

# An Education And Training Framework For Disaster Risk Management In Banks

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## ABSTRACT

*Banks are the most significant financial institutions operating within nation-state and the global financial system. These institutions are exposed to a wide range of operational risks. Disaster risk management is a critical component of the wider operational risk management. The Bank for International Settlements, in conjunction with nation-state prudential regulators, is introducing measures that will require banks to identify, measure and manage operational risks within the context of new capital adequacy requirements. An essential part of any risk management process is education and training. This paper presents a structured education and training framework that will support the achievement of banks' disaster risk management objectives. The education and training framework comprises three specific programs: (1) an induction/awareness program targeted to all personnel, (2) a contingency planning program – a specialist program for disaster risk management personnel, and (3) an executive program designed for senior management, directors and strategic decision makers.*

## INTRODUCTION

This paper identifies the essential components of a disaster risk management education and training framework for banks. An effective education and training framework must be compatible with a bank workplace environment and be able to meet the learning objectives of the institution and its personnel whilst incorporating comprehensive issues related to disaster risk management. Initially the paper introduces theoretical issues of education and training, and disaster risk management. This is followed by a description of the proposed disaster risk management education and training framework that is applicable for banks.

Three education and training programs target a different cohort of personnel with a bank. Program one introduces disaster risk management to all bank personnel; program two provides specialist education and training to appropriate bank personnel; and finally program three is applicable to strategic policy decision-makers within the institution.

Implementation of the targeted education and training programs will encourage a positive disaster risk management culture and practice within a bank. Bank personnel will know and understand the nature of the risk exposures and their related responsibilities.

## THE BANK AS A LEARNING INSTITUTION

It is often difficult for a bank to differentiate itself on the basis of its products or services. Knowledge, however, is an asset that a bank can potentially manage in order to gain a sustained competitive advantage (Nonaka, 1994; Foss and Pedersen, 2000). The financial system is dynamic and change is always present. Banks need to become learning institutions whereby data and information is accessed and created, and processes ensure the transfer of that data and information from the originator to the overall organisation. For the data and information must be absorbed into the bank's knowledge base and applied into business practice to ensure maintenance of a competitive advantage.

The objectives, policies, procedures, structures and personnel of a bank will all interact and impact on the effectiveness of knowledge accumulation outcomes. Learning should occur vertically and horizontally across a bank,

having regard that a bank is typically operationally diverse and geographically separated, and provides a number of products and services to variety of customers. Personnel within a bank possess different levels of knowledge, qualifications, experience, performance abilities, personal values, perceptions and cultures (Senge et. al., 1994). These will impact upon knowledge and learning outcomes.

A bank must implement processes that motivate individual learning together with team learning and encourage a convergence between the institution's visions, goals and core values and those of bank personnel (Gallagher et. al., 1997). This will allow a bank to create an active learning culture that facilitates constructive disaster risk management policy and practice.

A positive learning culture will support a bank's disaster planning process and the disaster response process. Knowledge is an essential component in effective disaster risk management. Knowledge management, within the context of disaster recovery planning, facilitates the codification and access to both explicit knowledge and tacit knowledge that exists within a bank (Gee et. Al., 1996; Davenport and Prusak, 1998). An education and training framework will increase the level of awareness of personnel to the importance and benefits of knowledge management in the documentation of explicit and tacit knowledge into contingency plans. Elements of education and training programs should provide bank personnel with the skills to document business practice.

Access to knowledge is critical in a disaster situation. Systems must enable the rapid movement of knowledge from the individual, business unit or the knowledge base of a bank to those that need access so that they can respond to a disaster. The corporate culture should be such that those that possess knowledge demonstrate sufficient trust in the bank to be willing to make that knowledge available to the wider organisation.

## **EDUCATION AND TRAINING AND THE ADULT LEARNER**

Education and training programs will include behaviourist approaches to learning that are relevant to aspects of disaster risk management (Bushell and Dorsey, 1985). There clearly will be situations when disaster risk management processes will target specific behaviour by personnel. Therefore, elements of an education and training program will be directed towards situations of stimulus and response where consequences are positively reinforced in order to achieve more complex disaster risk management learning and performance outcomes. Education and training programs will include procedures that ensure behaviourist approaches to learning are automatically applied in the day-to-day workplace.

However, within the dynamic international financial markets personnel must also be able to apply cognitive learning processes (Eraut, 1994). That is, through processes of assimilation and accommodation personnel will incorporate perception, thinking, attention, language, reasoning, problem solving, creativity, memory and intelligence to the processes of disaster risk management.

Cognitive learning strategies are essential in the development of effective disaster risk management. Major disruptions to critical business functions are typically not frequent occurrences, therefore behaviourist approaches of progressive stimulus and response are difficult to apply to the wide range of disaster situations that potentially may occur. An education and training framework should encourage the active application of cognitive learning skills (Tenant and Melville, 1999) into the day-to-day work environment.

Education and training programs need to recognise and accommodate the diverse levels of knowledge, skills, influences and learning abilities of bank personnel. On-going participation in education and training programs will improve the knowledge and skill levels of personnel through a taxonomy of knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). This will allow personnel to eventually move from novice through to expert in disaster risk management practice. Education and training programs should provide personnel with the time to reflect on their learning.

Cognitive learning styles are affected by an individual's intellectual ability, personality, prior knowledge, experience and motivation. A learning style may be auditory, visual, or tactile/kinesthetic, and a learner's approach to

a style may be deep, surface or strategic (Sarasin, 1999). Bank personnel will exhibit combinations of learning styles and strategies. The education and training framework must take into account the learning differences of bank personnel. The corporate culture in a bank needs to encourage and facilitate a normal workplace environment where personnel apply their cognitive learning strategies.

Further, bank personnel contribute as individuals and as members of business unit teams in the workplace. Therefore, the effectiveness of situated learning is influenced by organisational, social and cultural aspects of the communities of practice in which personnel work. Education and training programs should establish a positive learning environment that allows personnel the opportunity to engage and participate in business units. Education and training programs need to consider issues of personal power, bank politics, education, ethnic background, sex, reputation, seniority, experience and knowledge that impact upon the creation, transfer, absorption and application of knowledge and learning throughout an institution.

An education and training program should endeavour to encourage a learning culture whereby the values and personal growth of the individual complement the disaster risk management objectives of a bank. For example, program trainers need to be aware of workplace situational contexts that relate to bank personnel, particularly those beliefs, attitudes and values that directly impact upon an individual's learning and disaster risk management practice.

There is a direct correlation between the effectiveness of a bank's disaster risk management and the contribution its staff. The role of personnel in disaster risk management is critical if a bank is to maintain business continuity. Disaster risk management education and training is therefore critical. Bank personnel typically will not have been exposed to disaster situations. The education and training programs will assist bank personnel to gain the knowledge and skills necessary to effectively implement and maintain the disaster risk management.

## **EDUCATION AND TRAINING FRAMEWORKS**

Education typically addresses the longer-term development of conceptual abilities of knowledge, personal skills, values and understanding. Training targets performance outcomes through specific short-term programs that enable the acquisition of functional abilities and skills. The education and training framework developed in this paper draws together the interrelationships between education and training through a holistic and integrated approach to disaster risk management.

Curricula should be developed within the context of the learning needs of the bank and bank personnel. The overall objective of an education and training curricula is to ensure the application of improved disaster risk management practice. Therefore, any variance between the education and training program intention, implementation and attainment need to be considered, including the explicit and implicit curriculum, and the planned and received curriculum (Tight, 1996). Conflicts of values and interests between bank policy, bank personnel and program trainers must be resolved to ensure the intended curricula matches the actual curricula.

A range of curriculum development models is available, including rational, cyclical and dynamic models. Some models highlight the learning needs of the individual while others focus on the needs of the organisation. The education and training framework should incorporate a balance of both. Monitoring, evaluation and review are components of education and training programs.

Curriculum evaluation allows management and trainers to consider the appropriateness, efficiency, effectiveness, benefits, responsiveness and need for improvement of the structure and curricula in a program. A range of methodologies is available to measure and evaluate the performance of an education and training program. These include summative, formative, preordinate and non-preordinate measures, and portrayal, illuminative and responsive evaluation (Athanasou, 2000). A bank's decision-makers and program trainers must implement a structured, but dynamic and flexible approach to curricula evaluation that will facilitate and substantiate new curricula and program development.

Education and training program curricula should recognise the relationships that exist between formal program learning and the less-formal learning that occurs in day-to-day practice. All bank personnel will participate in an awareness/induction disaster risk management education and training program. The education and training programs will raise the level of participants' knowledge and skills in disaster risk management, progressing through stages of acclimation, competence and expertise.

### **WHAT DISASTER RISK MANAGEMENT ISSUES SHOULD BE INCLUDED IN AN EDUCATION AND TRAINING FRAMEWORK?**

Disaster risk management impacts upon a bank's ability to maintain its day-to-day business operations. It relates to the risk of direct, indirect or consequential operational and financial impacts incurred as a result of inadequate or failed internal or external processes, people, systems or events. These may result, for example, from a natural disaster such as an earthquake or a physical disaster such as a loss of communication systems.

Disaster risk management may be described as a dichotomy of disaster recovery planning and disaster recovery response. The disaster recovery planning process and the disaster recovery response process comprise a wide range of core components. Each component has implications for, and must be incorporated in, a disaster risk management education and training framework. The core components of the disaster recovery planning process are briefly described below:

1. The establishment of an organisational disaster risk management structure that is horizontally and vertically integrated throughout the bank using a top-down approach. The management structure reports to the board of directors and includes a global risk committee, a disaster risk management group and divisional contingency planning units. The global risk committee comprises executive managers and implements strategic policy initiatives to achieve the bank's disaster risk management objectives. The disaster risk management group develops, implements, coordinates, monitors and maintains the bank's overall business resumption plan. Divisional contingency planning units ensure the relevancy of disaster risk management within business units in each functional division of the bank. This includes planning teams, emergency response teams and recovery teams.
2. Risk analysis and business impact analysis. These are processes of risk identification and measurement using quantitative and qualitative methodologies. The risk analysis process ensures all risk exposures are identified and understood by the bank. This enables existing procedures to be improved and thereby lessen the potential risk exposure. The business impact analysis measures the operational and financial effects of a disruption to a business function, particularly critical business functions.
3. Business function recovery prioritisation. When a large and diverse organisation, such as a bank, experiences a major disruption to business operations it is not possible to resume all functions at the one time. It is necessary to establish a recovery prioritisation schedule. The business impact analysis will be used to substantiate the prioritisation of business function recovery at the divisional level, but within the constraints of the bank's integrated business resumption plan.
4. Development of disaster recovery strategies. Bank personnel need to be aware of the range of alternative strategies that may be put in place to maintain critical business functions. For example, in order to ensure the resumption of computer operations a bank may build a dedicated back-up computer centre, alternatively the bank may out-source that function to a specialist provider. To facilitate these arrangements, a bank will enter into disaster recovery service agreements and support agreements.
5. Education and training. This is a core component of disaster risk management and is the basis upon which the proposition for this research evolved. The outcome of this research is the construction of a disaster risk management education and training framework that is appropriate for implementation by banks.
6. Testing of disaster recovery strategies. A bank must be absolutely confident that its disaster recovery strategies will be effective in the event of a disruption to critical business functions. Therefore, the bank must establish a structured testing program that progressively tests all components of the bank's disaster recovery strategies. Testing should be integrated throughout the bank.
7. Plan maintenance. This includes the on-going monitoring, review, reporting and auditing of the bank's disaster risk management processes. This component will ensure changes in a bank's systems, products and

procedures are reflected in the disaster recovery plan. Periodic auditing and review ensures executive management and the board of directors are appropriately informed.

Ultimately, the effectiveness of the above disaster recovery planning process is dependent on the actions taken by bank personnel in response to a disaster situation. The core components of the disaster recovery response process include:

1. Plan activation. The disaster recovery plan specifies when a disruption to normal business operations is to be declared a disaster. The disaster alert trigger point will activate notification procedures, emergency response teams and recovery strategies.
2. Impact assessment and evaluation. Divisional recovery teams will conduct an initial analysis of the operational impact of a situation. They will report to management and advise on which recovery strategies need to be implemented, including the initial estimates of resources and time required in order to recover primary business operations.
3. Recovery control centre. This is the location from which the disaster recovery response is managed. Key personnel will report to the centre and direct recovery operations within the context of the bank's business resumption plan. The recovery control centre facilitates the control, command and coordination management decision processes.
4. Communications and media liaison. The disaster risk management group will take control of a disaster situation and communicate with executive management. Divisional recovery planning teams must be able to communicate with their personnel. Communications will be established with providers of recovery facilities, service and support agreements. Media liaison personnel will establish communications with bank supervisors, government authorities, the press, customers and other market participants.
5. Implementation of prioritised business recovery. Back-up strategies, facilities, service agreements and support agreements will be activated, but only within the constraints of priorities established in the bank's overall business resumption plan.
6. Performance evaluation, reporting and plan review. During the course of a disaster event, the disaster risk management group will monitor and evaluate recovery progress and report to executive management. When recovery is complete it is necessary to thoroughly analyse, evaluate and review performance outcomes and, as appropriate, revise the disaster plan.

The purpose of disaster risk management is to ensure a bank and its personnel are prepared to respond to an event that disrupts critical business functions and are able to effectively recover those functions. Education and training is integral to achieving these disaster risk management objectives. Programs within the education and training framework incorporate the core components of disaster risk management.

#### **AN EDUCATION AND TRAINING FRAMEWORK FOR DISASTER RISK MANAGEMENT FOR BANKS**

This section presents an education and training framework that will support the disaster risk management objectives of banks, and improve the capability and preparedness of institutions and their personnel to plan for, and respond to, an occurrence that may affect the continuity of critical business functions.

Three disaster risk management education and training programs have been developed. Each program is directed towards a discrete group of participants:

1. Induction/awareness program
2. Contingency planning program
3. Executive program

All bank personnel and associated non-bank personnel should complete the *induction/awareness program*. Participants in the *contingency planning program* will be specialist disaster risk management personnel, while the board of directors and executive management, including global risk committee members and audit and compliance committee members, will complete the *executive program*.

Each education and training program includes the rationale, participants, objectives, curriculum framework, learning outcomes, and performance indicators.

### **Program 1: Disaster Risk Management – Induction/Awareness**

The induction/awareness program should be completed by all bank personnel. A bank may also provide the program to non-bank personnel from other organisations that provide critical services to the bank.

This program recognises that the effectiveness of disaster risk management is dependent upon the attitude and actions of personnel. All bank personnel must know and apply the principles of risk management and want to participate in a corporate culture and practice of active and positive disaster recovery planning and response. The induction/awareness program curriculum framework incorporates the following issues and learning outcomes:

1. What is a disaster: why is disaster risk management important? Participants will be able to describe examples of physical and natural disasters and identify critical business functions that may be exposed to such disasters.
2. Organisational disaster risk management objectives, policies and procedures. Participants will be able to explain why a bank needs to maintain the continuity of its critical business functions. Participants will know how they can include disaster risk management in their day-to-day operational practice.
3. The bank's disaster risk management organisational structure. Participants will be able to describe the bank's disaster risk management organisational structure, emphasising the roles and responsibilities of individuals within business units.
4. Risk and the disaster recovery planning process. Participants will be able to give a range of examples of risk and demonstrate the practical application of the risk management process.
5. The disaster recovery response process. Participants will be able to explain through examples why a bank implements a structured and prioritised disaster recovery process.
6. How to respond in a disaster situation. Participants will know their responsibilities in an emergency, including disaster identification and reporting procedures, personnel safety, asset damage mitigation and building evacuation procedures.
7. Applying learning into practice. Participants will return to their workplace knowing they have the fundamental knowledge and skills and are able to apply effective disaster risk management practice into their day-to-day business operations.

### **Program 2: Disaster Risk Management – Contingency Planning**

Whilst all bank personnel must incorporate disaster risk management into their day-to-day practice, certain personnel will be responsible for core components of the disaster recovery planning and response processes. The contingency planning, will provide these personnel with the necessary specialist knowledge and skills to effectively complete those tasks. Participants include organisational disaster risk management group members, divisional contingency planning unit members and nominated global risk committee members. The contingency planning program curriculum framework incorporates the following issues and learning outcomes:

1. Construction of a contingency plan. Participants will appreciate the benefits that will derive from contingency planning and develop a culture whereby contingency planning is incorporated in normal business operations. Participants will be able to effectively apply the bank's standard contingency planning software and format to their business unit functions.
2. Risk analysis, business impact analysis and recovery prioritisation. Participants will be able to identify risk exposures within their work environment and review procedures to minimise such exposures. Participants will be able to apply quantitative methods and qualitative measures to determine the operational and financial impact of a disruption to business functions. Based on the risk analysis and business impact analysis, participants will be able to document a recovery prioritisation schedule.
3. Disaster recovery strategies, service agreements and support agreements. Participants will have acquired the knowledge and skills to identify, analyse, compare and evaluate recovery strategy alternatives and be able to

- make recommendations to management based on a cost/benefit analysis. Participants will be able to construct basic service agreements and support agreements.
4. Emergency response teams, divisional recovery teams and communications. Participants will be able to perform the responsibilities of emergency response team members in a disaster situation; that is, to ensure the safety of bank personnel, the implementation of disaster notification procedures and the initial mitigation of damage to assets. Participants will also be able to describe the roles and responsibilities of divisional recovery teams in implementing disaster recovery procedures within the context of the organisational business resumption plan and the divisional recovery plan. Participants will be able to demonstrate the application of communication procedures, including activating 24-hour contact arrangements and establishing communications with the recovery control centre, back-up facilities and service and support providers.
  5. Disaster recovery plan testing. Participants will be able to develop and maintain a structured and comprehensive recovery plan testing schedule. Participants will be able to apply a range of testing methodologies, evaluate performance outcomes and report results to management.
  6. Plan maintenance, monitoring and review. Participants will be able to maintain the currency of a disaster recovery plan, including the application of procedures to ensure new products and services and changes in operational procedures are reflected in the disaster recovery planning and response processes. Participants will be able to implement the bank's policies in relation to plan review and reporting requirements.

### **Program 3: Disaster Risk Management – Executive**

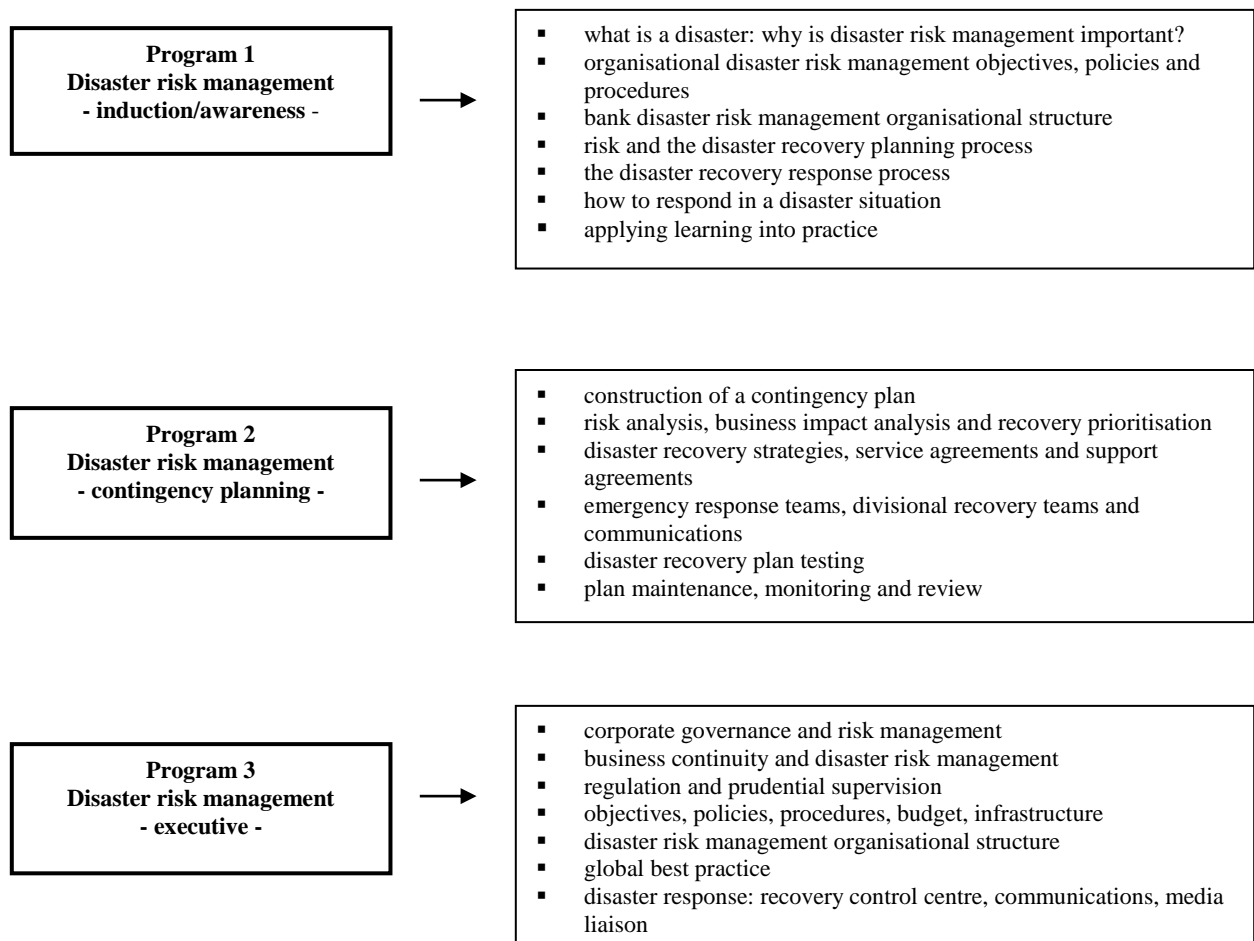
The essential role of the board of directors and executive management in driving disaster risk management is recognised in program 3. This program, Disaster risk management – executive, addresses issues that will support the board of directors and executive management in determining appropriate disaster risk management objectives, policies, strategies and procedures. The executive program curriculum framework incorporates the following issues and learning outcomes:

1. Corporate governance and risk management. Participants will be able to critically review corporate governance risk management policies and practice and shape new strategies to improve the bank's disaster risk management corporate culture.
2. Business continuity and disaster risk management. Participants will be able to apply a structured risk management process to the disaster recovery planning and response processes and identify issues that must be the focus of the strategic decision-maker.
3. Regulation and prudential supervision. Participants will be able to evaluate different prudential supervisor approaches to disaster risk management. They will also be able to investigate the implications of the Basel Committee on Banking Supervision proposals for the application of a capital charge for operational risk and the recording of operational risk occurrences.
4. Objectives, policy, procedures, budget and infrastructure. Participants will be able to review current disaster risk management objectives, policies and procedures and recognise any divergence between policy and practice. Participants will also be able to identify the bank's critical business functions, and evaluate and review disaster recovery strategies and infrastructure, budget allocations and testing programs.
5. Disaster risk management organisational structure. Participants will be able to identify and describe the scope, roles, responsibilities, authorities, reporting structures and review procedures applicable to the disaster risk management organisational structure. Participants will also recognise the linkages between divisional contingency planning units, the organisational disaster risk management group, and the global risk committee.
6. Global best practice. Participants will be able to investigate and evaluate global best practice in disaster risk management, and analyse and compare the bank's current practice. Participants will be able to develop and implement policies and strategies that will enable the implementation of best practice.
7. Disaster response: recovery control centre, communications, media liaison. Participants will be able to demonstrate leadership in responding to a disaster situation. Participants will be able to activate recovery control centre procedures, particularly the initiation of communications. They will be able to command, control and coordinate the disaster recovery process. Participants will also know their roles and responsibilities in relation to the bank's policies and procedures for media liaison.

**CONCLUSION**

The disaster risk management education and training framework for banks comprises three specific programs that are directed towards identifiable groups of bank personnel. That is, an induction/awareness program for all bank personnel, a specialist contingency planning program, and an executive program for strategic policy decision-makers. The curriculum framework within each program is designed to achieve learning outcomes that will result in measurable performance indicators that reflect disaster risk management culture and practice that derives from the bank’s related objectives, policies and procedures. Figure 1 presents the three disaster risk management education and training programs and the curriculum framework – relevant to each program.

**Figure 1: An Education And Training Framework For Disaster Risk Management For Banks**



The overall success of the education and training programs will become evident through a positive change in a bank’s commitment and corporate culture in relation to disaster risk management. Learning outcomes and performance indicators have been specified for each program; some will be immediately measurable on completion of an education and training program, others will be sustained over time as bank personnel progressively apply their disaster risk management knowledge and skills to their day-to-day business practice.



The objective of disaster risk management is to establish policies and procedures that will ensure the capacity of a bank to maintain the continuity of its critical business functions and resume normal operations within defined time parameters. Education and training is an essential in achieving this outcome.

The development of an education and training framework for disaster risk management for banks is particularly significant given their special role as the major institutions within the financial system. Banks are the key drivers of a modern and efficient financial system that is essential for a nation-state to achieve sustained economic growth. However, the nature of a bank's business, in particular the structure of its balance sheet, means a bank is exposed to a loss of public confidence and adverse market perception. A bank must ensure objectives, policies, strategies and procedures are developed, implemented, monitored and maintained that will enable the bank to plan for, and respond to, an event that may disrupt the continuity of its critical business functions. Bank regulators and supervisors are taking a greater interest in the management of operational risk by banks, including disaster risk management.

This paper presents an education and training framework that will support the disaster risk management objectives of banks, and significantly improve the capability and preparedness of institutions and their personnel to plan for, and respond to, an occurrence that may affect the continuity of critical business functions.

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