

## EIOPA Discussion Paper: Climate Change Natural Catastrophe Risk

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

- Yes

#### **Please explain**

We generally agree on the definition of the perils; however, it would be useful if EIOPA provides a more granular list at sub-peril level (e.g. mud floods, flood debris, landslides) including those that are not to be considered. The list of sub-perils would help clarify if they need to be considered and in which category. It should also be defined whether “storm surge” is part of the “Windstorm” or “Hail” perils in the natural catastrophe risk sub-module of the Standard Formula.

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

- Yes

We agree that such clarification would be useful. Convective storm conveys a broader meaning.

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

- No

#### **Please explain**

Renaming perils in the Standard Formula could create additional confusion. If the definition of each peril is clarified as per discussion in questions Q1 and Q2 then this should be sufficient. Moreover, only hail can really cause very costly damage and represent a major event (e.g. ELA in 2014). The rest can be considered as so-called attritional losses.

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

- Yes

**Please explain**

We agree that "Cyclon" is a general term that can embed tropical and extra-tropical cyclons. We think that the term "wind" is misleading, because it points out at wind related phenomena which actually fall under the category of Convective storm (i.e. so called straight-line wind). As stated in Q1, it should be clarified whether "storm surge" is part of the "Windstorm" or "Hail" perils.

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

- No

**Please explain**

We believe it is key that the definition of each peril is clarified as per discussion in Q4.

**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

**Please explain**

As far as France is concerned, we agree with Table 3, specifying that

- Floods and extreme rainfall are also projected to concern metropolitan France and its Mediterranean area.
- The wildfire risk will increasingly concern France in terms of frequency, but not in terms of intensity. The scale of risks is not the same when comparing California or Australia.

We observe an increase in heavy precipitation and hail in the Netherlands. The change in river flood risk is hard to assess, as the effect of improvements in flood defenses and more space for rivers counterweighs the effects of increased river water discharge due to more precipitation in Western Europe. Wildfire and drought are not material risks for insurers in the Netherlands and subsidence is not covered in the Netherlands either.

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

- No

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

The different scientific studies show that over longer time horizons, the greenhouse gas emissions are expected to have an increasing influence on predicted climate. They also show that by the 2050s, there is clear divergence in the climate change projections between alternative future greenhouse gas scenarios. However, the projections also show that the results of the modelling for different greenhouse gas scenarios practically do not differ over short term horizons.

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

- Yes

**Please explain.**

We fully agree. The longer the time span considered, the more likely is that adaptations measures are taken. The greater the technological/economic feasibility of such measures, the more plausible is that they are taken into consideration. However, the adaptation scenario should depend on easy and verifiable assumptions applied uniformly across the affected markets/firms.

**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?**

- No

**Please explain.**

As scientific advances in the area of catastrophe risk modelling are rapidly evolving, setting up a common process would help the reassessment of the new evidence available and the need to be incorporated in the Natural catastrophe risk sub-module of the Standard Formula. We agree that a more regular recalibration of the parameters will allow to capture climate related developments, including the impact of climate change, by incorporating the latest observed trends.

However, the input data sources, models, parameters used, validation method and process of the recalibration exercise should be disclosed. The Solvency II calibration is based on the notion of 1:200 confidence level but past and current data do not necessarily translate into increases in the tail of the distribution. Naturally, based on certain actuarial or mathematical methods this would be an automatic outcome but it should be assessed whether such increase would still be appropriate.

**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

**Please explain.**

Where models are available which consider the impact of climate change, these should be included within the recalibration process. Climate change trends may be implicitly built into catastrophe models, given the use of historical data in constructing them; however, these trends are not necessarily explicitly incorporated into the modelling output. Uncertainties in the estimation of the extent and frequency of the most extreme events means that the climate change impact can be difficult to account for in risk models.

On the other hand, if a model correctly captures current climate change, even if implicitly, we see no reason why it should not be considered.

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

- No

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

Most catastrophe models used today to consider most perils do not explicitly model the impact of future climate change.

However, we expect that methods to quantify climate change in catastrophe modelling will develop as soon as the effects of climate change become more apparent over the coming decades.

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

- No

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

EIOPA had stated a materiality threshold so that a peril would be material for a particular country when compared to other perils if a complete scenario for this particular peril and country had been developed. Where the factor did not fail the significance test (greater than 1/15th of the largest country-wide factor), a factor had to be provided. This materiality threshold has been applied in the consecutive recalibration exercises and should be the basis to add new countries in the standard formula.

Regarding EIOPA's proposals:

- France: coastal flood risk exists but is not considered as a material risk, especially since storm Xynthia (2010) led to preventive measures in order to limit the exposure at a non-catastrophic level.
- Netherlands: the inclusion of Flood could be considered. A number of consultants/reinsurance brokers have developed flood models for the Netherlands that can be used for the assessment.
- Finland: Hail is not material. Convective storms causing hail risk are not material in Finland due to the Nordic climate.

- Sweden: Windstorm is the main risk. Regarding Flood, there are other causes for the flooding and the existing data is inconclusive as to whether climatic change will in fact increase / decrease the occurrence in the Nordic countries.
- Poland: Catastrophic events due to Hail have not been observed but rather some minor, local and non-material events. Moreover, there are refined models for hail, available so it will be difficult to properly evaluate this risk. Polish insurers with a large share in agricultural insurance do not observe any significant catastrophic losses due to this risk.

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

- No

**If yes, which ones?**

The evidence provided by EIOPA is not conclusive. Further work is needed to investigate whether additional climate change-related perils such as droughts and wildfire could be better captured in the natural catastrophe risk sub-module.

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

- No

**Please explain.**

With respect to wild fires, EIOPA should not disregard the fact that the wild fires occur in the “wild” and does not necessarily result in insurance losses. That would only be possible if a city would be impacted by an uncontrolled wild fire.

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

- No

**Please describe the data and/or models.**

N/A

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

- No

**Please explain. If yes, please provide lobs names.**

EIOPA had stated a materiality threshold so that a peril would be material for a particular country when compared to other perils if a complete scenario for this particular peril and country had been developed. Where the factor did not fail the significance test (greater than 1/15th of the largest country-wide factor), a factor had to be provided. This materiality threshold has been applied in the consecutive recalibration exercises and should be the basis to add new lobs in the standard formula.

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

- No

**Please explain.**

Crop insurance should have been already taken into account in the exposure measurement given that the Solvency II Delegated Acts account for general Fire and other damage to property exposure where crop insurance is generally embedded. Nonetheless, the current Standard Formula framework does not represent an acceptable proxy of the catastrophe risk associated to crops; indeed, this business is associated with significantly different damage factors. Moreover, the frequency of relevant events for insurance losses is higher than for the other LoBs.

In the Netherlands, crop insurance is offered by a few companies only. Hail as component of crop insurance is taken account for in the Hail risk category.

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

- No

**Please explain.**

The occurrence of events cannot necessarily be extrapolated to a 1:200 event. We do not agree that additional prudence should be introduced especially for scenarios where there is significant data, modelling exposure and expertise. Moreover, EIOPA would have to consider whether the outcome of applying loading factors is still reflective of the actual scenario.

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

- No

**Please explain.**

The existing correlation matrices were derived using a high degree of expert judgement. A revaluation every 5 to 10 years should ensure that the latest trends are being captured. If the available data, models and expert judgement show that climate change has altered the current spatial and peril dependencies in the tail of the distribution, the different values affected would have to be updated.

**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

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

We agree that it is necessary to formalise the approach used to assess the Nat Cat SCR parameters on a regular basis especially for Hail and Flood as these perils are sensitive to

climate risk. We support a regular recalibration of these risks but they should be evaluated not more frequently than every 5-10 years.

#### Need for Transparency

The approach to set up a regular recalibration exercise would have to ensure that the details of the analysis carried out (i.e input data sources, models, parameters used, validation method and reasoning) for deriving each country and correlation factor are published.

#### **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

#### **Please explain.**

A regular recalibration is needed if the previous ones relied heavily on expert judgment; expert judgment should be scrutinized more frequently, because it could be modified by new evidence or new scientific findings. However, the more the models are reliable and incorporate all scientific knowledge, the less is the need to frequently change the parameters.

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

- Yes

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

Yes, they should be taken into account in an easy and verifiable way. In our opinion within the reassessment process the expert group should assess the likelihood of different pathways and consider the underlying assumptions with respect to adaptation measures. Two criteria may be adopted to assess the need to incorporate adaptation measures: the time span of the analysis and the likelihood of technological/engineer solutions to be deployed on an enough wide scale to affect risks.

#### **Q23: Do you have any other comments on the draft Opinion? If yes, please provide these other comments.**

N/A