International Association of Deposit Insurers

Testing of Crisis Preparedness and Management: Overview, Practices and Experiences

March 2025

This Paper has been prepared by the Contingency Technical Working Group of the IADI Analysis Council Committee.

This publication is available on the IADI website (www.iadi.org).

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Abbreviations

AMF	Autorité des marchés financiers (Québec)
BFG	Bankowy Fundusz Gwarancyjny (Bank Guarantee Fund) (Poland)
CDIC	Canada Deposit Insurance Corporation
COE	Centre of Excellence (CDIC)
CISR	Complex Institution Supervision and Resolution (FDIC)
CMD	Crisis Management Department (PIDM)
CP	Core Principles for Effective Deposit Insurance Systems
CPRC	Core Principles and Research Council Committee
DGS	Deposit Guarantee Scheme
DNB	De Nederlandsche Bank
DRR	Designated Reserve Ratio (FDIC)
EC	Essential Criteria
ERM	Enterprise Risk Management
FDIC	Federal Deposit Insurance Corporation
FSI	Financial Stability Institute
FSN	Financial Safety-Net
IADI	International Association of Deposit Insurers
IPAB	Instituto para la Protección al Ahorro Bancario (Mexico)
NDIC	Nigeria Deposit Insurance Corporation
PIDM	Perbadanan Insurans Deposit Malaysia
RCNA	Regional Committee of North America
SPPU	Strategic Planning & Processes Unit (IPAB)

Executive Summary

Since the 2007-08 Global Financial Crisis, testing of crisis preparedness and management plans emerged as an important tool for financial sector authorities to increase their ability to effectively respond to bank failures and other events that could adversely impact financial stability. The lessons from the 2023 bank failures reinforce the need for deposit insurers, regardless of mandate, to test their operational capabilities[1], simulate effective decision making, and enhance cooperation and coordination with their financial safety-net partners (FSN). The COVID-19 pandemic also highlighted the importance for deposit insurers to test organisational resilience to critical events. However, despite increasing adoption and implementation of testing by deposit insurers and regulatory authorities, the 2023 IADI Thematic Review of Core Principles revealed high levels of non-compliance with the associated Core Principle. The report concluded that additional awareness, experience sharing, research and technical support on testing is essential to support deposit insurers' efforts to increase compliance.

The Contingency Plan Research Working Group (the Working Group), on behalf of the then IADI Core Principles and Research Council Committee (CPRC),[2] has undertaken a research project to review the evolution of testing programs across IADI members, identify emerging practices and provide insights on how testing is used to advance preparedness. Additionally, the Working Group has examined the connection between testing programs and real crisis events. Information for this project was gathered through a literature review, a survey, and case studies. Nineteen IADI Members participated in a survey and each of the six member jurisdictions of the Working Group provided a case study for this paper. This paper identifies the following key findings:

Objectives and scope of testing programs have expanded over time: In many jurisdictions, testing exercises were initially done on an ad-hoc basis, typically focusing on evaluating deposit insurers' policies and procedures and validating the capacity to manage a payout and liquidation. As testing programs have matured, deposit insurers are taking a more rigorous approach to testing, with annual or multi-year frequency and clear processes for setting testing priorities. The scope of testing has, in many cases, also expanded to increasingly cover resolution preparedness as well as topics such as cybersecurity and third-party risk. In recent years, testing exercises conducted across the IADI membership have more frequently included other safety-net members, foreign authorities, and other external stakeholders, reflecting the importance of broader engagement and *ex-ante* coordination particularly when managing systemic risk.

[1] IADI Lessons Learned, 2023

[2] During the IADI governance reforms passed at the 2023 Annual General Meeting, the CPRC was replaced by the Analysis Council Committee and the Policy Council Committee. The Working Group submitted the final draft to the Analysis Council Committee.

Connecting testing to real crisis events: Jurisdictions with recent experience in handling failures observe that their crisis response has benefited from these testing exercises. Despite a lack of objective criteria to measure the success of the testing program, respondents believe that testing was instrumental in influencing their decision making during a crisis (Section 4.2.1). At the same time, failures and near-failure events have led to the development of new scenarios and prioritisation of future testing topics. A recurring takeaway from real-life experiences from the case studies is the need for broader involvement within and across organisations when conducting exercises. Regular exercises with relevant external stakeholders can also build stronger business-as usual relationships and ensure open dialogue with other authorities.

Challenges remain: For respondents without testing programs, the lack of dedicated financial and human resources is the primary reason they have not been introduced. For others, managing the time and effort required amidst competing priorities remains a key challenge given the limited availability of decision makers and subject matter experts.

The survey and case studies highlight that, while testing exercises can be effective in preparing deposit insurers for real-world challenges, some cannot be anticipated. Testing exercises are not meant to predict the circumstances of a failure or other major events, but to provide realistic situations that prompt participants to respond as they would in real life. The shared experiences stress the importance of agility and adaptability; while no two crises are the same, frequent testing can lead to timelier and more coordinated actions when managing live cases. Going forward, IADI members should promote awareness of the exercises conducted by their jurisdictions and consider how to best share scenarios, resources, and respective learnings.

Key Terms

The following are key terms for the paper:[3]

Bank: Any entity which accepts deposits or repayable funds from the public and is classified under the jurisdiction's legal framework as a deposit-taking institution, as defined in the IADI Glossary.

Core Principles: The IADI Core Principles for Effective Deposit Insurance Systems[4] promote best international standards in deposit insurance and support the stability and soundness of financial systems. They are reflective of and adaptable to a broad range of jurisdictional circumstances, settings and structures. They have been included in the FSB's Compendium of Key Standards for Sound Financial Systems and are the basis for the IMF/World Bank assessments.

Crisis Preparedness and Management: Crisis preparedness and management is done by the deposit insurers, resolution authorities, and other financial safety-net participants, individually as well as jointly, to outline policies, procedures and actions that they might follow in the event of unexpected developments and significant shocks. It helps identify measures for preserving the operational and financial situation of an organisation.[5]

Crisis Preparedness and Management Testing: The exercises undertaken to test the viability of plans for crisis preparedness and management.

Deposit Insurer: A specific legal entity responsible for providing deposit insurance, deposit guarantees or similar deposit protection arrangements.

Financial Safety Net: A framework that includes the functions of prudential regulation, supervision, resolution, lender of last resort, and deposit insurance. In many jurisdictions, a department of government (generally a Ministry of Finance or Treasury responsible for financial sector policy) is included in the safety net.

Loss Minimiser: A mandate in which the Deposit Insurer actively engages in a selection from a range of least-cost resolution strategies.

Mandate: A set of official instructions describing the Deposit Insurer's roles and responsibilities. There is no single mandate or set of mandates suitable for all Deposit Insurers. When assigning a mandate to a deposit insurer, jurisdiction-specific circumstances must be taken into account. Mandates can range from narrow pay-box systems to those with extensive responsibilities, such as preventive action and loss or risk minimisation/management, with a variety of combinations in between. These can be broadly classified into four categories: Pay-box, Pay-box Plus, Loss Minimiser and Risk Minimiser.

Member Institution: A financial institution that is a member of a deposit insurance system.

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[3] Key terms in this section were taken from the IADI Glossary.

[4] IADI (2014).

[5] For this paper, "crisis preparedness and management" is a synonym and replacement for "contingency plan".

Paybox: A mandate in which the deposit insurer is only responsible for the reimbursement of insured deposits.

Paybox Plus: A mandate in which the deposit insurer has additional responsibilities, such as resolution functions (e.g. financial support).

Risk Minimiser: A mandate in which a deposit insurer has comprehensive risk minimisation functions, including risk assessment/management, a full suite of early intervention and resolution powers, and in some cases, prudential oversight responsibilities.

(**Crisis) Simulation**: Operation-based exercises that mobilise all the necessary personnel and logistics (e.g., systems, databases, crisis rooms, communication protocols) that would be called upon in a crisis. Often, they are run in real-time to reproduce the constraints and the stressful environment of a real crisis.

Tabletop: Discussion-based exercises where team members meet to discuss their roles, responsibilities, and decision-making capabilities to respond to a simulated scenario without operationally carrying out steps or producing documents. Tabletops may be led by a facilitator who guides participants through a discussion of one or more scenario events.

1. Introduction

The International Association of Deposit Insurers (IADI), alongside other international standard setters, underscores the importance of strengthening crisis preparedness and management plans and testing them regularly. These activities allow deposit insurers to identify and reduce gaps and weaknesses in their crisis preparedness frameworks. Testing of crisis preparedness and management is increasingly being adopted among deposit insurers due to the evolving financial landscape and the promotion of testing as an international best practice.

In 2021, the Regional Committee of North America (RCNA) published "Contingency Plan Testing in North America" (hereafter 2021 RCNA paper).[6] The paper focuses on the rise of crisis preparedness and management testing (formally contingency plan testing) since the Global Financial Crisis and analyses the testing programs of four authorities in North America.

The IADI Core Principles and Research Council Committee (CPRC) identified crisis preparedness and management as a research priority in its Annual Policy and Research Plan FY 2022/23 and established the Contingency Plan Research Working Group ("the Working Group") to publish a paper building on the RCNA paper and fulfilling its recommendation for future research projects. During the Core Principles Review, IADI adopted the preferred term "crisis preparedness and management" instead of "contingency planning" to better reflect deposit insurers' broader activities.

The Working Group includes representatives from the Bankowy Fundusz Gwarancyjny (Bank Guarantee Fund - Poland) (BFG), the Canada Deposit Insurance Corporation (CDIC) who chaired this work, De Nederlandsche Bank (DNB), the Federal Deposit Insurance Corporation (FDIC), the Nigeria Deposit Insurance Corporation (NDIC), and Perbadanan Insurans Deposit Malaysia (PIDM)[7].

The paper explores the four themes assigned by the CPRC. First, it focuses on the development of testing programs and provides guidance for jurisdictions who have not established a testing a program or are in the early stages of doing so. Testing improves a deposit insurer's preparedness regardless of their mandate or organisational maturity. Second, for deposit insurers with mature testing programs it assesses their ability to innovate and improve their preparedness. Third, it identifies the linkages between testing and real events. Finally, it provides an update on the four RCNA jurisdictions from the 2021 paper.

The paper is structured as follows: Section two covers the paper's methodology, and section three includes a review of the literature. Section four analyses survey results and case studies, and provides an update on the four jurisdictions from the 2021 RCNA paper. Section five concludes the paper.

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[6] IADI (2021), "Contingency Plan Testing in North America"

[7] Information about these organisations is provided in Appendix I.

2. Methodology

The Working Group follows the same methodology used in the RCNA paper, leveraging three sources to inform this work: a literature review of research published since 2021, a comprehensive IADI survey, and six case studies.

The literature review builds on the review conducted for the 2021 RCNA paper by expanding the scope beyond North America. It also considers recent papers, the Thematic Review published by IADI[8], and examples of recently conducted simulation exercises. Given the insufficient literature related to the March 2023 failures[9] at the time of writing, a meaningful assessment is not possible. Details of the literature review can be found in Section 3.

In addition, a comprehensive survey was developed based on the 2021 RCNA paper, with a broader scope that includes regions and jurisdictions with different frameworks and toolkits. The survey has three parts:

- Part I gathered information on the use of crisis preparedness and management testing to advance resolution preparedness. including organisational approach and testing methodology
- Part II focused on the connection between real crisis events and testing programs, and how each one is used to inform the other
- Part III captured changes and progress made by the RCNA jurisdictions since the 2021 research paper was published.

The IADI Research Unit distributed the survey to more than forty IADI members in June 2023. Nineteen IADI members responded, with good representation from both an IADI regional committee and a mandate perspective.

Finally, each member of the Working Group contributed a case study. The PIDM-Malaysia's case study considers the process involved in creating a comprehensive testing program. FDIC-USA, DNB-NL and NDIC-Nigeria provide case studies illustrating how testing informs real events and their interconnectedness. As a result of their mature testing program, BFG-Poland provides a case study of their experience involving the Ministry of Finance. Lastly, the CDIC case study describes its experiences in conducting an exercise using bail-in powers on a domestic systemically important bank (D-SIB).

[8] The literature review includes quantitative sources that IADI gathered in its ongoing work as the main research source for deposit insurance. Through these activities, such as the IADI Annual Survey and the Thematic Review on External Relations, the Working Group received aggregate data to develop a broader perspective of crisis preparedness and management in the deposit insurance sector. This differs from existing papers which typically focus on one or a small number of jurisdictions.

[9] For a more comprehensive review of the March 2023 events, the Working Group recommends reviewing the IADI 2023 Lessons Learned report.

Figure 1 – Regional committee of respondents

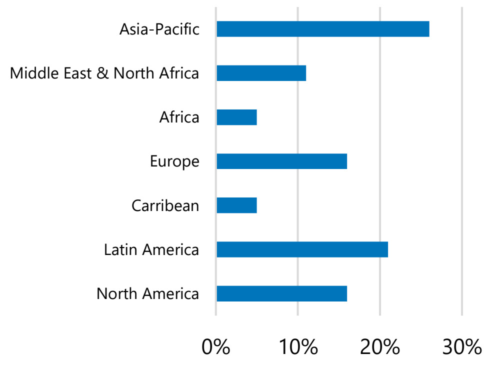
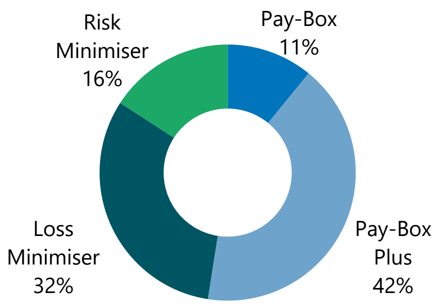


Figure 2 – Mandate of Respondents



Source: IADI Survey June 2023

3. Literature review

Main Findings

- The literature findings are consistent with the 2021 RCNA paper's findings and other IADI-published aggregate statistics, such as the Annual Survey, Thematic Review, as well as other external papers.
- Deposit insurers are increasing their crisis preparedness and management capabilities as part of their crisis preparedness efforts. It is expected that compliance with the Core Principle on crisis management will increase as their programs develop and their capacity increases.
- As testing programs mature, more deposit insurers are organising cross-border simulations, aided by international organisations.

The literature review builds on the 2021 RCNA paper and explores developments in crisis preparedness and management in jurisdictions beyond the North American region, including Africa, Asia, and Europe. It also evaluates progress and developments since its publication in 2021.

This section begins by defining key terms and concepts for consistency, as well as an overview of the 2023 IADI Thematic Review on External Relations and concludes with recent examples of cross-border exercises.

3.1. Terminology

For consistency purposes, most of the language and concepts used here are from the 2021 RCNA paper. The 2021 RCNA paper, "Contingency Plan Testing in North America"[10], provides an overview of the various exercises (tabletops, simulations, walkthroughs, and fire drills) used by deposit insurers to evaluate and enhance their crisis preparedness framework. It assesses the advantages and limitations of each exercise type and how they can form a comprehensive testing program. While this paper adopts the new terminology of "crisis preparedness and management" in lieu of "contingency planning", the scope remains the same with no further inclusions or exclusions. Both the 2021 RCNA paper and the World Bank agree that stress testing functions are not considered in scope.[11]

While the World Bank recommends organisations limit the use of the term "testing" for exercises[12], this paper retains this term for consistency with the 2021 RCNA paper, and for simplicity. However, it agrees with the World Bank's underlying message that the emphasis should be on the overall program, and that benefits rest in the ability to "[repeat] to get better".[13] Benefits occur through the organisational phase and are part of a deposit insurer's overall preparedness efforts that are improved over multiple exercises. Accordingly, deposit insurers should focus on the larger goal of preparedness and not fixate on individual exercises or specific individual performance results. The reporting and feedback phase is essential, as it minimises the focus on the individual and strengthens the crisis preparedness and management framework. Through an appropriate organisation-wide approach, the concept of "testing" is relevant, limits focus on individual performance, and ultimately benefits the deposit insurer.

As part of crisis preparedness and management, deposit insurers employ a variety of tools, concepts and programs to improve their capacity and capabilities, including most notably crisis preparedness and management testing. Crisis preparedness and management testing is covered under the IADI Core Principles for Effective Deposit Insurance Systems. As of 2024, there are five underlying Essential Criteria (EC), three of which are directly related to crisis preparedness and management planning (ECs 1, 2 and 4). In addition to the deposit insurer's own crisis preparedness and management planning capabilities, the Core Principle also emphasises the involvement of and integration with other FSN partners.

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[10] IADI (2021), pp.21-22

[11] Lee, Yejin Carol. The World Bank Crisis Simulation Exercise Handbook (English), p.7.

[12] Instead, the paper recommends concepts such as "practice" and "games" frame the activities for staff in a healthier way that focuses on the overall outcome as opposed to individual performance. As a result, there is a more natural environment with better participant engagement which contributes to more helpful insights and recommendations for deposit insurers.

[13] Lee, Yejin Carol (2023), *p.12-13*.

3.2. IADI Thematic Review of Core Principles (2023)

The IADI Thematic Review of Core Principles is an extensive analysis and self-assessment of IADI Members' compliance. The second thematic review (External Relations)[14] questionnaire was completed by 66 members from a number of regions, making it the most comprehensive assessment of crisis preparedness and management testing in the deposit insurance sector.

IADI's 2023 Thematic Review on Core Principle 6 revealed that, within the international community, testing has been adopted by a majority of respondents. However, many jurisdictions were reported as non-compliant or materially non-compliant, specifically with the underlying ECs.

Most respondents report that they are compliant with CP6 EC1[15], with 70% of respondents having their own and crisis preparedness and management plan.[16] The 30% who did not have plans in place primarily had pay-box and pay-box plus mandates. Respondents also struggle with CP6 EC2[17] as over half of respondents report a non-compliance rating.[18] Noncompliance continued through CP6 EC4[19], with most respondents (35) stating that they conduct simulation exercises related to systemic crisis, but only 14 do so regularly.[20] In total, 31 respondents stated that they had not completed simulation exercises within their jurisdiction.[21]

In short, the results of IADI's Thematic Review demonstrate that there are significant opportunities for improvement, and additional research, guidance and technical support would benefit IADI members. Section 4.1 outlines deposit insurers' considerations when developing a testing program, while the PIDM-Malaysia case study demonstrates how an evolutionary approach can expand the roles and resources of a program. Through this process, deposit insurers can build a structured and cohesive multi-year testing program that will result in a robust and, more importantly, realistic testing program.

3.3. Recent Exercises

The IADI 2023 paper on reimbursement found that jurisdictions that conducted simulations were able to more quickly and effectively restore access to funds for insured depositors[22], although it did acknowledge that it had not analysed this relationship for causality.

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[14] IADI (2023b), Thematic Review No.2. External Relations. International Association of Deposit Insurers, September 2023.

[15] The deposit insurer has its own effective contingency planning and crisis management policies and procedures in place, to ensure that it can effectively respond to the risk of and actual bank failures and other events

[16] IADI (2023b), p.6.

[17] The deposit insurer develops and regularly tests its own contingency planning and crisis management plans

[18] IADI (2023b), p.20.

[19] The deposit insurer participates in regular contingency planning and simulation exercises related to system-wide crisis preparedness and management involving all safety-net participants.

[20] IADI (2023b), p.23.

[21] IADI (2023b), p.23.

[22] IADI (2023a), Reimbursing Depositors now and in the Future, *IADI Research Paper*, p. 22.

Nevertheless, simulation exercises are vital preparedness tools.[23] The reporting and feedback phase enables the identification and implementation of corrective actions that improve a deposit insurer's preparedness. By testing regularly, a deposit insurer develops a greater understanding of potential challenges and can better train staff for failure scenarios.

As adoption increases among deposit insurers and programs mature, exercise scope is increasing to include more variables. One of the more promising areas is the increased frequency of cross-border simulations in different geographical regions, with technical assistance provided by international organisations. The Financial Stability Institute (FSI) has to date organised four cross-border exercises in Latin America, Asia, and sub-Saharan Africa.[24] The first and most recent occurred in South America in 2021 and 2024, and the second took place in Asia in 2022. The third and largest exercise took place in Africa in 2023. The World Bank has also contributed to the development of seven regional exercises, including three in Latin America.[25] These examples highlight the pivotal role played by international organisations in organising cross-border exercises, as they are able to identify key contacts and provide the necessary resources.

The 2021 exercise involving South American authorities was organised by the FSI with the support of Oliver Wyman. It took place in three phases covering recovery, resolution options and the implementation of resolution actions.[26] The simulation was based on a fictional systematically important bank headquartered in Brazil with systemic operations in several other host countries and critical shared services.[27]

The 2022 exercise involving the Asia-Pacific region tested cross-border cooperation in crisis response between home and host authorities and bank failure management. It involved a fictional scenario that modelled the increasing financial distress and eventual failure of a regionally systemic cross-border banking group. Compared to other exercises run by the FSI, it leveraged the supervisory college to a greater extent than exercises in other regions, and its results are expected to lead to the increased effectiveness of cross-border coordination.

In February 2023, the FSI conducted an exercise with select authorities from eight sub-Saharan African jurisdictions. Notably, some jurisdictions did not have an explicit deposit insurance scheme.

A fourth exercise spanning three days occurred in February 2024 involving seven Latin American jurisdictions.[28]

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[23] IADI (2023a)

[24] FSI, (2024), "FSI In Review 2023", https://www.bis.org/fsi/fsi2023review.pdf

[25] Lee, Yejin Carol. The World Bank Crisis Simulation Exercise Handbook (English), p. 9.

[26] FSI, 2021.

[27] IADI Members FGC-Brazil, COPAB-Uruguay, FOGAFIN-Colombia were among the participants. While FGC-Brazil has a pay-box plus mandate, both FOGAFIN-Colombia and COPAB-Uruguay have loss minimiser mandates. Supervisory authorities and central banks were also involved.

[28] FSI, (2024a), Cross-border crisis simulation in Latin America, p.3.

The exercise focused on resolving a systemic institution, while also "[emphasizing]…the cross-border dimension".[29] However, cross-border communication "mainly consisted of exchanging information" as opposed to developing a solution.[30] A possible explanation for this may be the absence of explicit direction for information-sharing with cross-border regulators during a crisis.[31]

Several common themes have been observed throughout these exercises. Cross-border communication did occur via formal channels led by the host jurisdiction. The FSI noted that, in many cases, communications were reactive and "joint decision-making and collaboration were limited" and participants focused on domestic solutions.[32] Both the first Latin American and African exercises highlight the complexities of communication during a crisis and the importance of "[focusing] on the practical dimensions of a resolution"[33]. By developing playbooks and tools ex-ante, this can be tested prior to a crisis to improve responses during an actual event.

Likewise, it noted that domestic authorities not included in the exercise did not receive comprehensive engagement in decision-making, which emphasises the importance of designing realistic scenarios in which proper consultation must occur.[34]

Some deposit insurers have taken the initiative to organise their own cross-border simulations. In December 2021, the Albanian Deposit Insurance Agency hosted a simulation to identify issues when reimbursing depositors by an agent bank. In addition to the Bank of Albania, participants included the Kosovo Deposit Insurance Fund and two member institutions as agent banks. The Albanian Deposit Insurance Agency considered the exercise a success, as it achieved the clearly defined objectives of "increasing the level of awareness and professional capacities compared to the previously performed exercises".[35]

Crisis preparedness and management testing is a growing area with increased adoption among deposit insurers. As programs mature, compliance with the relevant Core Principle is expected to increase. Cross-border exercises have increased through the assistance of third parties. Lessons learned, while unique to each exercise, remain consistent with best practices highlighted in literature. Future literature could review how exercises are evaluated, the development of reporting metrics, and the measurement of their success.

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29 FSI (2024a), p.4.

30 FSI (2024a), p.4

31 FSI (2024a), p.6.

32 FSI (2023), Cross-border crisis simulation in sub-Saharan Africa, p.3.

33 FSI (2023), p.16.

34 FSI (2023), p.5.

35 Albanian Deposit Insurance Fund (2022), Annual Report 2021, p.51.

4. Analysis

This segment consists of three sections, which study IADI members' experiences in developing their testing programs, explore the impact of testing on real crisis events, and capture changes and progress made by the RCNA members since the 2021 research paper. Each section considers the survey information collected from seven IADI Regional Committees (19 responses)[36], and is complemented by corresponding case studies developed by the working group members.

4.1. Establishing a Testing Program

Main Findings

- For most surveyed jurisdictions, the initial focus of crisis preparedness and management testing programs was on ensuring business continuity and validating their capacity to manage a payout and liquidation.
- As testing programs have evolved, their scope has expanded to cover recovery, resolution mechanisms and resilience to critical events.
- Testing efforts have generally been self-motivated and received strong top-level support.
- In recent years, exercises have been more frequently extended to include other safety-net players, foreign authorities, and external stakeholders, with the intent of enhancing cooperation and coordination.
- Common testing challenges include limited resources and competing demands, testing fatigue and a lack of objective success metrics.

The history of crisis preparedness and management dates back more than two decades, although most surveyed jurisdictions began investing in strengthening their toolkit to manage bank failures and running testing programs only after the 2007-08 Global Financial Crisis. The foundational events triggering responders to initiate testing were recent bank failures, legislative changes (e.g., Directive 2014/49/EU on deposit guarantee schemes (DGSD)[37]), resolution toolkit enhancements, resolution authority designation, international best practices, and concerns about the current environment (e.g., COVID-19 pandemic). For the most part, jurisdictions were self-motivated and received strong top-level support to perform crisis preparedness and management testing.

In the sample, 84% of jurisdictions have tested crisis preparedness and management plans in the past. Organisations who responded "never" indicated that they are in the process of

[36] The Working Group received 21 responses in total, of which two were omitted as they had not provided sufficient information. As such, the analysis is conducted on the 19 completed responses.

[37] Directive 2014/49/EU on deposit guarantee schemes1 (DGSD) introduced a number of innovations to improve the resilience of deposit guarantee schemes (DGSs) in Europe, including the requirement for DGSs to perform stress tests of their systems every three years, with the first test to occur by 3 July 2017.

developing crisis preparedness and management plans. A lack of resources was often cited as the primary reason for the delay in implementing a testing program.

Figure 3 – First time testing

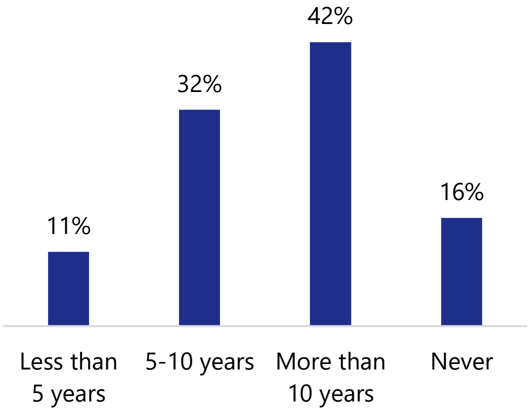
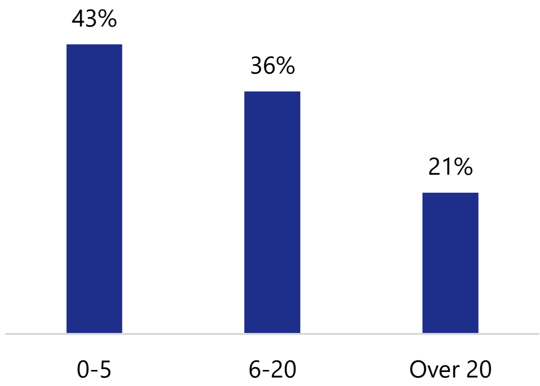


Figure 4 – number of exercises conducted



Source: IADI Survey June 2023

Initially, testing efforts were mostly ad hoc and internally focused, aimed at evaluating deposit insurers' policies and procedures. As the programs have matured, jurisdictions have expanded their testing objectives and refined their processes for setting testing priorities. These objectives include:

- Evaluating the capacity to pay out insured deposits (including data collection)
- Testing recovery and resolution mechanisms to ensure operational readiness
- Clarifying the protocols governing the management of a crisis
- Evaluating inter-institutional coordination in addressing stress events in the financial sector
- Assessing the resilience of deposit insurers
- Providing training for staff to enhance confidence of employees in their capabilities during a payout/resolution event

Testing programs were generally developed internally, although members often sought guidance and assistance from organisations such as the World Bank, the Financial Stability Board (FSB), the European Banking Authority (EBA), the European Forum of Deposit Insurers (EFDI) and other deposit insurers with established testing programs. On occasion, specialised organisations such as the Toronto Centre and other external consultants were also enlisted to provide support to the jurisdictions.

As testing programs have evolved, organisations have adopted approaches that reflect their needs and available resources. While deposit insurers agree that testing is important, locating the responsibility within the deposit insurer's organisational structure has differed based on circumstances specific to each organisation.[38] No single preferred method (centralised, distributed, or hybrid) has emerged.

About one-third of respondents have established a dedicated team or business unit to take a more centralised approach to crisis preparedness and management testing. For others, testing activities often fell under the responsibility of the Risk Assessment, Resolution or Reimbursement Departments or were created jointly by relevant business units. In many cases, the dedicated unit or staff responsible for testing activities will have direct responsibilities during a real crisis. For example, PIDM's testing department[39], which normally organises inter-agency simulations, would be converted into a secretariat team when handling crises. Additional information on PIDM's internal structure is provided in the case study below.

Most respondents with a loss minimiser or risk minimiser mandate, or from either Europe or Asia-Pacific regional committees, have implemented a systematic approach to testing and have developed formal annual or multi-year test plans, with exercise frequency ranging from quarterly to every two years. Within the overall sample, crisis preparedness and management testing efforts typically take the form of tabletops, simulations, or workshops. Testing frequency often depends on availability of financial and human resources, the desired scope of the exercises (e.g., one full scale simulation per year versus quarterly tabletops) and the maturity of processes to be tested.

Figure 5 – Existence of formal test plan

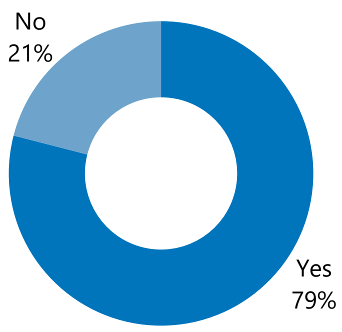
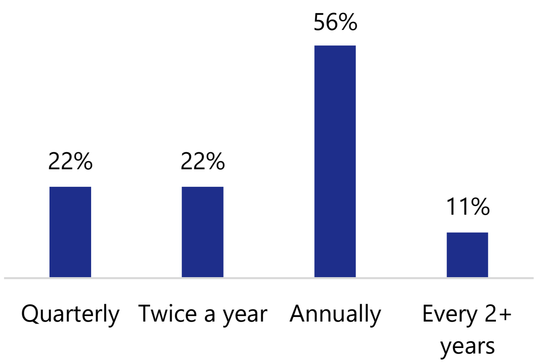


Figure 6 – Testing Frequency



Source: IADI Survey June 2023

** Note: respondents without formal test plans have pay-box or pay-box plus mandates*

[38] IADI, "Contingency Plan Testing in North America" (2021), pp.17-18.

[39] For PIDM, the testing department refers to Crisis Management Department.

Testing plans often form part of corporate initiatives and are aligned to corporate priorities approved by their respective Boards. For more than 64% of respondents, testing priorities are informed by their organisation's Enterprise Risk Management (ERM) function. These priorities are typically based on evolution of current and emerging risks, organisational priorities and initiatives, and the maturity level of crisis management plans and processes.

Most North American and European organisations in the sample test multiple key areas at regular intervals, as recommended by the relevant IADI Core Principle and directed by the European Banking Authority guidelines on stress testing for deposit guarantee schemes.[40] These core areas consist of repayment functions (including funding capabilities, payout systems, data quality, and call center operations) and recovery and resolution processes (including financing, marketing of failed institutions, assets analysis and management, communications, and coordination among safety-net members). Survey respondents have also cited cybersecurity, procurement/third party, and business continuity as areas of focus over the last two years.

Since effective coordination among FSN authorities is crucial to successful resolution processes and sound financial systems, many respondents have started exploring opportunities to collaborate on testing with domestic and foreign authorities. In the sample, nine (47%) jurisdictions have conducted exercises involving their safety-net partners, and six (32%) have extended the participation to domestic stakeholders outside of their FSN. An example of testing with the Ministry of Finance can be found in the BFG-Poland's case study in section 4.2.1. CDIC-Canada's case study in section 4.3.4 demonstrates the importance of involving non-FSN partners when testing bail-in powers for a domestic systemically important bank.

While test participants were mostly at the domestic level, seven (37%) respondents participated in cross-border simulations of systemic banking crisis within the last five years[41]. Exercises involving external stakeholders, especially other FSN authorities, will likely become increasingly frequent as more attention is placed on the need to enhance coordination ex-ante, particularly when managing systemic risk. Such exercises should not be singular events but part of ongoing efforts among authorities and the industry. The IADI lessons learned paper identified financial safety-net coordination and cross-border cooperation as areas for further exploration. The future review will encompass pre-conditions for effective cooperation and coordination in "business as usual" scenarios as well as in crisis, including testing crisis management preparedness and conducting joint simulation exercises[42].

When implementing testing programs, the key challenges confronted by respondents were related to balancing the time allocated to exercises vis-à-vis competing demands from other priorities, and the availability of resources such as internal and external subject matter experts and decision makers. This observation underscores the importance of advance preparation and

[40] European Banking Authority (2023), Final Report on Revised Guidelines on DGS stress tests.

[41] Observations from the literature review of regional examples of exercises show increasing attention on crisis preparedness and management testing across borders. The Financial Stability Institute has been instrumental in organising these exercises in Latin America, Asia, and sub-Saharan Africa.

[42] IADI (2023), p.51.

buy-in from senior management and all relevant business units. Forty-four percent of respondents also identified simulation fatigue as a potential source of concern, as testing too frequently or at inopportune times can lower future buy-in and engagement levels. It is therefore important for the content and scope of test plans to be tailored to an organisation's current capacity, resources, and needs.

The survey also explored the reporting and feedback phase to understand how organisations measure and evaluate the effectiveness of their testing programs, a topic that has not yet been explored. Responses showed that assessing the return on investment of testing is challenging for most. While respondents do not have quantitative metrics to evaluate their program, some reported using post-mortem discussions and feedback, along with improvements in policies and procedures, as evidence of success. The FDIC and CDIC have traditionally evaluated exercises based on whether the key objectives identified prior to the exercise were achieved. This suggests that deposit insurers should consider a combination of quantitative metrics (such as participation rate, number of action items, etc.) and qualitative data (feedback, post-exercise survey, etc.) to identify and improve issues in the testing process.

The level of commitment of the deposit insurer in testing exercises depends on their specific mandate, and those with loss and risk minimiser mandates often have a more mature testing program in place. However, in view of the evolving economic environment, financial regulations, and resolution tools, crisis simulation exercises have increasingly become a topic of interest among deposit insurers and FSNs in many regions across the world. The PIDM case study demonstrates how the organisation successfully implemented a progressive testing program following its organisational maturity.

PIDM Case Study

Evolutionary and Phased Approach

PIDM has been building its crisis response capacity since its establishment in 2005. The capacity building has evolved from running yearly internal simulation exercises since 2010 until recently. From 2020 onwards, PIDM's strategy has been to achieve "collaborative readiness". This saw testing programs shift towards the involvement of external stakeholders from financial safety net (FSN) authorities. As PIDM does not yet have experience handling a real failure, PIDM ensured that the design of the testing programs and scenarios was robust and as realistic as possible. PIDM leverages lessons learnt from failures in other jurisdictions and discussions with other authorities who have handled failures. It also ensured certain specificities of the Malaysian banking systems are also considered in the design, to ensure PIDM remains in a constant state of preparedness and continues to build confidence to face potential crisis scenarios.

To complement the evolutionary approach in advancing PIDM's crisis response capabilities, PIDM expanded resources to oversee crisis management related matters. A dedicated Simulations Unit established in 2021 was transformed into a new Crisis Management Department (CMD) in 2022 with additional resources and an expanded role. The CMD now supports PIDM's crisis management team in preparing for and responding to potential crisis scenarios.

Ensuring effective governance and implementation

The crisis preparedness and management testing program, including the budget, is overseen by the Executive Committee and approved yearly by the Board of Directors as part of PIDM's Corporate Plan. Components of the simulations program are also influenced by the enterprise risks within PIDM. Hence, crisis preparedness and management testing strategies are embedded within PIDM's strategic planning, financial, and risk management processes, in turn leading to clear direction and buy-in from executives as well as working teams across the organisation. Crucially, the overall alignment with PIDM's corporate plans also ensures that testing exercises are well-paced and sustainable, thereby minimising "simulations fatigue".

While CMD leads resolution-related and inter-agency simulation efforts, other specific areas of testing are placed under functional accountabilities such as cybersecurity drills under the Information and Security Management Department or payout testing under the Reimbursement, Run-off and Liquidation Department. In those cases, CMD participates as part of the organising team or as an observer. Where feasible, staff from other FSN players would form part of the organising team for the inter-agency simulation exercises. Exercises which are supported by service providers also serve to enhance their readiness to support PIDM during a resolution event.

Ensuring a robust and realistic testing program

In designing and scoping the testing program, PIDM balances the overall objectives with specific areas of focus, depending on participating players. Some key factors PIDM considers are:

- testing coordination protocols vs. technical capabilities
- testing processes vs decision making

- testing internal players (Management/Board level) vs. external players (inter-agency players, industry, service providers)

Testing of internal coordination protocols and processes may include testing of established authority matrix or crisis checklists, while inter-agency coordination may include testing the protocols/governance stipulated in the inter-agency binder. Testing of technical capabilities or decision making would involve testing its internal decision-making framework, while inter-agency decision making could be tested based on Crisis Management Group agreements and resolution plans.

Ultimately, the design and scope chosen to be tested will be based on the priorities, emerging risks, issues, and strategic direction during that period.

Challenges encountered

Effective co-ordination of timing and organisation of resources, vis-à-vis competing demands from other corporate priorities

When implementing testing programs, a practical challenge has been to ensure more effective co-ordination of timing and organisation of resources, vis-à-vis competing demands from other corporate priorities. During the initial year PIDM set up a dedicated team, its Simulations Unit had only two staff.43 Large exercises such as inter-agency simulations required the broad mobilisation of a cross-functional team, among others from PIDM's intervention and resolution department, as well as members from the project management office. Smaller in-house exercises were fully run by the unit with support from an external consultant.

In addition, challenges surrounding human resources encompassed securing the availability of senior officials and decision makers, as well as technical experts. For instance, the large-scale, inter-agency simulation exercise involved a dry run which comprised a different set of participants involved in the actual event. PIDM was confronted with the challenge of identifying appropriate participants with adequate seniority and expertise to achieve the strategic aims of the testing exercise.

Success measurement of testing programs

Another key challenge was measuring the success of the testing programs. For this, PIDM considers several qualitative factors. First is the conduct of simulations including the responses by participants to various scenarios, the robustness and transparency of discussions, and the ability to deploy information and materials (e.g., crisis communication templates). In the case of inter-agency simulations, candid sharing among personnel from respective agencies helped to foster stronger relationships. Besides that, appreciation of differing mandates, areas for collaboration, and gaps to close within the respective agencies and collectively (e.g., inter-agency crisis binder, joint coordination and working arrangements) is also an accomplishment. Another measure of success is the progressive improvement of relevant policies and procedures. As a result of identifying gaps and lessons learned from several exercises, PIDM's practices for crisis management planning and execution have become more robust over time. Lastly, continuous

[43] In 2021, there were 176 total employees in PIDM. The gain in momentum for crisis preparedness and management testing saw the CMD team grow to 5 personnel in 2022

simulation and testing initiatives have served as an effective approach to mitigate enterprise risks confronting PIDM.

Lessons learnt from the experience of establishing testing programs

There are a few lessons that can be drawn from PIDM's journey of scaling up its work on simulations in the past few years. First is the importance of setting up an internal dedicated team with adequate staff and a well-defined scope to anchor the testing program. Concomitantly, there needs to be clear demarcation of testing areas performed by the centralised function, as well as by other departments, depending on the topic and requirements (e.g., seniority of decision makers and participants, internal or external orientation with financial safety net or industry players).

Second is ensuring strong linkages between the objectives of the testing program and the Enterprise Risk Management (ERM) function. For instance, yearly themes or priorities for simulation exercises could be tied to emerging risks. Active participation of the ERM team during the design stage also facilitates a more effective review of how well PIDM's risks were mitigated by the testing exercise.

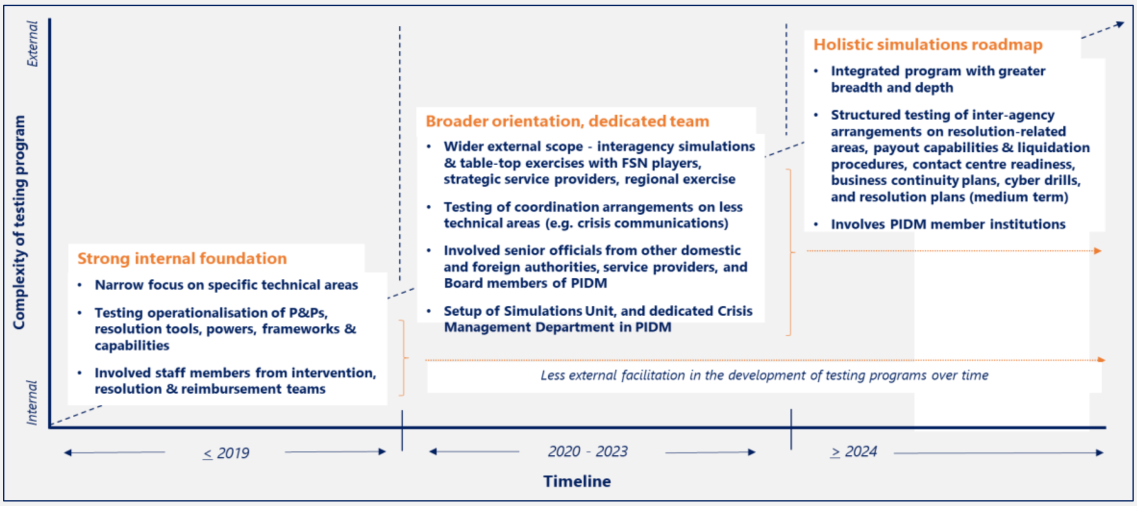
Third is the extensive preparations for inter-agency simulations via regular engagements and relationship building with other FSN authorities. An essential aspect of achieving common goals of joint testing exercises is to secure early buy-in and participation of key stakeholders. Engagements could include knowledge-sharing sessions prior to an exercise, to align understanding and expectations of the mandates, powers, internal governance, and decision-making arrangements of respective agencies. Another benefit of closer engagements over time is to progressively institutionalise the joint simulation exercises which form part of the medium-term strategic plans of the various FSN authorities. It is also important to ensure sustained and consistent engagements to address the practical issue of periodic changes in key personnel of other FSN counterparts.

A fourth and related point is setting up a strong inter-agency team to ensure key outcomes of the joint simulation exercises are effectively achieved. The coordinating teams could cover strategic and operational aspects to ensure clear alignment of objectives, design, and scope of the exercise among the agencies. At the working level, teams could work collaboratively to frame and create the narrative for the exercise, as well as develop concise yet relevant materials that account for contemporary trends in the domestic economic, financial and regulatory landscape.

Finally, the design of a robust post-simulation process. This includes a post-mortem exercise to identify and prioritise gaps to be closed, and subsequent reviews and reporting to management. In this regard, identifying accountabilities for follow-up actions could prove to be challenging for areas that are cross-functional, operational, or longer term in nature, as well as for items that are dependent on the actions of external parties.

Sustaining the crisis preparedness and management testing program into the future

Illustration 1: Progressive heightening of PIDM's readiness from internal towards external dynamics



As illustrated above, crisis preparedness and management testing in PIDM has evolved over several phases. Going forward, PIDM will adopt a more holistic and integrated approach for its testing program. A strategic roadmap has been drawn up which covers, among others, bilateral table-top and inter-agency simulation exercises on resolution-related areas, testing of payout capabilities, liquidation procedures, contact centre readiness, business continuity plans, cyber drills, and testing of resolution plans with PIDM's MIs over the medium term. In addition, PIDM will continue to closely track global developments, standards and practices to improve crisis preparedness and management testing, including lessons learnt from the US and Switzerland banking turmoil in 2023.

In summary, PIDM's efforts are expected to culminate in higher levels of resolution preparedness and effective mitigation of enterprise risks, in line with PIDM's strategic aim to achieve collaborative readiness for resolution among key stakeholders.

4.2. Lessons Learned from Exercises and Connection to Real Cases

Crisis preparedness and management activities provide opportunities for deposit insurers and relevant stakeholders to increase preparedness through practical experience ahead of an actual crisis. This section explores how deposit insurers have been able to apply their testing experiences and lessons learned to actual failures, and vice versa. The discussion is based on survey data and case studies developed by BFG-Poland, FDIC-USA, DNB-NL and NDIC-Nigeria.

Main Findings

- Jurisdictions with recent experience in handling a failure observed that they were more adept at reacting to a crisis after having gone through testing exercises. Respondents indicated that testing can:
- enhance operational capabilities by clarifying roles and responsibilities, identifying process and system improvement opportunities, improving governance structure in managing a crisis, etc.
- provide staff the experience needed to successfully respond to a crisis and build surge capacity
- promote understanding of the deposit insurer's mandate and tools among external stakeholders, leading to stronger coordination in an actual event
- Real failure and near-failure events have been important inputs in the development of new scenarios and prioritisation of future testing topics. They also provide insights to enhance existing processes.
- Real-life experiences have stressed the need for broader involvement and engagement with relevant external stakeholders.
- Testing exercises have limitations since each failure is unique. Experiences highlight the importance of agility and adaptability and the value of maintaining regular testing using diverse scenarios.

4.2.1. Lessons Learned from exercises

For survey respondents, the lessons from exercises generally include: the adequacy of available powers and tools available; the importance of effective communication, coordination and decision making; and the appropriateness of existing processes and technological capabilities. These findings often help uncover vulnerabilities and identify future challenges that will drive continuous improvement. About 70% of respondents believe that testing exercises have led to meaningful enhancements to their organisation's crisis preparedness, including:

- Understanding the practical considerations and conditions for activating resolution powers/tools
- Identification of missing powers, legal barriers and constraints that may arise in a crisis
- Identification of gaps in information exchange between authorities, leading to updated MoUs
- Establishment of agreements and procedures to access public funds through borrowing
- Establishment of stronger business-as-usual relationships and open dialogues with other authorities, so that communication and coordination can work more smoothly in a crisis.

- Improved coordination of actions between departments within the organisation
- Refinement of decision-making processes and procedures in a crisis (playbooks)
- Development of required documentation and templates
- Modernisation of systems and IT tools
- Increased staff capability and confidence through training

BFG-Poland's case study provided a notable example of how testing can be used to validate the organisation's processes and procedures, identify potential challenges and required actions to boost cooperation with other authorities. The exercise tested BFG's accessing alternative funding arrangement which led to the establishment of a framework loan agreement with the Treasury that will allow for more swift decision-making and coordination between authorities.

BFG Case Study

Payout simulation based on the failure a large domestic bank

In November 2021, the Bank Guarantee Fund (BFG) tested a payout scenario based on the hypothetical failure of three entities, including a large domestic commercial bank, for which the guaranteed deposits exceeded BFG's total available funds. The added complexity aimed to assess and measure BFG's financial capacity and its ability to obtain public funding from the state to cover the shortfall in a timely manner. At the operational level, the exercise was also aimed at validating the procedure for draft loan application.

The BFG Act requires the organisation to test its ability and effectiveness to repay guaranteed funds at least once every three years, or at the request of the Minister competent for financial institutions.

Planning, design and execution

In addition to BFG's employees and the test banks, representatives of the Ministry of Finance (MoF) were involved in the exercise from design to participation. Prior to the "live" payout exercise, the two agencies worked together in drafting the relevant documentation and templates for the loan application.

BFG's reimbursement department led the simulation exercise over seven working days (real time). During the exercise, a draft loan application was prepared by BFG and sent to the MoF. MoF concluded that the scope of information (amount, reimbursement date, interest rate, collateral, principles of loan repayment, justification of the application, etc.) provided was sufficient and granted approval after careful evaluation.

In addition, as part of the exercises, selected procedures related to the reimbursement were tested, including:

- internal procedures regarding the reimbursement process
- SCV files of the tested entities
- agreements on the reimbursement of guaranteed funds
- outsourcing of the processing of personal data concluded with agent banks
- current data on BFG's available funding sources.

The simulation confirmed that BFG can quickly access and secure external funding within the statutory deadline. All the other aspects of the payout process were also successfully executed.

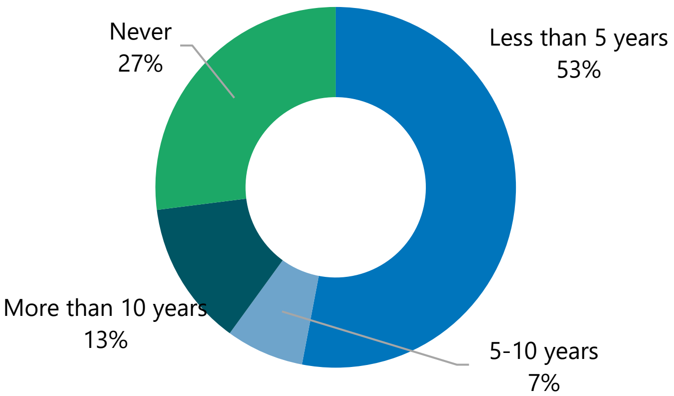
Challenges and takeaways

BFG did not encounter significant obstacles in designing and running the exercise. The planning phase was more extensive due to the expanded scope and the involvement of external stakeholders. Key takeaways identified include the lack of capacity for BFG's Helpline to handle the large volume of calls following the failure of a large bank, and for the complaint department to handle a large number of customer requests following the payout. Solutions have since been developed to outsource these services to an external company, as well as to record voice messages with essential information on the reimbursement process. A noteworthy achievement of this exercise was the establishment of a framework agreement between BFG and the state treasury to grant loans to BFG to fulfil its mandate.

4.2.2. Applying lessons learned to real life events

About 60% of jurisdictions in the survey sample experienced a bank failure within the past 10 years. When asked about their experience, these organisations[44] observed that they were more adept at responding to a crisis after having gone through testing exercises.

Figure 7 – Years since last failure



Source: IADI Survey June 2023

[44] Eight respondents (out of 14 that responded to the question) experienced a failure within the past 10 years. The time lapse between the most recent failure and preceding testing exercise was within one year for most.

Testing can improve operational capabilities to handle a failure

The exercises allowed participants to walk through the processes and procedures that would take place during a failure event. Thus, staff showed more awareness of their roles and responsibilities and those of their business areas during the live events. Often, the templates and frameworks developed and used during testing exercises will serve as a starting point for responding to real events, leading to more timely actions. In FDIC's experience in dealing with the 2023 failures, the exercises enhanced the ability to rapidly make decisions and execute resolution tools such as the replacement of failed bank management, the establishment of a bridge bank, funding liquidity, and maintaining operational continuity, including communications and human resources transitions.

Testing also improved deposit insurers' operational capabilities to handle a real crisis. The exercises provide an avenue for respondents to identify gaps and opportunities that would not have been uncovered otherwise. Through a 2019 simulation exercise, IPAB-Mexico detected the need to implement a reimbursement process through an agent bank due to the complexity of reimbursing a large number of depositors across the country. With the agent bank, IPAB developed several new payout processes (cheques, payment orders, wire transfers, and cardless withdrawals at automated teller machines) used for the two banks that failed in 2020 and 2021. Through testing exercises, IPAB also identified an opportunity to develop an electronic platform that can manage the workflow of public communication activities. The new management system reduced response times from almost one month to less than one weekend and improved the quality of public awareness products during the 2021 failure.

For the DNB case study, the improvements made in both the governance structure and playbooks following the simulation exercise led to a better and more fluid set-up of the crisis organisation. When the crisis structure was activated in 2022, appropriate tools (such as a SMS-notification) and facilities (set-up possibilities for a call center, workspaces, and a payment system) were in place and functioned smoothly. Teams were also able to cooperate well across divisions as there was a common goal to pay out the customers of the failed bank as quickly and accurately as possible. After the live event, DNB recognised the importance of involving staff outside of deposit guarantee scheme (DGS) in exercises to have more common understanding of roles and responsibilities and support needed during a DGS-payout.

DNB Case Study

Failure of Amsterdam Trade Bank (ATB)

ATB received a Dutch banking license in 1994. At the time of the bankruptcy, ATB had more than 23,000 active account holders with € 673 million in deposits covered by the Dutch Deposit Guarantee. Most of these account holders lived in the Netherlands, with a smaller proportion in Germany (more than 5,500). The bank ran into trouble after Russia's invasion of Ukraine. In response to this invasion, the EU, the UK and the US imposed sanctions on Russia and Russia-affiliated individuals and entities. The consequences of these sanctions hit ATB both directly and indirectly, causing serious disruption to its operations, resulting in it winding up its banking business. When a full wind-up proved impossible, ATB decided to file for bankruptcy on April 22, 2022.

De Nederlandsche Bank (DNB, DGS authority in the Netherlands) and the Deposit Guarantee Fund (DGF, a separate legal entity) compensated ATB account holders within three working days of the bankruptcy. This was within the statutory repayment period of 10 working days which applied in 2022. Within a month of the bankruptcy, 95% \ € 641 million) of the total guaranteed deposits had been paid out. More than 200 DNB employees were involved in performing the DGS-payout to ensure depositors would have access to their deposits. In September 2022, the DGS payout organisation45 was scaled down back to business as usual.

Testing contributed to crisis preparedness

Since 2016, DNB has been performing regular stress testing exercises for the DGS task, working with a structured Stress Test Program since 2017. In 2018, DNB carried out an end-to-end simulation for a bank failure and different phases of a DGS payout. In 2021, the year before the ATB failure, more extensive testing across the entire DGS process took place. DNB involved participants with the same or a similar role during a real-life payout (e.g., involvement of a communication advisor in relation to DGS Communication, MT-members in relation to DGS Governance, and IT in relation to SCV-capabilities).

Participants had the opportunity to practice their role, develop standardised templates and documentation, and provide input to further improve the payout process. These exercises confirmed DNB's ability to perform a DGS payout and meet the required ten working-day repayment period and the reduced seven-working-day repayment period (as of January 1, 2024).

[45] DNB has a dedicated DGS-team working on the necessary preparations for an adequate and timely DGS payout. This team is part of the Resolution division and consists of 12 employees. In case of a bank failure, the DGS-team initiates a payout organisation. This compasses the required governance structure (for steering and decision-making) and the DGS payout organisation. The DGS payout organisation consists of different workflows consisting of employees from different divisions within DNB, such as Communications, Data and IT, Internal Operations and Legal Affairs.

During the activation and execution of the DGS for ATB, the benefits of simulations, testing and resulting improvements to DGS capabilities became evident:

- DGS payout was activated quickly and functioned properly
- Funding was promptly available (within one working day)
- Teams performed their tasks efficiently and effectively (depositors could request compensation on the third working day) due to existing playbooks, general procedures and standardised products
- Key personnel were sufficiently equipped and familiar with their role and tasks
- The SCV-file (tested annually with banks) was transferred and uploaded efficiently to the DGS payout tool (developed and tested on an ongoing basis)

Some elements, such as bankruptcy drivers and particularities in the execution of the payout, were not predictable through testing. DNB was, however, able to quickly respond and develop ad-hoc solutions and adapt the tools, procedures, and documentation to the ATB case. During the ATB payout, DNB developed the following solutions to specific challenges:

- Development of an alternative online tool for the submission of forms by depositors living outside the Netherlands and holders of dormant accounts
- Special policies and procedures for the reimbursement of dormant accounts and deposits of deceased account holders

After the ATB payout, DNB identified several areas for improvement including:

- Changes to DGS-requirements for banks to clarify that dormant accounts should be included in the SCV-files (completed at the end 2022)
- Enhancement of the DGS payout portal to include login options other than the Dutch identity management platform (DigiD)
- Further automation of processes and systems for handling special and complex cases (a project launched in 2022)

The ATB payout case underscored the importance of testing and enhancing crisis readiness. DNB observed that elements that were previously simulated and tested ran more smoothly during the real-life event. This also enabled the crisis team to respond efficiently and effectively to unpredictable particularities that occurred during the payout event. Having an agile mindset when dealing with a crisis was also a key driver for the successful payout. DNB will continue to take a more flexible approach of continuously adapting its annual test plan to incorporate changes and improvements made to the payout process during the year.

In January 2024, DNB published a factsheet on the DGS payout for ATB.[46]

[46] Link to ATB factsheet: https://www.dnb.nl/media/yncprngo/dnb-factsheet-dgs-payout-atb-january-2024.pdf

Testing exercises can increase staff confidence and build surge capacity

A common takeaway from the reported real failures was the contribution of testing exercises to employee training. Currently, 53% of jurisdictions reported that testing exercises are formally embedded in training and onboarding of key staff and standby partners. For deposit insurers with extensive experience in managing bank failures, this opportunity is especially valuable for new employees to develop and refine necessary skills. Interdepartmental exercises can enhance coordination in a crisis and, at the same time, play a key role in building surge capacity as exercises can be used to cross-train staff in other functional areas and better manage succession planning. For jurisdictions lacking practical experience with bank failures, simulation training is often the only avenue for staff to practice for a failure scenario.

Periodic training exercises can then provide staff with the experience needed to successfully respond to a crisis. The FDIC case study below shows the importance of maintaining a regular but flexible training structure to ensure sustainability and avoid exercise fatigue**.** The FDIC regularly tests its crisis preparedness and management planning in a variety of ways to ensure that procedures and systems are effective. The means of testing includes both actual failed bank resolutions carried out regularly under the *Federal Deposit Insurance Act* (FDI Act), and other exercises to evaluate the effectiveness of existing procedures and systems.

FDIC Case Study

Failure of Heartland Tri-State Bank

On Friday, July 28, 2023, Heartland Tri-State Bank of Elkhart, Kansas (Heartland) was closed by the Kansas Office of the State Bank Commissioner, and the FDIC was subsequently named Receiver. The bank had approximately $139 million in assets and $130 million in deposits and operated four branches. To protect depositors, the FDIC entered into a whole bank purchase and assumption agreement with Dream First Bank, National Association, of Syracuse, Kansas, to assume all the deposits and substantially all the assets of Heartland Tri-State Bank.

The FDIC had an abbreviated timeframe to market the institution to potential bidders due to the speed of the failure. Since the bidders only had two days to conduct due diligence, the FDIC chose to offer the option of a shared-loss agreement on the commercial loans as part of the failing bank marketing strategy. This helped alleviate bidder concerns over the quality of the loan portfolio. Under this shared-loss agreement, the FDIC and the acquiring institution would share in the losses and potential recoveries on those loans. Keeping the assets under private sector management generally maximises recoveries. Most importantly, use of this resolution tool allowed the FDIC to quickly sell Heartland, thereby minimising disruptions to the bank's depositors and loan customers. Heartland's four branches reopened as branches of Dream First Bank on Monday, July 31, the next business day after the closing. Heartland depositors never lost access to their money and were able to write checks and use Automated Teller Machines (ATM) and debit cards without interruption through the closing weekend.

Simulation and Testing Programs

The marketing of a troubled institution has been thoroughly simulated and tested by FDIC's Division of Resolutions and Receiverships (DRR). DRR monitors, markets, and determines the least cost disposition of failing insured depository institutions. To prepare for these responsibilities, DRR carries out a robust training program[47], including on-the-job-training (OJT), just-in-time training (JIT), self-paced training, and simulations for its new and existing staff. Specifically, DRR has established a semi-annual closing simulation program in which staff can learn new or sharpen existing skills. This program also helps with succession planning in that staff can cross train in other areas. The simulation program is designed to be flexible, where staff are trained to perform a variety of closing roles through microsimulations. Upon completion of the microsimulations, the participants are then brought together to test their newly learned skills in a macrosimulation that replicates a bank closing. Incremental changes and adjustments are continuously made to the simulation program based on observations from recent failures and near failures.

In addition to the micro- and macro-simulations described above, DRR also tests readiness with more focused training scenarios at the functional area level. For example, in June 2022, experienced DRR staff led a training simulation over a five-week period using data, processes, and procedures from an actual bank that the FDIC was preparing to resolve. This training simulation was designed to replicate pre-closing resolution activities related to the marketing of a troubled institution and a significant portion of staff involved in the Heartland case participated in this training.

The simulation also assessed how various factors, such as a failing bank's asset and liability profile, liquidity position, and corporate structure, might affect DRR's resolution strategy and, ultimately, the successful conclusion of the marketing process. Many different scenarios were tested, changed, and then re-tested. The simulation confirmed that DRR's processes and procedures are sound, but staff identified key takeaways from the exercise to enhance future training. (e.g., expanding the number of bid evaluation scenarios and making the simulation environment as realistic as possible).

The simulation benefitted both experienced staff and new employees. New employees learned the requisite skills in a training environment and existing staff identified systems enhancements, improvements to bidder documentation, and updates to transaction documents, process checklists and bid evaluation models. The simulation and the actual resolution event showed that soft skills including teamwork, flexibility, and effective communication are essential to the resolution process. Effective communication is especially critical in collaborating with both internal and external stakeholders throughout the resolution process. Each failure has unique characteristics (size, geographic footprint, asset and liability profile, and corporate structure), which underscores the need for flexibility and critical thinking in choosing the most appropriate strategy that will result in the least costly resolution. While DRR can prepare for many real-world challenges through simulations and exercises, some complexities cannot be predicted, underscoring the need for flexibility and critical thinking when dealing with a crisis.

[47] DRR uses a variety of resolution tools to achieve a least costly transaction, including Whole Bank Purchase and Assumption (with or without shared loss), Basic Purchase & Assumption with optional loan pools, bridge bank, deposit insurance national bank, and payout. DRR's training covers the use of all resolution tools, including the need to select the most appropriate tool for a given failure given the unique characteristics of the troubled bank and the circumstances that led to its failure.

Simulation training plays a vital role in preparing DRR staff to perform their responsibilities in a real resolution event. By experiencing realistic challenges in a training environment, participants will gain an understanding that these are a routine part of bank failures and learn to anticipate and respond to the unusual circumstances. The primary challenge for DRR has been continuing a training culture through periods of numerous actual resolution events. Though the simulation program contains multiple learning pathways that vary in length and offering times, this flexibility has allowed DRR to continue providing training through periods of high work volume.

Testing exercises can promote stakeholders' awareness and coordination

In addition to providing training to staff, exercises can also enhance understanding of the deposit insurer's mandate and tools among external stakeholders, thereby promoting stronger coordination in an actual crisis event. Training exercises sensitise participants to the interdependencies among stakeholders and their contribution to financial stability. These exercises "[reinforce] confidence…to external stakeholders….in [the deposit insurer's ability to effectively respond in accordance with their mandate," strengthening the wider crisis preparedness framework.[48]

Following the large number of failures in 2023, NDIC-Nigeria allocated more resources and increased the number of proposed trainings and exercises under the NDIC's Academy Training Plan. In addition, NDIC resumed offering sensitisation seminars to external parties outside of the FSN (judges, law enforcement officers, etc.) to mitigate potential legal challenges in handling a failure. NDIC engages with the judicial officers as they often play a critical role in resolving disputes that arise from revocation of banking licenses, liquidation of failed banks and termination of liquidation activities. NDIC's case highlights that stakeholder awareness of deposit insurance can have a significant impact during a resolution, and that training exercises can play a significant role.

[48] IADI Lessons Learned, 2023, p.17

NDIC Case Study

2023 Microfinance bank failures

In May 2023 the Central Bank of Nigeria (CBN) revoked the licenses of 183 institutions comprising 179 Microfinance Banks (MFBs) and four Primary Mortgage Banks (PMBs). The main cause of the failures/revocation of licenses was the institutions' inability to comply with CBN's directive on enhanced recapitalisation requirements, in addition to failure to comply with the obligations imposed upon them by the CBN in accordance with the provisions of the *Banks and Other Financial Institutions Act* of 2020. The recapitalisation initiative was driven by the challenges confronting the subsector, including:

- Inadequate capital base
- Weak corporate governance
- Ineffective risk management practices
- Dearth of requisite capacity
- Mission drift.

The initial recapitalisation circular was issued by the CBN on October 22, 2018, requiring all existing MFBs to fully comply by April 1, 2020. Despite a subsequent series of extensions to provide ample time for compliance, the affected MFBs were unable to meet the minimum requirements. The impact of the failures was not significant and did not affect the stability of the subsector. The NDIC was able to achieve the timeliest payout in NDIC's history and reimbursement commenced within seven days of the license revocations. At the end of September 2023, there were still about 712 well capitalised MFBs in operation. The closing of the institutions was successful due to:

- Coordination between the safety-net participants: The close engagement between the CBN and NDIC allowed NDIC to effectively prepare for the closing exercise in advance.
- Proper Planning: NDIC was able to obtain from CBN the list of the MFBs and PMBs whose licenses were to be revoked in advance of the date of revocation. This allowed NDIC to mobilise adequate resources that ensured a successful closure and timely payout.
- Crisis readiness: All teams for the closing exercise were established in advance (although not communicated to the staff involved). Roles were properly assigned and documented, and communication channels for the timely escalation of issues and challenges were established well in advance. The roles of Liquidator In-charge, Deputy-Liquidator In-charge, and Assistant Liquidator In-charge--covering areas such as legal, claims, information technology, security and transport--were in place to ensure seamless closing exercise.

NDIC successfully managed the failures and overcame the following challenges:

- Resistance from the shareholders and creditors: Some of the shareholders and creditors challenged revocation of their banks' licenses in court. To address this issue, the Corporation had engaged judges through workshops and seminars to promote their understanding of the deposit insurance system, particularly its role in promoting financial system stability.
- Difficulty in accessing the database/server/banking application of some of the banks:
- Some bank databases were on the cloud and the licenses had either expired or payment of fees were in arrears. To address this challenge, the NDIC had to pay all outstanding license

fees to the relevant vendors to obtain access to the databases and other applicable applications.
- Lack of cooperation from staff of the defunct banks: NDIC requires the cooperation of key staff of the failed banks to successfully close the banks. NDIC had to retain some of the staff on their full salary to work with the NDIC's examiners to be able to obtain all relevant information required for proper closing of the banks.

Key Takeaways

NDIC, having reviewed the challenges encountered in the 2023 failures, is working to improve the speed of retrieval of depositors and accounts information to ensure faster payout in the future. The organisation also recognised the value of continuous training in resolution, allocating more resources and increasing the number of proposed trainings and exercises to the "Failure Resolution School" under the NDIC Academy Training Plan and Budget for 2024. In October 2023, NDIC resumed its annual "Sensitisation Seminar"[49] for judges, emphasising the challenges encountered with court rulings due to unclear understanding of the deposit insurance system.

4.2.3. Impacts of failures or near failures on testing programs

Lessons learned from real events can inform an organisation's crisis preparedness and management activities, especially its testing program, in many ways, from determining the focus, scope and participation of tests to scenario design and exercise delivery. For respondents, the lessons learned from real events were typically evaluated to identify areas for improvement and incorporated into future testing exercises. For the FDIC, a key takeaway from managing recent failures was the continued commitment to a comprehensive approach to testing. For example, although the structure of the Division of Resolutions and Receiverships training program is not expected to change over the next one to two years, ongoing refinement of content is expected, and will be informed by observations from failures and near failures.

The FDIC's extensive experience with resolving failed banks provides opportunities for frequent and holistic evaluations of all components and stages of its pre-testing exercises and resolution processes. The successful resolution of these failures, many of which occurred simultaneously and during periods of crisis, tested all components of the FDIC's contingency and crisis management plans.

For other survey respondents, real failure events led to the development of new testing scenarios and prioritisation of testing topics. Real-life experiences have stressed the need for broader involvement across organisations, from senior management to frontline staff to enhance understanding of the responsibilities of each department within and outside the organisations. Survey respondents also highlighted that practicing communication among stakeholders is critical to improving response time when managing a crisis.

[49] These annual seminars started in 2012 in collaboration with the Nigerian Judicial Institute (NJI), but the programme was suspended in the past three years, due to the COVID-19 Pandemic

Since failures are infrequent, some organisations sought to incorporate takeaways from near failures or significant no-failure events[50] into their testing programs. As an example, in 2019 the AMF experienced a major incident which involved the leak of the personal data of 2.7 million people from a Quebec D-SIFI, leading to the development of new liquidity crisis scenarios, intervention strategies, and test plans.

Testing programs can also benefit from leveraging experiences from relevant events in other jurisdictions. For example, following US bank failures in March 2023, CDIC ran two tabletop exercises, internally and with the safety-net authorities, to rehearse the Canadian response to a Silicon Valley Bank-type scenario in Canada. Similarly, PIDM weaved in the lessons learned from the Credit Suisse and Silicon Valley Bank cases into a tabletop exercise between PIDM and the Central Bank of Malaysia. That said, testing programs need to balance leveraging real events with a focus on building preparedness for future challenges. Exercises should not solely rely on past events as crises are unlikely to stay the same, and a benefit of testing is the ability to design forward-looking scenarios that maintain the element of surprise.

4.2.4. Limitations of testing exercises

As the survey sought to explore the differences between exercises and live events, it identified challenges that were not mitigated during testing. The common findings were:

- Unforeseen issues related to IT systems of the failed bank
- Unexpected legal barriers and human factors
- Time management differences during an exercise versus the real event
- Exercises that did not simulate the speed with which recent crisis events unfolded (lack of runway)
- Unanticipated tasks associated with the failing bank due to its profile and level of complexity

The last two observations accentuate the significance of regularly testing diverse failure scenarios (e.g., rapid fail, concurrent failures) for banks of all sizes. Such preparation is important since resolution methods and impediments to resolvability will differ greatly depending on the scenario tested. Some jurisdictions indicated that time was more constrained during a real event and the ability to provide a fast response was crucial to success. For instance, DNB stated that, during the actual payout, resourcing was a challenge as people often had to work on several streams at once, whereas the size and capacity of the teams seemed appropriate during testing. Similarly, IPAB detected a shortage of personnel in the areas of resolution management, information technology systems, etc. These observations emphasise the value for some exercises to be run in "real time" to provide participants with an experience of what a crisis feels like. Participants should work under time pressures, process large quantities of imperfect information and be faced with evolving challenges and cascading decision points.

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[50] This includes significant events that are a result of external factors not related to a banking crisis (e.g. natural disasters, service interruptions, political/civil unrest).

While testing exercises can be effective tools in preparing deposit insurers for many real-world challenges, some complexities cannot be anticipated. Since each failure is unique, not all elements can be planned for (e.g., cause of failure, the speed of events, etc.). Unpredictable human behaviour and organisational dynamics are also factors that will affect decision making during times of high pressure and demand. In addition, exercises often involve the simplification of complex processes which might not capture all the intricacies of a real crisis. The respondents' experiences highlighted the importance of agility and adaptability and, while no two crises are the same, frequent testing undoubtedly led to timelier and more coordinated handling of real situations.

4.3. Developments from the participants of the RCNA paper since 2021

The final section of the analysis provides a glimpse of the latest developments and progress made by the RCNA jurisdictions following the publication of the 2021 research paper. These organisations were the among the first to improve their crisis preparedness and management capabilities by testing and continue to make strides in enhancing their organisations' crisis preparedness with regular table-top, simulation and training exercises.

Main Findings

- FDIC and IPAB managed real-world bank failures while maintaining a culture of testing, training, and continuous improvement.
- The FDIC's Division of Resolution and Receiverships (DRR) established the cross-divisional Bank Closing Program (BCTP), offering trainings across various bank closing workstreams.
- Following organisational restructuring in 2022, the AMF has established a dedicated simulation function to promote agility and improve communication and coordination of actions across departments.
- In 2022, CDIC conducted a bail-in simulation involving a domestic systemically important bank, provincial authorities, and industry partners that significantly expanded the scope of crisis preparedness and management testing and set the stage for future exercises.

4.3.1. AMF

The AMF is working on its internal operational resilience enhancement program. The next steps are to diagnose the existing situation and update its business continuity policy. A business continuity risk profile is currently being developed in accordance with the integrated risk management framework policy.

In December 2022, the AMF modernised the structure of its Superintendency of Solvency (renamed Superintendency of Financial Institutions) in order to better leverage its role as an integrated regulator, strengthen its holistic view, and improve its ability to react to a major risk by adopting a risk-based rather than entity-based approach. A Supervision – Emerging Risks department has been set up, as well as two coordinating committees, the Risk Committee (tactical level) and the Intervention Committee (executive level), bringing together the

Supervisory and Resolution and Deposit Insurance functions. An existing department has also been tasked with crisis preparedness exercises, to promote agility and improve communication and coordination between departments and committees (Prudential Policy and Simulation department).

The Prudential Policy and Simulation department is now the centre of expertise responsible for implementing and running testing programs. To strengthen their expertise in crisis management and simulations, some resources have joined the Toronto Centre's crisis management program, which focuses on regulators of financial institutions. The department is currently developing a simulation governance framework with an external consultant. Officially launched in spring 2024, the project is divided into four deliverables:

- Improvement of the governance structure for crisis management within the Superintendency (fall 2024)
- Development of an operational framework (spring 2025)
- Establishment of a crisis simulation exercise plan to be deployed over the next two fiscal years (fall 2025)
- Deployment of a simulation exercise to test the governance structure and the operational framework in place (fall 2025)

As part of testing exercises carried out since 2021, the AMF has been conducting annual compliance tests with all authorised deposit institutions. Implemented in 2016/17, these tests have proven highly effective in improving data quality, as institutions are required to remedy deficiencies, while also serving as an ongoing training exercise for AMF staff. Two drill exercises on the reimbursement process were carried out in 2021/22. The cheque-cashing drill exercise allowed the AMF to test the funding mechanisms of the reimbursement account and validate whether cheques are correctly tracked by the banking service provider. The other exercise concerned the relaying of IT systems to external servers and was designed to demonstrate that, during periods of interruption of the AMF's IT infrastructure, the relaying of systems to external servers meets expectations, enabling the operationalisation of the processes necessary for a payout. Finally, to increase the effectiveness of resolution operations, the AMF also held a workshop in 2023/24 to test its Business Valuation Framework, a two-year project finalised in November 2023. Over the coming years the AMF plans to test various components of its resolution framework while the two new committees, the Risk Committee and the Intervention Committee, will be the subject of a test exercise in the near future.

4.3.2. FDIC

In 2021, FDIC's Division of Resolutions and Receiverships (DRR) created a cross-divisional Bank Closing Training Program (BCTP), which is conducted bi-annually. The program provides training for several bank closing work streams. The FDIC's Division of Complex Institution Supervision and Resolution (CISR) continues to build and maintain programs for crisis preparedness, readiness, and capabilities for exercising the agency's statutory authorities under the *Federal Deposit Insurance Act* (FDIA) in relation to large and complex financial institutions (LCFIs). The program includes facilitated discussions, tabletops, simulations, and other planning exercises, involving intra- and inter-divisional stakeholders.

The FDIC's Division of Complex Institution Supervision and Resolution (CISR) continues to build and maintain a testing and simulation exercise program scaled for large and complex financial institutions (LCFIs), including ongoing, institution-specific exercises and cross-border cooperation activities. Examples include a standing Trilateral Principal Level Exercise program[51] involving the FDIC, additional US authorities, and counterparts from the United Kingdom and European Union. CISR's additional standing crisis management preparedness and exercise activities include engagement within the FDIC and with domestic and foreign counterparts, such as regular programs with domestic counterparts to maintain readiness under Title II Orderly Liquidation Authority and planning and preparedness activities through Crisis Management Groups. Quarterly, the Financial Risk Committee, an interagency group comprised of the US federal banking agencies, meets to exchange information on banks at risk of failing. Critical Infrastructure Security & Resiliency maintains these programs in the ordinary course of business. There was no lapse between the exercise program's activities and the most recent bank failures in early 2023.

The FDIC is currently in the process of developing a formal, agency-wide Readiness Test, Training, and Exercise (TT&E) program which will be housed in the agency's Division of Administration. The agency had already started initial efforts to develop an agency-wide TT&E program prior to the bank failures in 2023; however, the bank failures provided extra emphasis and support on the need for such a program. While the FDIC has historically been very active in conducting readiness exercises, a comprehensive program intended to coordinate, integrate, and synchronise all agency Divisions' exercise and testing programs had not been developed. This new approach is intended to strengthen the FDIC's ability to coordinate exercise planning, ensure that organisational elements from across the agency are engaged, and that lessons learned are captured, disseminated, and integrated across the FDIC. The program will also provide a centralised testing and exercise calendar, document repository, and guidance on the development and execution of a variety of exercise formats.

Crisis preparedness and management is also addressed through the FDIC's continuous monitoring of the adequacy of its Deposit Insurance Fund (DIF). The FDIC's processes for ensuring the adequacy of the DIF include regularly updating projections of fund income and expenses, updating its contingent loss reserve each quarter to reflect the cost of resolving bank failures anticipated over a 12-month horizon, and annually setting or re-affirming a Designated Reserve Ratio (DRR) (a percentage of estimated insured deposits) as part of the long-range management plan for the DIF. The DRR is set as a minimum goal that will allow the fund to grow sufficiently large in good times to increase the likelihood of the DIF remaining positive during bad times, including crisis periods, consistent with the FDIC's comprehensive, long-term fund management plan.

[51] https://www.fdic.gov/news/press-releases/2022/pr22033.html

4.3.3. IPAB

Since 2014, IPAB has performed periodic simulations under a centralised approach, coordinated by an independent division: the Strategic Planning & Processes Unit (SPPU). Besides conducting simulations, this division specialises in implementing and monitoring the Institute´s strategy and mapping processes and proposing improvements, as well as coordinating its information security strategy. All of these functions allow for synergies when designing, developing, and evaluating simulations of bank resolutions. As a unit separate from all core activities, the SPPU can provide an independent assessment of the actions in a simulation and present objective recommendations.

Since 2021, IPAB has not made significant changes to its testing program. After concluding a simulations program aimed at evaluating the institutional response to all possible resolution methods according to the Mexican Law and for different types of banks, IPAB has addressed specific problems and situations, including testing resolution plans and planning drills of likely banking resolutions.

In 2021, IPAB successfully managed a bank failure which provided useful lessons for future resolution activities. The SPPU documented these lessons learned in a postmortem assessment and identified potential improvements. In 2022, IPAB carried out a simulation exercise of a medium-sized bank facing a liquidity problem. The objective was to test activities that the administrative units must execute to resolve a bank in a timely manner.

More recently, IPAB has participated in simulations involving other domestic and international authorities. In 2024, IPAB was part of a FSI simulation exercise with authorities from Mexico, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, and Peru. In 2023, IPAB participated in a cyberattack[52] tabletop exercise in coordination with the Mexican Central Bank, the Ministry of Finance and the National Banking and Securities Commission. The exercise generated several policy recommendations and provided all parties with insights into their current capabilities and highlighted areas for improvement. Going forward, the Mexican Financial Authorities plan to develop further simulations to better prepare for potential cybersecurity incidents that have the potential to become systemic, including a market-wide exercise with participants of the financial sector. IPAB will continue to follow international best practices in carrying out periodic simulations to assess the capacity for timely action in the event of a bank resolution. Cooperation between local and international authorities will be a key feature of further simulations.

[52] The Central Bank of Mexico (Banxico) requested technical assistance from the IMF to conduct a series of cybersecurity crisis simulation exercises involving the Mexican Financial Authorities (MFAs). An expert appointed by the IMF worked with Banxico, the National Banking and Securities Commission (CNBV), IPAB, and the Ministry of Finance, to conduct its first cross-authority cybersecurity crisis simulation exercise. This tabletop exercise was conducted in June 2023 and included approximately 30 participants from across all four authorities.

4.3.4. CDIC

Since 2019, CDIC has adopted a centralised approach to crisis preparedness and management testing. In 2023, the Centre of Excellence for Crisis Simulations (CoE), the dedicated testing unit, was partnered with Enterprise Risk Management (ERM) to form the Enterprise Risk and Resiliency group. The department was created to allow greater synergy between testing activities and the ERM program to drive continuous enhancements in CDIC's crisis preparedness and operational capabilities. The Centre continues to take an enterprise-wide and risk-based approach to setting its testing priorities.

Since June 2021, the CoE has organised and ran more than 10 exercises varying from tabletops with CDIC's board of directors to simulations with safety-net partners. In 2022, the CoE conducted a bail-in simulation exercise (Case Study) involving relevant authorities and industry partners that significantly expanded the scope of CDIC's crisis and preparedness activities. The exercise led to identification of areas for improvement to ensure the effective implementation of the bail-in tool and set the stage for future exercises. Credit Suisse's collapse in March 2023 has brought the international resolution framework back into the spotlight and showed that authorities should continue to prioritise simulating effective decision making both domestically and internationally. Continuing testing and addressing challenges related to the implementation of resolution tools for systemically important banks will be a critical part of CDIC's work plan in the years to come.

CDIC Case Study

Bail-in Simulation

In October 2022, CDIC's Centre of Excellence for Crisis Simulations (CoE)[53] conducted a simulation exercise to test domestic bail-in playbooks and protocols with key industry stakeholders. The Canadian bail-in regime allows CDIC to convert certain instruments of a Canadian domestic systemically important bank (D-SIB) into common shares to restore its viability, while allowing the D-SIB to remain open and maintaining continuity of critical functions. The bail-in simulation exercise was predicated on the failure of a fictional D-SIB, "ABC Bank". The two-day simulation tested the steps that would be undertaken upon determination of non-viability by the Superintendent of Financial Institutions up until the delivery of common shares to holders of converted instruments.

Testing the bail-in power was a natural progression in the resolution planning cycle, as most related protocols and playbooks have been put in place within the past five years. At the international level, the FSB has continued to advance the dialogue between resolution authorities and market participants to ensure that bail-in is operational. Given the progress made to date,

[53] In 2019, in support of the enhanced Enterprise Risk Management (ERM) program, CDIC increased its focus on crisis preparedness and management testing by creating a dedicated business unit, the "Centre of Excellence for Crisis Simulations" to take a systematic and enterprise-wide approach to setting testing priorities.

CDIC believed that it was an opportune time to test CDIC's bail-in power domestically. The scenario was designed to test the feasibility of a bail-in over a resolution weekend, to specifically:

- Verify the process (sequence and speed) and information required for a weekend bail-in conversion
- Identify operational challenges that could arise and assess whether sufficient mitigants are in place, or if existing playbooks/protocols need to be amended
- Familiarise the domestic stakeholders with roles, responsibilities, and interdependencies.
- Assess the feasibility of CDIC's preferred approach to bail-in conversion
- Foster collaborative working-level relationships between the domestic stakeholders
- Serve as a foundation for future targeted testing exercises with domestic and foreign regulators and other market participants

More than 50 participants and observers attended the exercise. While CDIC has been conducting inter-agency exercises for several years, the bail-in simulation was the first exercise led by CDIC involving industry stakeholders, in addition to the financial safety net. The expanded scope benefited both the design of the exercise and the discussions during the simulation, setting the stage for future testing.

Planning, design and execution

CDIC's CEO and Board of Directors were involved in outreach to encourage participation and ensure commitment from all relevant industry stakeholders. To boost the involvement and interest of the participants, CDIC took a collaborative approach to defining the scope and objectives, but otherwise assumed the primary responsibility in planning and designing.

CDIC set the scope and testing approach through a series of planning and design workshops with exercise participants. The design team had representation from all participating parties. CDIC created a list of bail-in conversion-related steps that would be undertaken collectively by participating parties. The list was informed by stakeholder protocols, letters, and playbooks. CDIC leveraged this list to: 1) enhance the understanding of the operational challenges, time, documentation, and other requirements associated with each conversion step by asking stakeholders to respond to a series of questions, and 2) define the scope of the simulation activities. As a starting point, CDIC proposed an inventory of activities to be in scope and sought views from stakeholders prior to the simulation to determine which activities should be simulated.

The scenario was developed and refined over the months leading up to the exercise and included assumptions on the macroeconomic backdrop, fictitious "ABC Bank" information, market and media reactions and regulatory responses.

The simulation was held virtually. Participants were asked to set up their own meetings to convene with their respective team(s). Approximately 100 steps were simulated through a combination of specially prepared artifacts, role-played meetings, and discussion walkthroughs over two days. Participants were asked to engage in the scenario, attend all pre-planned and ad-hoc meetings and fill their role as they would in an actual crisis.

Challenges encountered

A practical challenge was the additional time needed for the design phase given the number of stakeholders, each with their own mandate, and the complexity of the steps involved. Due to the expanded participation, there was risk of unintentional release of sensitive information - this concern had not existed to the same extent in past internal and inter-agency exercises. As a result, several safeguards were put in place, including using dummy data and signing non-disclosure agreements (NDAs) with all participating parties. In addition, considerable time and resources were dedicated to properly set up a secure development area. This, and the fact that one participant was involved in a systems upgrade, led to a narrowing of the exercise scope to exclude data production elements.

Participants feedback

Overall, participants and observers appreciated the realistic nature of the scenario and the excellent coordination between stakeholders. Participants expressed a desire for additional targeted exercises in the future to test cross-border issues and coordinate communication processes. Participants also concluded they developed a better understanding of the role and responsibilities of each stakeholder following the simulation. While the exercise was successful, it also identified areas that should be addressed to enhance CDIC preparedness and drive the improvement of protocols and playbooks.

Lessons learned

The bail-in exercise confirmed the benefits of running simulations with relevant stakeholders both within and outside of the core FSN, to identify gaps and reduce uncertainties.

Compared to internal exercises, simulations that include multiple stakeholder groups typically require more time and resources when planning an exercise and putting in place NDAs or other arrangements for secure information exchange to provide confidentiality safeguards. This highlighted the importance of building in buffer time and setting clear expectations. Prior to inviting participating parties, CDIC had identified many key risks internally and considered potential mitigants, which allowed CDIC to remain agile and quickly pivot when challenges were encountered.

Involving external stakeholders also requires clear and careful communication to avoid raising concern about the stability of specific banks. One effective approach was to position the simulation as a proactive and routine part of crisis preparedness work to strengthen resilience across the financial sector rather than in response to a specific concern. Using hypothetical scenarios without naming real institutions can also prevent any undue alarm.

The exercise provided an invaluable training opportunity to participants and observers, validating and identifying areas for further improvements, clarifying roles and responsibilities, and enhancing confidence in the execution of a bail-in. The simulation provided a forum for relevant authorities and stakeholders to work together to strengthen coordination both in normal times and during a crisis. The lessons learned have formed the foundation for future exercises to test the coordination of communication to the public, legal considerations, and cooperative activities with domestic and foreign authorities and market participants.

5. Conclusion

Crisis preparedness and management remains central to a deposit insurer's credibility. Testing offers an effective means for deposit insurers to improve their crisis preparedness by validating existing processes, and identifying and mitigating potential obstacles before a crisis occurs. The speed at which the March 2023 events unfolded once again brought into focus the importance of periodically testing operational capabilities, information sharing, cooperation, and coordination ex-ante.

This paper shines a light on activities that contribute to and enhance a deposit insurer's crisis preparedness and management capabilities, including crisis preparedness and management testing activities across IADI members, where there is notable divergence in history, financial systems, and mandate. While most surveyed members recognise the value of maintaining testing programs, deposit insurers with broader mandates often have more resources and incentives to conduct regular exercises. From a regional perspective, the responses suggest that jurisdictions from North America, Europe and Asia-Pacific tend to have well-established testing programs irrespective of their mandates. This could be due to the maturity of the organisation, a longer history of testing, better integration of these organisations within their FSNs, continuous promotion of testing efforts, experience in collaborating among authorities within the regions, and formal testing requirements (EU). Though it is important for deposit insurers of all mandates to test their crisis preparedness and management plans, organisations can make decisions tailored to their unique needs and available resources. Establishing a testing program should not be daunting; experiences in this paper demonstrate that most jurisdictions started testing on an ad-hoc basis and have successfully evolved their objectives and expanded the scope of their programs over time. IADI can consider establishing a forum or avenue to share the details such as scenarios, injects, and lessons learned to facilitate experience sharing, learning, and improvement.

Although the number of real failures studied in this paper is limited, the findings provide evidence testing enhances preparedness and management capacity when a real crisis strikes. All jurisdictions with recent experience handling a failure observed positive impacts deriving from crisis preparedness and management testing activities. These exercises allowed for a better understanding of roles and responsibilities, drove system and process improvements, and fostered stronger coordination and cooperation both within the organisation and with other FSN participants. For jurisdictions lacking practical experience with bank failures, periodic training exercises are invaluable since it is often the only avenue for staff to practice for a failure scenario.

While testing of crisis preparedness and management plans is a net benefit, challenges and areas for refinement remain for deposit insurers. The lack of objective, quantitative metrics and data impacts the ability to effectively measure the success of a program and provides a case for necessary resources and support from other units.

Future research projects could expand on this topic and investigate the impacts of a public announcement of testing exercises. Another potential area for research relates to system-wide testing exercises that involve all FSN participants within a jurisdiction. The March 2023 banking crisis demonstrated the importance of a well-functioning financial safety net in which deposit insurers contribute to financial stability. This reiterates the importance of deposit insurers being fully integrated into FSN coordination mechanisms and being treated as an equal partner. More broadly, the role, objectives, and purpose of crisis preparedness and management planning could be examined in the aftermath of the 2023 banking crisis.

Bibliography

Albanian Deposit Insurance Fund. (2022). Annual Report 2021.

European Banking Authority. (2021). Final Report on the Revised Guidelines on stress tests of deposit guarantee schemes under Directive 2014/49/EU repealing and replacing Guidelines EBA/GL/2016/04 ('Revised Guidelines on DGS stress tests').

FSI. (2021). Cross-border crisis simulation exercise in South America, *Financial Stability Institute Occasional Paper No. 18*, October 2021.

FSI. (2023). Cross-border crisis simulation in sub-Saharan Africa, *Financial Stability Institute Occasional Paper No. 21*, December 2023.

FSI. (2024). FSI In Review 2023.

FSI. (2024a). Cross-border crisis simulation in Latin America, Financial Stability Institute Occasional Paper No. 22, September 2024.

IADI. (2014). IADI Core Principles for Effective Deposit Insurance Systems. International Association of Deposit Insurers.

IADI. (2021). Contingency Plan Testing in North America, *International Association of Deposit Insurers Regional Research Paper*, June 2021.

IADI. (2023). The 2023 banking turmoil and deposit insurance systems: Potential implications and emerging policy issues. *International Association of Deposit Insurers, December 2023.*

IADI. (2023a). Reimbursing Depositors Now and in the Future: Challenges, Remedies and Trends. *International Association of Deposit Insurers Research Paper, June 2023.*

IADI. (2023b). Thematic Review No.2. External Relations. International Association of Deposit Insurers, September 2023.

Lee, Yejin Carol. *The World Bank Crisis Simulation Exercise Handbook (English).* Equitable Growth, Finance and Institutions Insight Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/099125002162330340/P1776920e37f660f70b6640fe108468feb5

Appendices

Appendix A - Survey Instrument

Accessible to IADI members via the eBIS website.

Appendix B - List of Respondents to the Survey

No.	Jurisdiction	Name of Deposit Insurer
1	Azerbaijan	Azerbaijan Deposit Insurance Fund
2	Brazil	Fundo Garantidor de Créditos
3	Canada	Canada Deposit Insurance Corporation (CDIC)
4	Canada (Quebec)	Autorité des marchés financiers (AMF)
5	Colombia	Fondo de Garantías de Instituciones Financieras (FOGAFIN)
6	Ecuador	Corporación del Seguro de Depósitos (COSEDE)
7	Finland	Finnish Financial Stability Authority
8	Jamaica	Jamaica Deposit Insurance Corporation
9	Korea	Korea Deposit Insurance Corporation
10	Malaysia	Perbadanan Insurans Deposit Malaysia (PIDM)
11	Mexico	Instituto para la Protección al Ahorro Bancario (IPAB)
12	Morocco	Moroccan Deposit Insurance Corporation
13	Pakistan	Deposit Protection Corporation
14	Palestine	Palestine Deposit Insurance Corporation
15	Thailand	Deposit Protection Corporation
16	Uruguay	Corporación de Protección del Ahorro Bancario (COPAB)
17	West African Monetary Union	West African Monetary Union Deposit Insurance Fund
18	United States	Federal Deposit Insurance Corporation (FDIC)
19	Philippines	Philippines Deposit Insurance Corporation
20	Mongolia	Deposit Insurance Corporation of Mongolia
21	Netherlands	De Nederlandsche Bank (DNB)

Appendix C - Technical Working Group Members

No.	Jurisdiction	Name of Deposit Insurer
1	Joanne Khouryati	Canada Deposit Insurance Corporation
2	Carl-Emil Charpentier	Canada Deposit Insurance Corporation
3	Ryan Melnik	Canada Deposit Insurance Corporation
4	Chloe Yao	Canada Deposit Insurance Corporation
5	Badr Barhoumi	Canada Deposit Insurance Corporation
6	Nadine Saryeddine	Canada Deposit Insurance Corporation
7	Tomasz Obal	Bank Fund Guarantee (Poland)
8	Bello Hassan	Nigeria Deposit Insurance Corporation
9	Eva Bürer	De Nederlandsche Bank
10	Galo Cevallos	Federal Deposit Insurance Corporation
11	Sherriann Shaw	Federal Deposit Insurance Corporation
12	Lee U Men	Perbadanan Insurans Deposit Malaysia