risk mitigating effects of contract limits and deductibles in EIOAs analysis. Currently only sum insureds are defined as exposure basis and contract limits and deductibles do not have an influence. Therefore, also for this reason estimates are for many companies on the conservative side.

Contact

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