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Dear Basel Committee members

The Banking Association South Africa's Comments on the Basel Committee on Banking Supervision's (BCBS) Discussion Paper on The Role of Climate Scenario Analysis in Strengthening the Management and Supervision of Climate-Related Financial Risks

Who we are:

The Banking Association South Africa (BASA) is an industry body representing all banks registered and operating in South Africa. Currently, BASA has 36 member banks, which include both South African and International Banks. All licenced banks are members of BASA. It forges dynamic partnerships with relevant stakeholders to influence an environment in which banks can do profitable business in a way that promotes international best practice and sustainable socio-economic growth and development. Our vision and role, together with our areas of focus and a list of our members, may be found on our website, www.banking.org.za

Feedback on Consultation Questions:

Q1. How does the role of CSA vary based on the objectives listed above, and are there other prudential objectives where CSA could be relevant?
Risk identification: Risk identification requires an investment in a new capability and potential governance structure (framework) to be built around proactive identification, assessment, measurement, monitoring, response and reporting on emerging risks (if not already done at Financial Institutions). Reference is made to 'The Principles highlight that banks are expected to identify all climate-related financial risks that could materially impair their financial condition, including where these risks could impact the resilience of their business models and risk profiles'. **Risk Management Processes:**

- The process would need to consider justifying results, interpreting results, and getting buy in from various stakeholders. Getting 'comparable results' for benchmarking would not be achievable in the short term. The results may also require assurance or considering external review where applicable.
- Institutions who are more advanced in their internal CSA frameworks should also be able to make better strategic decisions than compared to their competitors.

Internal and supervisory capital and liquidity assessments:

- It is important not to look at climate as standalone but rather view it as an emerging risk type in terms of skills and capabilities. Climate risk management demands time and effort from a limited pool of specialists, such that banks and their counterparties have less resources available to manage stresses. Supervisors may require a 'simplified' approach which will not be easily attainable. Simplified approaches are expanded in question 3.
- Expert judgement is potentially difficult, and reasonable international case studies are limited. Ultimately, the ability to assess a liquidity risk impact from climate depends on the capability to assess this impact from other considerations, such as macroeconomic conditions. An institution should be sufficiently sophisticated before a climate risk flavour is added to 'normal' risk management.
- To the extent that CSA yields potential climate-adjusted capital and liquidity results, these would not typically be accounted for by banks beyond a 5-year horizon. These types of long dated drivers have less relevance for capital adequacy decision-making at the present. Consensus on what the appropriate timelines should be is not universally accepted. CSA therefore may have limited impact for capital measurement purposes at this stage, with the exception of more customised short-term scenarios (such as those developed by the NGFS) – which may have more application in capital management.

Other prudential objectives:

- CSA should be used to enhance internal and public disclosures.
- CSA could help institutions prepare for further complex and evolving regulatory requirements around ESG risks.
- CSA as a Pillar 2 tool could be used to inform future Pillar 1 requirements (if any).

Q2. What are the key challenges in the application of CSA and how can they be overcome?

Harmonisation challenges

- Despite the benefits of CSA, differences in its scope, features, and approaches across jurisdictions and banks pose challenges. These variations limit the harmonisation of supervisory expectations and the comparability of results.
- Exploratory stress tests, such as the stress test conducted by a South African regulator in 2024, will not require banks to adopt a single standardised methodology for translating climate risk drivers into climate-adjusted credit risk measures. This is because climate impact measurement at asset and firm level increases in uncertainty and precision over time.

Data Availability and quality

- Data availability and quality make full implementation across all the principles more challenging. Availability of data, especially in emerging markets is a concern. Even something as 'simple' as geocoding is not always easily available, accurate or obtainable. Useful data analytics, being the interpretation of inputs such as location and sector information into meaningful climate risk metrics, also remains a focus for future development.
- Access to reliable climate data can be limited, especially for long-term projections. Additionally, the added costs to attain scientific data from external providers can limit the scenario explorations.

- Understanding how a credit exposure might be at-risk from climate related risk drivers (both transition and physical risk) requires an understanding of the vulnerability of the obligor and/or the underlying asset being financed, to a range of different climate induced impacts that differ over time and based on different warming and transition pathways. This is not the kind of data that financial institutions have typically had a need for at the scale required for CSA. Other examples include a lack of complete and consistent data on building features (such as the extent to which they may be fortified against extreme flooding), and counterparties' plans to manage climate-related risks (e.g. a transition plan).
- This could be addressed by considering adjusting existing CSA's or using proxy data so that they better address the unique challenges of emerging markets. Other solutions might include developing and digitising new data tools and analytics and making repositories for data collection more open-source and accessible.

Individual scenario limitations

CSA relies on different climate scenarios, each with their own assumptions and limitations. These limitations can be overcome using multiple scenarios.

Integration into decision-making

Integrating CSA into financial and risk management decisions can be complex with limited regulatory guidance. E.g., integration into credit.

Model complexity and computation

- Running climate models and analysing results can be resource intensive and may require additional expertise that is outside of traditional banking expertise.
- From a risk management perspective, it becomes challenging when assessing risks across a range of different scenarios in terms of resources, setting of risk appetites, use of key risk indicators.
- There is limited understanding of interplay between Physical and Transition Risk, and it may be worthwhile to consider these as independent risks initially. However, there is likely a highly non-linear relationship, and it is not sufficient or even possible to minimise both risk types separately.
- From a Physical Risk perspective, key issues include the complexity of hazard models (overall increasing model complexity significantly). The following are some of the limitations in calibrating models: historic data not being geocoded, portfolios exposure data may not include location of assets (for example the banking relationship may be with the head office and the bank may have location data for that entity, but the financed assets that are vulnerable to physical risk may be located elsewhere), and counterparties in multiple locations may be difficult to track.
- Physical Risk can have supply chain implications which make it difficult to assess the full effects, accounting for medium term impacts of hazards is difficult (e.g., impact of flood on regional housing prices tends to linger). CSA exercises may need to consider first order impacts initially, then second order impacts later.
- Acute verses chronic physical risks would need more consideration in impacts and scenario generation.
- Model risk and framework validation is a challenge. New frameworks may need to be created, as compared to validating traditional credit models. Current forums or committees would need to be expanded to include relevant climate risk skills when approving methods or results.
- For Transition Risk, issues include lack of consistency in emissions calculations and frameworks, potential conflict of interest in self-published emissions and thus the need for additional third-party verification of disclosed emissions. Undoubtedly, fully modelled supply chain impacts can be difficult and complex. Given the lack of potential guidance around transition plans, organisations that banks lend to may lead to higher greenwashing risks.

Internal capacity skills and resources:

- Banks would need more quantitative skills around model development, model risk, data analytics, actuarial backgrounds to develop comprehensive frameworks. These skills are already high in

demand and in low in supply, creating skills shortage constraints. While the topic is evolving, banks should aim to retain top quantitative skills to develop CSA, supplemented with external skills where applicable.

- The extended reliance on expensive external skills, external models or off-the-shelf solutions may not be appropriate for many reasons, such as pressure on costs or black box approaches that are difficult to validate.
- Banks should ensure sufficient resources to adequately assess risk, including skills mix to be able to handle new data types, risk types, model types and build new methodologies as required. Given macroeconomic environments, banks may find it difficult to invest in all capabilities as required.
- Guidance on nascent or insufficient methodologies would be welcomed. Banks, regulators, and local associations should consider further investment in academic research. These could be partnering with local or international organisations, universities and education bodies (e.g., GARP, actuarial societies and UNEP FI).
- Ensure senior leadership are skilled in climate and ESG related risks and methods. Ensure skilled persons are appointed at various forums to check and challenge methods and results. Similarly, more junior leaders require upskilling to understand and interpret frameworks and results.
- Ensure focused upskilling in areas of climate change, transmission channels, and the ability to apply model adjustments.

Q3. What are the key areas where CSA methodologies and capabilities need to be further developed to be useful and relevant for the different objectives listed in this paper?

Scenario design and calibration:

- Ensuring scenarios are calibrated to specific regions, sectors, and time horizons enhances their relevance.
- It may be beneficial to split out primary and secondary climate related impacts. Not all portfolios may have a primary physical and/or transition risk impact.
- Guidance on how to enhance the forward-looking capacity of internal models to capture climate (ESG) risks automatically and progressively would be welcome.
- The need to develop more comprehensive and forward- looking models and scenarios covering all specific transmission channels across Transition Risk.

Harmonisation

- Any divergence in scope, features, and approaches of CSA across jurisdictions and banks limit the harmonisation of supervisory expectations and comparability of results.

Integration with risk management:

- Linking CSA with risk management frameworks allow for better understanding of climate-related financial risks.
- Integrating CSA into existing risk models and stress tests enhances its practicality.

Stress testing and sensitivity analysis:

- Developing standardised stress testing methodologies for CSA helps assess resilience to climate risks. Given the number of variables and analytical approaches to scenario analysis, there can be a wide range of scenarios that describe various outcomes. Given this, direct comparability across the organisation is likely to be a very real challenge. This underpins the importance of transparency.
- Guidance is needed on how to overcome limited historical data.

Investigate introducing scenarios into categories, such as:

- **Exploratory scenarios:** examine a range of plausible futures, based on potential trajectories of economic, social, and physical drivers. These scenarios describe how the future might unfold, according to known processes of change or as extrapolations of past trends. Exploratory scenarios

can be used for high-level problem identification and to determine potential climate-related risks and uncertainties that could arise from different plausible future states.

- **Normative scenarios:** describe a prespecified future, presenting a future state that is achievable (or avoidable) only through certain actions. The scenario then back-casts plausible pathways from this specified future state to the present to inform decisions on what is needed to achieve that preferred future. Normative scenarios are typically used for assessment and setting of specific targets and implementation plans, rather than assessment of climate-related risks and uncertainties.

Q4. Are the key features listed above appropriately calibrated for a range of CSA exercises, and should other features be considered?

Assumptions (Plausibility)

- There should be a balance on material risks, for example: credit and operational risks are quantitatively assessed in a first phase of a CSA. Other risks may need to be assessed qualitatively. Further, sub-divisions of portfolios could be looked at depending on how 'climate sensitive' a portfolio is.
- It is difficult to assess the assumptions of many scenario models due to their complexity, and limited experience of banking individuals in the use of these types of models. Moreover, proprietary models such as 'NiGEM' do not publicly provide their assumptions which make it difficult for banks to assess these assumptions, and how they may interact with any internal assumptions being made.
- Shifts in relationships is difficult to capture given limited historical credit data, limited understanding of the shift in these relationships, and the limited 'observable' climate change versus what is expected to come (i.e., the shift in parameters to date may not be reflective of the shift in the future).
- Use of external providers may cause inconsistencies by using different modelling assumptions (such as internal credit risk models) to what is used internally. Banks should look to adapt their internal models as far as possible to avoid the inconsistency.

Motivation

Stress testing: CSA should incorporate stress testing to assess the resilience of portfolios under extreme climate events.

Comprehensiveness

- Institutions should be careful not to view this as a solo entity exercise. The interactions between entities should be captured, where possible, especially where firms have banking and general insurance entities. Interactions between entities should be considered as well, such as insurance availability. Scenarios should consider factors beyond climate, including how other key entities are likely to behave, such as changes in insurance availability or contract conditions.

Transparency

- Uncertainty is difficult to assess (confidence intervals are provided for climate forecasts by the NGFS, but not for Transition driver forecasts)
- Embedment: where to use results should be outline from the outset where possible, including sufficient buy in from internal counterparties that the results will affect. Institutions should map out areas of the organisation that may be directly impacted and ensure involvement.
- although it is agreed that scenarios should be transparent and accessible, this becomes difficult especially when considering integrated assessment models (IAMs) and socio-economic scenarios.

Additional features to consider:

- Feedback loops: Incorporate feedback loops (e.g., climate-induced economic impacts affecting financial markets).

- Nonlinear effects: Consider nonlinear effects (e.g., sudden tipping points) that may amplify risks.
- Sector-specific risks: Tailor CSA to address sector-specific risks (e.g., agriculture, real estate, energy).
- Policy Scenarios: Include different policy scenarios (e.g., carbon pricing, regulatory changes).
- Climate and nature risks should be assessed together as they are interconnected.

Q5. How does the design of CSA exercises vary depending on the objectives? Please elaborate on the main usage-specific considerations for each of the different objectives.

Risk management and supervision

The design for CSA varies from that of stress testing in terms of scope where CSA is limited only to climate-related risks whilst stress testing considers broader risks beyond climate such as credit risk, liquidity and market risks. Furthermore, in terms of assumptions where CSA consider policy actions, technological developments and social responses to climate change, whilst stress test assumptions include sudden shocks such as market crashes and credit defaults and their knock-on effects.

Standardisation

- Standardisation would be difficult given variances in historical climate data, exposure to regions (without sufficiently granular breakdown), models for assessing risk, inclusion of transmission channels, inclusion of mitigation (how, and what constitutes), inclusion of contagion and supply chain effects.
- Moreover, lack of benchmark model means that banks are given significant scope to produce non-congruent results. Similarly, there is no 'standardised approach' for credit impact calculations which can be used as a fallback.
- Designing climate scenario analysis exercises requires consideration of trade-offs. Standardised scenarios built on a consistent set of assumptions and variable pathways—may result in greater consistency and comparability of specific estimates across participants. However, participants are uniquely exposed to different types of physical and transition risks, and standardisation limits their ability to tailor scenarios to risks most material to their portfolios. Similarly, greater prescription in methods and data foster comparability of estimates but could obscure idiosyncratic risks and stifle innovation as practices continue to evolve.
- The overall design needs to fit the purpose, where regulatory exercises may have different assumptions across the dimensions (e.g., a static balance sheet to convey a worst-case scenario). Conversely, an institutions internal CSA may require more diverse features. A CSA framework would therefore have to fit in short term must have and longer-term objectives.

Analytical frameworks (Alternative frameworks)

The paper speaks about integrating machine learning and artificial intelligence. While this is important and valid points, consideration needs to be drawn to increased model risks (and shortage of skills) with organisations currently grappling with ML/AI model risks.

Q6. What additional usage-specific considerations are relevant for each of the different objectives of CSA listed in this paper and why?

Consideration of socioeconomic and behavioural impacts

Consider socioeconomic and behavioural impacts of the selected scenarios, sector-specific climate-related risks, and alignment with national and regional climate change policy goals. Continue to consult relevant stakeholders and consider systemic implications of the use of selected scenarios.

Baseline selection:

Given this is an attempt to assess climate change risk, the baseline should be a scenario 'without' climate change i.e., historical experience. Any forward-looking assessment, such as the inclusion

of non-climate related GDP change, would need to be applied to all scenarios then adjusted. However, an easier approach is that the historical average continues, with climate scenarios reflecting changes versus this average. In this way, banks are assessing only the impact of a changing climate.

Regulatory and jurisdictional considerations:

Considering local jurisdiction regulatory, supervisory, and country requirements.

Integration of climate risk in risk management

A CSA exercise needs to consider the maturity of integration or incorporation of climate (ESG) risk drivers in the management of risk types other than credit.

Q7. Which scenario and scenario features are used for the different objectives listed (ie internally developed, those from scenario builders or a combination of the two)?

Scenario Builders

Scenario builders are currently used for risk management and stress testing. A scenario builder would allow for more transparency, standardisation, and flexibility. As always, interpreting and applying impacts onto scenarios would be up to individual banks. More short term severe but plausible scenarios would be beneficial for institutions' planning.

Internally Developed Scenarios

Individual created scenarios would be beneficial in time. However, these are skills that banks would need to understand over time. 'Climate Scenarios' modelling may be a long-term issue that banks will have to grapple with. As climate related requirements become more intense, the requirement for 'climate scenarios' models and forecasts would become important for banks.

Q8. What features and measures could be adopted in the future to enhance the utility of currently available scenarios (e.g. NGFS, IEA, IPCC)?

- Consider the knock-on effects of physical risks (e.g., melting ice leading to sea-level rise) more explicitly.
- Scenarios should also consider to interlinkages between different sectors, such as for example, energy, agriculture, water, and health, etc to provide a better, holistic view of development pathways and potential trade-offs between sectors these.
- Considerations should also be given to the fact that scenarios are not static and have to be updated periodically to reflect changes in economic activities, changing circumstances, new data etc. Scenarios should be built with flexibility to allow for iterative analysis and refinement over time.
- Greater coverage and granularity (e.g., regions) of scenarios would be welcomed.
- Emerging markets (e.g., across Africa) suffer from unavailability of useful scenario forecasts.
- Collaboration amongst supervisors with these expert bodies can help to actively understand the currently available scenarios allowing the generation of more customised scenarios for a country or portfolio or asset class. See Q9 for further suggestions.
- The objective being for local supervisors to provide local banks with common scenario(s) that is aligned with the existing jurisdiction frameworks, national contribution, local policies and local supervisory tools and reporting.
- Improved transparency in scenario modelling and assumptions would be beneficial for banks consuming the scenarios.
- More frequent calibration of scenarios would be invaluable in such an evolving space.
- An increased focus on other ESG variables would be beneficial, such as elements of social risks.

Specific measures for the NGFS and IEA Scenarios

- NGFS scenarios Enhancement measures:

- Tipping points: Incorporate more explicit consideration of tipping points—critical thresholds beyond which climate impacts accelerate significantly.
- Physical impacts: Increase the coverage of physical hazards (e.g., extreme weather events, sea-level rise) that are not fully captured in current scenarios.
- Societal impacts: Address societal impacts influenced by climate change, such as migration patterns.
- Technology assumptions: Refine assumptions about technological developments and their impact on the economy.
- Nature impacts: Address nature impacts influenced by climate change, such as change in biodiversity and availability of resources.
- Include localised data: NGFS scenarios (applies to other scenarios as well) could further be enhanced by including localised data showing developing country contexts and circumstances, in considering challenges around data limitations.

- IEA scenarios Enhancement measures:
  - Regional resolution: Increase country/regional coverage to better capture local climate impacts.
  - Adaptation strategies: Include scenarios that explore different adaptation strategies to climate change.

Additional Consideration: Endogeneity of Climate Risks

The perceptions of the financial sector to the climate policies that underpin the different scenarios, is not factored into the design of the scenarios. To achieve a below-2 degree warming outcome, higher transitions to lower carbon activities are required. This is supported by climate policies (carbon taxes) that either incentivise (e.g. a green discount) or penalise (e.g. an adverse premium) activities dependent on their contribution to climate mitigation or aggravation. If the financial sector has a poor perception of the credibility of climate policies and their ability to achieve the outcomes in the scenario assumptions, then they will not adjust their risk assessments and the cost of capital will remain a barrier to transition finance flows. The net result is that the real-world outcome differs from that assumed in the climate scenario and banks (for example) may underestimate their climate-related risk exposures. This means too that the financial system may react to the scenario, either positively or negatively, on the actual realisation of this scenario – this circularity is called the 'endogeneity of climate risks.

Therefore, it has been suggested that CSA needs to account for this endogeneity in its design so that banks and other FIs are able to stress more completely.

Q9. What alternative or novel approaches could supervisors consider for CSA and how might these be used for prudential purposes?

- Supervisors could consider that climate scenarios are appropriately included in Recovery Planning.
- Supervisors should look at both simplified (e.g., qualitative) and complex approaches, through a phased plan.
- Qualitative based assessments, such as heatmaps could ensure increased efficiency. Moving toward a quantitative approach may be a big jump for institutions coming to terms with climate (ESG) risks.
- The CSA principles could look at creating a risk-based adjustment (e.g., based on high/ medium/ low risk) and these could be for internal capital demand assessments. Local supervisors to specify these categories and risk adjustments based on risk characteristics and mitigation factors. This approach could be difficult (but not impossible), as to quantify a standardised approach regulators would require discussion and insight from the local banks and experts. Arguably, to develop standardised measures a regulator would need banks to participate in an industry climate stress test.

- Standardised approaches could assist institutions who do not have the capacity, skills, or resources available.
- Supervisors should look to forming a better working relationship with Banks and providers such as the NGFS. The NGFS should have dedicated support to banks in different jurisdictions. This could take the form of participating banks sponsoring or contributing more fees toward the NGFS to improve capabilities. The NGFS could also play a part in a creation of a larger central data repository for climate data.
- A key consideration for institutions' CSA is insurance. Banks should use various scenarios to assess changes in insurance coverages or policies.

Additional consideration: broader environmental risks in macroprudential frameworks

Consideration of broader environmental risks in macroprudential frameworks due to the systematic impacts of climate risks. Both physical and transition risks have the potential to impact and effect not only individual financial institutions but also a substantial portion of them concurrently across sectors and/or countries. This simultaneous exposure across sectors and regions poses a threat to the stability of the financial system. Climate-related risks may escalate to systemic levels due to their inherent attributes, including irreversibility, the correlation between natural hazards (such as wildfires and heatwaves), the amplification between transition and physical risks (where delayed action exacerbates both types), or their concentration within specific sectors or geographic areas.

Q10. How could the effectiveness and efficiency of supervisory exercises be improved?

- Encourage education and training at banks. Education and training would need to dive into aspects of CSA, and detailed aspects of Physical and Transition risks.
- Encourage discussions with financial institutions within a local economy around ESG issues.
- Ensure banks have appropriate skills, potentially local regulators to outline skills for positions to run and execute CSA.
- Consider how a local regulator to assess the relevant skills in the organisation, this could take the form of various disclosures or a scorecard-based approach.
- Governance process around CSA at institutions needs to be robust and well documented.

General & Other Comments

We welcome the BCBS's work to promote a common understanding and approach to the design and use of Climate Scenario Analysis (CSA) including Climate Stress Testing (CST) activities. As more banks across the world are using CSAs as an input to a range of applications, including climate risk assessment, management and disclosure, there is merit in BCBS providing some guiding principles for CSA aimed at enhancing the coherence of supervisory exercises (i.e. 'top-down' CSA) across the globe.

However, as the BCBS acknowledges in the Discussion Paper and in its principles for the effective management and supervision of climate-related financial risks (2022 Principles), the field of scenario analysis is highly dynamic practices are expected to evolve rapidly as climate science advances. This continues to be the case, and while we support the BCBS's aim of promoting a common understanding of supervisory expectations and harmonising strong practices, it is vital that this does not come at the cost of flexibility in adapting to changing climate science and increased availability of detailed and reliable data on climate-related financial risks.

Additional Comments:

- CSA is nascent and mostly an exploratory tool at this stage – decision usefulness of CSA will improve over time, but it remains to be seen whether CSA can be fully decision useful in the foreseeable future.
- Any future guidance by the BCBS on CSA should remain principles-based and proportionate and not seen as an 'endpoint' considering the evolving nature of the topic. It is important that banks have sufficient flexibility to determine which approaches are fit for purpose, particularly in the context of continuing developments in climate science and evolving practices around identifying and quantifying climate-related financial risks.
- The paper may create the assumption that that climate impacts should be considered in isolation of other existing environmental challenges e.g., nature related risks and water risks together with the potential negative social impact on stakeholders.
- Due consideration can also be made to the ISSB, IFRS S1 Conceptual Foundations, IFRS S2 Climate-related Disclosures.

Conclusion

BASA would like to thank the Committee for allowing us to comment on the Discussion Paper on The Role of Climate Scenario Analysis in Strengthening the Management and Supervision of Climate-Related Financial Risks.

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