NGFS Survey
on Climate Scenarios
Key findings

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NGFS

Central Banks and Supervisors
Network for Greening the Financial System

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About the survey

In February 2023, the NGFS launched its feedback survey on climate scenarios to learn from users' experiences, following the publication of the <u>third vintage</u> of the NGFS scenarios in September 2022. This survey marks a further step in the climate scenario development journey that the NGFS first embarked in 2019:

- It is the first publicly accessible survey carried out by the NGFS on climate scenarios.
- It gathered public feedback from a broad community of scenario users and stakeholders globally.
- Its key findings will guide the NGFS scenario development work plan going forward to help ensure that the NGFS scenarios remain relevant and comprehensive for a continuously growing user base.

This document summarises the key findings throughout the three sections of the survey and outlines the next objectives for the NGFS scenarios. Further details on the survey findings have been published separately, see <u>here</u>.

1. Overview of respondents

How many responses were collected and where do they come from?

The survey collected 213 responses from 57 countries. Germany was the country most represented as the headquarters of respondents, while in terms of jurisdictional scope, most respondents indicated that they work for an organisation with an international or European scope.

The survey reached both the private and public sectors, with most responses coming from non-central banks, and around a third from NGFS members. Financial institutions are the most represented type of institution, with 38% of responses coming from banks, insurance corporations and asset management companies, among others. They are followed by central banks, with 30% of responses, and consulting companies, with 9%. Responses were also collected from the academic and research community, supervisory authorities, international organisations, and civil society organisations.

Out of the total number of responses to the survey, 54% were submitted in an institutional capacity and 46% in an individual capacity, as the survey allowed both options to gather as many varied perspectives as possible from scenario users. Most of the institutional responses came from financial institutions, consulting firms and supervisors; while respondents from central banks, academia and research answered mostly individually.

How familiar are respondents with the NGFS scenarios and climate scenario analysis?

Although respondents are familiar with a wide range of climate scenarios, by comparison they self-assess themselves as more experienced with NGFS scenarios. Regarding the development and application of climate scenario analysis, 29% of the respondents are already at an advanced stage of their exercises, 45% are gaining experience, while 26% are still at an early stage or have just started.

2. Use of the NGFS scenarios by respondents

Respondents use climate scenario analysis primarily to assess how climate risks could affect their organisation, individual financial institutions, or financial stability. Specifically, the three main purposes of climate scenario analysis indicated by most respondents were (1) *impact assessment* for measuring the potential effects of climate risks on their organisation (either their own or customers' ones); (2) *macro-prudential purposes* for assessing the potential effects of climate risks on financial stability; and (3) *micro-prudential purposes* for assessing the potential effects of climate risks on individual financial institutions and improving climate stress testing. Potential activation of regulatory requirements and disclosure procedures are also identified by respondents as an additional important objective for carrying out climate scenario analysis. While institutions may have different primary objectives in their exercises in line with their mandates, *capacity building* stands out as one of the key secondary objectives for most respondents, independently of the type of institution.

Most respondents assess both transition and physical climate-related risks and their potential effects through key financial risks. Examples of the most assessed types of risks are credit risk, market risk, operational risk, and liquidity risk, among others. Most respondents conduct analysis at either sectoral or counterparty level, i.e., 26% mixed counterparty-sector level analysis, 26% sector level analysis, and 14% counterparty level analysis. Financial institutions seem to focus mainly on mixed counterparty-sector analysis, consulting firms on sector-level analysis.

The NGFS scenarios have become a key ingredient to identify climate risks globally, with over 70% of respondents using them in their exercises primarily to better understand the impacts of climate risks and to develop internal capacity. Around 20% of respondents have not yet used any climate scenarios, or are undecided, and only 6% use exclusively other non-NGFS climate scenarios. Looking at the respondents using NGFS scenarios, 57% rely solely on NGFS scenarios, while 15% also use other non-NGFS climate scenarios. The main influential factors that lead respondents using NGFS scenarios to also use other climate scenarios are comparison and benchmarking purposes, an insufficient level of granularity, or the lack of some output variables. The survey results show that consulting firms tend to combine NGFS and non-NGFS scenarios for their exercises, while most financial institutions and central banks rely solely on NGFS scenarios.

95% of the respondents who have already concluded their exercises based on NGFS scenarios stated that they were (at least partially) satisfied with the outcome. Main expected outcomes of the respondents' exercises include a better understanding of the impacts of climate risks and capacity building on climate risks and scenario analysis, in line with their planned objectives.

Of the six NGFS scenarios (Phase III), the most used by respondents are Net Zero 2050, Delayed Transition, and Current Policies. About half of the respondents using NGFS scenarios rely solely on the results of the output variables of the NGFS scenarios, and the other half adapt variables or add new ones for the purposes of their analysis. In most cases, the reasons for adapting or adding new variables were to increase the sectoral granularity of the macro-financial results, to augment the

scenarios with more macroeconomic and market variables, and to increase geographical coverage/granularity. In about half of the cases, users developed in-house methodologies to complement the NGFS scenarios with more variables. In the remaining 50%, users relied on external third-party vendors/consultants or collaborated with academics and/or business experts.

Almost half of the respondents using NGFS scenarios rely on multiple models in their analyses and consider transition and macro-financial variables to be the most relevant NGFS scenario output variables for their exercises. In terms of the models most used by respondents, the REMIND-MAgPIE ranks first across all modelling approaches, followed by the NiGEM and GCAM models. Around 70% of the respondents using NGFS scenarios consider the transition variables provided by the Integrated Assessment Models (IAMs) and the macro-financial variables provided by the NiGEM model as the most relevant variables for their exercise, while climate variables play an important role for around 35% of them.

The NGFS framework is positively evaluated compared to other climate scenarios, especially for the combination of transition, physical and macroeconomic modelling and the number and relevance of output variables. While these unique features of the NGFS scenarios were confirmed as key strengths, respondents also identified key areas for technical improvement of the NGFS scenarios, such as the magnitude of transition shocks and the level of sectoral granularity.

3. User priorities and respondents' suggestions for improvement

Almost all respondents agreed that the NGFS scenarios represent a global public good as a set of freely accessible climate pathways. There was also a broad consensus among respondents on the features of the NGFS scenarios that make them a common starting point for assessing climate risks, although some questioned whether the results were internally consistent, globally applicable, and comparable across regions. Respondents identified three clear priorities for improving the NGFS scenarios: (i) increasing sectoral granularity and geographical coverage, (ii) introducing short-term scenarios, and (iii) better representing acute physical risk.

Respondents using NGFS scenarios would benefit from a better understanding of the modelling framework and output, as well as more guidance on how to access and use the scenarios. Respondents face three main areas of challenges when using NGFS scenarios which relate to finding clear documentation to understand the NGFS scenarios, finding guidance to apply the scenarios, and accessing and/or identifying the key output variables relevant for their exercises.

While respondents positively value the existing support material, there is broad agreement on the need for more user guidance and accessible documentation on the NGFS scenarios to improve users' experience. When asked about their suggestions for improving the usability of the NGFS scenarios, respondents seemed to agree on the need for (i) more transparent documentation, (ii) improving

accessibility and usability of the scenario output data, and (iii) more user guidance and outreach to allow for more interaction between scenario modelers and users. Overall, the suggestions reflected the challenges identified by the respondents. Importantly, comments collected through open-ended questions from most respondents point to capacity building in climate risk and scenario analysis as an emerging strategic priority, regardless of the type of institution or exercise conducted.

Development pipeline

The next version of the NGFS scenarios (Phase IV) will be released by the end of 2023 and will include updated data as well as both technical and usability improvements. On the one hand, technical refinements of the modelling framework will improve the design of the NGFS scenarios, especially in the areas of sectoral granularity, short-term scenarios, and physical risk. On the other hand, more transparent and accessible communication, and regular engagements with an expanded community of users will help to widely disseminate information on the NGFS scenarios and promote their use by a broad range of stakeholders.

The NGFS has developed a multi-year work program centred around five strategic priorities, and five different sub-streams have been created to ensure the strategic and technical objectives will be reached. Work is ongoing in each of the sub-streams to contribute to their defined priorities, i.e., (i) scenario narrative and updates, (ii) short-term scenarios, (iii) physical risk, (iv) sectoral granularity and (v) communication and engagement.

Following the ongoing conceptual work on new NGFS short-term scenarios, a note will be published in Fall 2023, after which the analytical implementation will start. A key objective of introducing short-term climate scenarios into the NGFS scenarios framework is to better capture the near-term implications of transition policies and natural disasters to be best used for climate stress testing and scenario analysis applications.