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Discussion Paper: Methodology on potential inclusion of climate change in the nat cat standard formula

Fields marked with * are mandatory.

Responding to the paper

EIOPA welcomes comments on the discussion paper: Methodology on potential inclusion of climate change in the nat cat standard formula.

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 Friday, 26 February 2021, 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.

Data protection
Please note that personal contact details (such as name of individuals, email addresses and phone numbers) will not be published. They will only be used to request clarifications if necessary on the information supplied. EIOPA, as a European Authority, will process any personal data in line with Regulation (EU) 2018/1725[3] on the protection of the individuals with regards to the processing of personal data by the Union institutions and bodies and on the free movement of such data. More information on data protection can be found at https://eiopa.europa.eu/ under the heading 'Legal notice'.

[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

* Stakeholder name

German Insurance Association

* Contact person (name and surname)

Finn Meunier

* Contact person email

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Questions to Stakeholders

Q1: Do you agree with the definition of the perils?

- (●) Yes
- ( ) No

Please explain.

Yes, we agree with the current effective definition of the perils. The definitions should not be changed.

In principle, the previous approach has proven itself. It is important that the methodology in the standard formula works well with the established actuarial practices and underwriting, for example with the risk definitions in the non-binding model terms and conditions.

Q2: Do you think that it should be clarified that the peril currently named “Hail” in the SF refers to “Convective Storm”?

- ○ Yes
- ◉ No

Please explain.

See the response to Q3.

Q3: Do you think that the peril currently named “Hail” in the SF should be renamed as “Convective Storm”?

- ○ Yes
- ◉ No

Please explain.

The term “convective events” can refer to very different phenomena such as hail, thunderstorm gusts, heavy rain, and lightning. These events result in very different types of damage and also differ in the meteorological observations and modelling. Therefore, renaming “hail” does not seem expedient.

Q4: Do you think that it should be clarified that the peril currently named “Windstorm” in the SF refers to “Cyclonic storm”?

- ○ Yes
- ◉ No

Please explain.

See the response to Q5.

Q5: Do you think that the peril currently named “Windstorm” in the SF should be renamed “Cyclonic storm”?

- ○ Yes
- ◉ No

Please explain.

According to the usual definition in the insurance terms and conditions, only the wind speed on site is decisive for the insured event “storm”, regardless of the meteorological history. The major, damaging storm events in Germany take place in winter, so they are more of a "cyclonic nature". In addition to winter storms, summer storms such as Ela 2014 or tornadoes are also part of the hazard “storm”. This should be reflected by the standard formula. Thus, “windstorm” should not be renamed, and the current definition should be kept.

Q6: Do you agree with the risks identified where there is a high confidence level on the current and short-term impact of climate change in Europe?

- ○ Yes
- ○ No

Please explain.

The climate project of the GDV with PIK, FU Berlin and University of Cologne shows a noticeable increase in claims expectations in Germany for storms, hail and floods for the middle to the end of the century. Conceptually, however, these model approaches are not suitable for making statements for the near future. In the claims history there are no trends in storms or floods if these are adjusted for portfolio and inflation. In the case of hail, there are indications that the average loss may have increased disproportionately.

Attribution research has identified no significant influence of climate change for major natural events in Germany (see e.g. for storm event Friederike: https://www.worldweatherattribution.org/the-stormy-month-of-january-2018-over-western-europe/ , rainstorms in spring 2016:

https://www.worldweatherattribution.org/european-rainstorms-may-2016/).

Q7: Do you agree to refer to a 1.5°C warming scenario for short-term (5-10 years) projection of climate change?

- ○ Yes
- ◉ No

Please explain. If no, would you suggest an alternative scenario?

In our response to Q9ff we discuss how the consequences of climate change on the expected loss accumulation can be encountered in the modelling in the near future. Regarding the question of the selection of a possible scenario, we would like to point out the following:

-The climate projections are designed primarily for long-term developments (mid to end of the century). This is a problem for all climate projections, regardless of the assumptions (scenarios) for the development of greenhouse gases.

-For "short-term" the results of the modelling for different greenhouse gas scenarios practically do not differ. In addition, the projections with 1.5 ° C have not been investigated as intensively as the other scenarios. Therefore, it might be advisable to also include the other scenarios in order to obtain a broader spectrum of the research results - if this is considered necessary / expedient.

-In addition, there are the so-called "climate predictions" e.g. provided by Germany's National Meteorological Service DWD that cover exactly this time period of up to 10 years (see https://www.dwd.de/EN /climate_environment/climateresearch/climateprediction/climateprediction_node.html). Currently, however, these predictions do not yet appear to be suitable for the specific application for the extreme events considered here.

Q8: Do you agree to take into account adaptation measures when assessing weather-related risks?

- (●) Yes
- ( ) No

Please explain.

Yes, adaptation and prevention measures are an essential component for insurance business and, thus, should be considered for assessing weather-related risks.

More climate-resilient buildings and more climate-resilient economic activity are essential aspects of the German strategy to adapt to the impact of climate change. In addition, land use planning has an important function, e.g. to keep particularly exposed areas free of buildings. The insurance industry is engaged in this area. So, insurers work in standardisation organisations and advise policyholders on preventive measures. Successful prevention can significantly reduce the loss and accumulation expectation. Therefore, it makes sense to appropriately consider the current average resilience.

Q9: Do you agree that in light of climate change, it is necessary to explicitly consider climate change in the recalibration of the Nat Cat SF for certain perils/regions as identified in Part 3?

- ( ) Yes
- (●) No

Please explain.

It is essential to observe, study and consider climate change. Thus, climate change must be reflected properly by the parameters of the Nat Cat SF. However, we are of the opinion that explicit consideration adds complexity to the recalibration without ensuring an adequate realisation of the effects due the uncertain development. A high frequency of recalibration, i.e. 3 to 5 years, does ensure to capture climate change to a high degree. First, this can be achieved because climate change is expected to evolve slowly and gradually over the next decades. Second, as stated by EIOPA, using historical data for the recalibration leads to inclusion of climate change effects such as trends in the parameters of the Nat Cat SF. The usage of validated data and models provides high reliability. (See also Q20-Q22 for further details on the recalibration.)

Besides a regular recalibration, transparency is another component for adequate consideration of climate change. Disclosure of the handling of climate change for any model used in this context would be very useful for industry as well as supervisors. Undertakings could use this information to assess possible deviations of risks that are not reflected in the calculation of the Solvency Capital Requirement. To do so, the industry is asked to build further knowledge on that topic. Thus, transparency and expertise will enable undertakings to profoundly reflect risks enhanced by climate change in their risk management and governance, e.g. in ORSA.

In case of a sudden rise of climate risks due to e.g. reaching a tipping point, in immediate recalibration should take place. As a last resort and only if these exceptional circumstances based on an objective base require additional measures, supervisors may set a capital add-on for an undertaking if the risk profile deviates significantly from the assumptions underlying the Solvency Capital Requirement (Art. 37, SII-Directive).

Q10: Do you agree that for relevant perils/regions where climate change is expected to have an impact, Nat Cat models explicitly considering climate change should be used if available?

- ○ Yes
- ◉ No

Please explain.

Available, reliable Nat Cat models that explicitly consider climate change can certainly be used. However, there are many limitations of and challenges for these models (temporal/geographical scales, variability of weather, attribution etc.) as mentioned by EIOPA and stated in several scientific studies (see [1] and references therein). Therefore, all Nat Cat models should be valid for usage. As stated in our response to Q9, transparency of Nat Cat models with respect to the handling of climate change is imperative. Thus, models can be chosen properly for recalibration and for individual application by undertakings.

Additionally, a large variety of models avoids overreliance on a single model and ensures better choices for individual modelling emphases.

[1] Fiedler T, Pitman AJ, Mackenzie K, et al (2021) Business risk and the emergence of climate analytics. Nature Climate Change 11:87–94. https://doi.org/10.1038/s41558-020-00984-6 / https://www.nature.com/articles/s41558-020-00984-6.epdf?sharing_token=KA_3fz0ShR9hqtb0XjVimdRgN0jAjWel9jnR3ZoTv0OSOZnKsSGMjP8867r_gOdtNaRkMlMK7aivZ2uhHDtFpU8uzvrzZHEujYqrZlJ5sTGgeE_X9odvXU60-2GY_AVrWtbp9ssBRiWWgCHv-o_hX-pTL0UJNJnCFyYVojc8eCI%3D

Q11: Are you aware of models, which would explicitly consider climate change which could be used to perform the Nat Cat SF parameters' calibration?

- ○ Yes
- ◉ No

Please explain. If yes, please provide information about models.

Q12: Do you think that new countries should be considered in the SF in light of climate change?

- ○ Yes
- ◉ No

If yes, please explain which ones, why and provide sources of data/studies.

The given answer "no" refers to Germany.

Generally, the risk subsidence is not material in Germany. Thus, the exposure to the risk isn't material either. Considering coastal flood, there is some risk given, however, with respect to the exposure coastal flood is not material in Germany. Barely any products insuring against coastal flood are offered in the German market.

Q13: For new perils, EIOPA has focused on wildfire. Do you see additional "new" perils which could be of relevance for the SF?

- ○ Yes
- ◉ No

If yes, which ones?

The given answer "no" refers to Germany.

The hazard "drought" might occur more frequently in Germany. However, the exposure for the German market is currently very low, and it is not expected to change any time soon (see also Q17).

Q14: Do you think that wildfire could potentially be material enough for the insurance sector to be considered in the SF?

- ○ Yes
- ◉ No

Please explain.

The given answer “no” refers to Germany.

Insurance products for wildfire are only offered by a couple of insurance companies and, thus, makes up a very small segment only. Therefore, wildfire shouldn’t be included in the standard formula for Germany.

Q15: Are you aware of models or data which could be used for the calibration of parameters for wildfire risk in Europe?

- ○ Yes
- ◉ No

Please describe the data and/or models.

Q16: For new lobs, EIOPA has focused on agricultural insurance and NDBI. Do see additional lobs, which could be of relevance for the SF?

- ○ Yes
- ◉ No

Please explain. If yes, please provide lobs names.

No, we do not see additional lobs because of materiality considerations (see Q17).

Q17: Do you think that crop insurance could potentially be material enough for the insurance sector to be considered in the SF?

- ○ Yes
- ◉ No

Please explain.

As mentioned in the response to Q13, droughts might occur more often in Germany. Particularly, because this hazard correlates strongly to rising temperatures. However, in Germany crop insurance is offered by a few companies only. Hail as component of crop insurance is taken account for in the risk category hail. Therefore, crop insurance is not material in Germany. The materiality of crop insurance is not likely to change unless public support becomes available.

Similar considerations hold for NDBI. This segment is very small and therefore non-material. Nevertheless, the development of NDBI should be studied in the future since not only climate risks, but also transitional risk might enhance an increase of claims in NDBI.

Q18: Do you think that adding a loading factor is the right approach to capture climate change?

- ○ Yes
- ◉ No

Please explain.

A loading factor is one option of explicitly modelling climate change. As states in our response to Q9, we do not see the need for explicit inclusion. The problems arising with the usage of a loading factor are named by EIOPA: attribution is very difficult, complexity would be added without a certain benefit and "double inclusion" of climate change effects could lead to too conservative Nat Cat parameters.

If the application of a loading factor is chosen, transparency is key for the same reasons as stated in the response to Q9. If such a loading factor is determined, it should be clearly disclosed what it is based on (data, methods, assumptions). It seems questionable whether the scientific calculation of a loading factor is easier than a regular recalibration.

Q19: Do you think that revaluating the correlation matrices is the right approach to capture climate change?

- ○ Yes
- ◉ No

Please explain.

The initial evaluation process of the correlation matrices has been highly complex. Including another complex, uncertain component as explicit consideration of climate change should be avoided as accuracy is not necessarily increasing as a result. Calibration traceability might even decrease.

A transparent revaluation of the correlation matrices should take place if EIOPA and/or stakeholders conclude that the parameters are not representative any longer. The effects of climate change will then be included implicitly.

Q20: Do you agree that there is a need to formalise an approach to re-assess current Nat Cat SCR parameters on a regular basis?

- ◉ Yes
- ○ No

Please explain. If yes, how often should this take place? Who should participate to such a reassessment? What should be the parameters considered?

Yes, we agree that there is a need to formalise an approach to re-assess current Nat Cat SCR parameters on a regular basis. A formal process can be comprehensible and transparent which both is of high importance. The recalibration process should be transparent with respect to the data used and the methods applied. As we expect changes due to climate developments to be slow and gradually, this can be captured by a regular recalibration of three to five years.

Q21: Do you agree that regular recalibration is needed but under the condition that the changes are material in order to not include artificial volatility?

- (●) Yes
- ( ) No

Please explain.

A regular recalibration of the standard parameters is a reasonable measure to reflect the effect of climate change. In the process it needs to be guaranteed that only validated data is used for the recalibration. It must be taken care to avoid unstable predictions and artificial high volatility. Only if trends in the claims history are evident or can be scientifically proven, risk factors should accordingly be adapted.

Nevertheless, there shouldn't be any explicit thresholds. If data and methods of high quality are used for recalibration purposes in a transparent manner, even small changes to the parameters should be approved.

Q22: Do you agree that any recalibration should take in account adaptation measures in a future calibration?

- (●) Yes
- ( ) No

Please explain. If yes, do you have any insights on how this can be done?

Yes, observations of the impact of adaptation and prevention measures are an essential component for insurance business. Thus, measurable effects of these actions should be taken into account for future calibrations. (See also Q8.)

* Q23: Do you have any other comments on the draft Opinion?

- ( ) Yes
- (●) No

Contact

Contact Form