



The Port Resiliency Program (PReP)

Promoting a Secured Supply Chain for the Americas

Americas Relief Team

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An Initiative for Developing a Resilient Network of Airports and Seaports throughout Latin America and the Caribbean

PReP 2.0 Technical Narrative

Overview

When airports and seaports are damaged in a disaster, the local community, indeed the whole region, faces a ripple effect of multiple hardships. The very crisis that damages the port impedes efforts to provide aid. Critical medical and other evacuations are delayed. Delivery of badly-needed food and supplies is stalled. Economic recovery is impeded. Trade slows or stops, jobs are lost, businesses fail, and revenue from duties, taxes, and tariffs declines.

To ensure the highest possible degree of functionality in the event of an emergency or disaster, Latin American and Caribbean airports and seaports must focus, both internally and externally, on improving their resiliency. The Port Resiliency Program (PReP) seeks to provide technical, material, and strategic support to support ports facing complex challenges both during and after a crisis. Ports participating in the program will be assisted in identifying their specific vulnerabilities and needs and applying best practices. PReP is a structured, functional port preparedness, resiliency, and recovery program that standardizes and streamlines response, ensures optimal interoperability among ports and their partner agencies, and promotes a timely reopening of damaged ports with rapid restoration of trade activity and support for humanitarian relief.

PReP is optimized to help a port deal with natural disasters that disrupt the port's ability to function for a significant period or reduce its functionality. Recent examples are hurricanes, earthquakes, tsunamis, and mudslides. Another class of natural disaster is communicable disease, which may disrupt air or sea travel or turn into an epidemic or pandemic. PReP is designed not only to deal with a disaster that strikes a port but also with a regional or national disaster that puts extreme operational pressures on the airport or seaport.

Background

Ports--both seaports and airports--are often sprawling enterprises; each is uniquely operated and regulated depending on geographic location and local governing structure. A port is a multifaceted assemblage of facilities and functions, such as terminals, delivery areas for packages or luggage, communication and information



systems, security, process control coordination centers, document and goods storage areas, customs and border control, emergency response, and public and protected areas.

Seaports are seldom a single entity; rather, they are usually a diverse collection of private and public maritime stakeholders, with the role of port authorities varying from port to port and country to country. Airports are usually less complex in terms of stakeholders, but still involve a wide variety of interactions among multiple parties. In short, the interdependencies among the various stakeholders, customers, clients, and the local community are vast and complicated for both airports and seaports, requiring careful, considered planning for protection of vital interests and assets.

The Need

Due to its unique geography, the Latin America and Caribbean region (LAC) is vulnerable to severe weather events. Several Caribbean basin countries lie directly in the path of tropical hurricanes, which occur annually from June through November; in addition, the magnitude and frequency of hydro meteorological hazards is expected to increase over the next ten years. Many LAC countries face the hazard of seismic activity resulting in earthquakes, volcanoes, and tsunamis. Indeed, it is a foregone conclusion that over the next few decades LAC countries will continue to be hit by severe hurricanes and/or other natural disasters resulting in the temporary closure of ports. The Zika and Ebola crises since 2014 have shown the risks posed by communicable diseases and the critical role that modern travel, especially air travel plays in the spread of disease.¹

Over the past 20 years, the Latin American and Caribbean region has sustained a devastating number of fatalities, immeasurable fragmentation of families and communities, the loss of thousands of jobs, and billions of dollars' worth of property damage due to hurricanes alone. Over a thirty-year period (1970 to 2000), the LAC suffered an estimated yearly average of 7,500 deaths due to natural disasters, with an estimated annual average cost of between \$700 million and \$3.3 billion dollars.² Much of the region is comprised of relatively small islands, with the economy dependent on international trade. Since ships and planes import and export cargo to and from the region, protecting ports helps Latin American and Caribbean countries, their businesses, and their international partners thrive in the global economy.

Inadequate disaster risk management policies and practices compound the humanitarian and economic cost of damage sustained from natural disasters. While some LAC countries currently employ disaster resilience strategies, very few, if any, are fully optimized: local and regional planning, training, drilling, and exercising of standard operating procedures (SOPs) are still evolving. Clearly, there is a pressing need for the implementation of a fully integrated disaster resilience strategy in the LAC region involving ports, state coordinators, government agencies, NGOs, logistics firms, and other stakeholders. An accelerated port restoration plan such as PReP can be of tremendous benefit in fostering disaster resilience in the region. Helping disaster-stricken Latin American and Caribbean countries reopen ports as quickly as possible restores the flow of aid and trade commodities in timely and effective manner so that normal economic and commercial activities can resume.

Definition of Key Terms: Resiliency and Disaster Risk Management

The idea of resiliency embodies two concepts. First, a society, facility, or system is resilient if it resists disruption during a disaster. Second, a society, facility, or system is resilient if it can survive damage and return to an adequate level of functioning quickly after a disaster. In other words, a resilient facility can both avoid or mitigate damage and respond effectively should damage occur, reestablishing normal or near-normal levels of operations in time to minimize damage to individuals and enterprises that depend on that facility.

¹ Preparing Airports for Communicable Diseases on Arriving Flights. James F. Smith & Joshua L. Greenberg, in press (2017).

² Natural Disasters in Latin America and the Caribbean: An Overview of Risk. Celine Charveriat, October 2000.



Resiliency is not simply a physical attribute of a facility; rather, it is a quality that needs to be designed or retrofitted into all aspects of port operations. Human resources, the physical plant, equipment, administrative procedures, operational procedures, the legal environment, business continuity planning, and relationships with surrounding entities must be attuned to the probable future effects of a disaster and be prepared to counter and/or address those effects quickly and effectively after the fact.

Disaster Risk Reduction (DRR)

The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events. (U.N. International Strategy for Disaster Reduction)

Airports and seaports are essential for the economic well-being of the islands and most mainland countries in the Latin American and Caribbean region, and they become even more important following a disaster. Major natural disasters illustrate just how vulnerable critical transportation infrastructure can be. Compromised ports can delay and complicate disaster and humanitarian response and recovery, not just of the infrastructure, but of the entire region and society served by that infrastructure.

The importance of airports and seaports in both disaster response and economic recovery was brought home by the stories emerging in the aftermath of Hurricane Katrina in 2005 and the Haitian Earthquake in 2010: damage incurred by those events was tragically compounded by disabled or poorly-functioning ports. PReP strives to apply important lessons learned from these and other disasters combined with best management practices from around the world to promote increased resiliency of airports and seaports.

Experts in the field of risk management widely agree that the most effective way to confront natural hazards is to implement strategies that emphasize preparedness and resiliency. This consensus approach, commonly called *disaster risk management*, involves

- Careful assessment of the vulnerability of countries and their populations to natural disasters;
- Implementation of prevention or risk reduction measures which seek to avoid disasters and, when that is not possible, to mitigate the damage they cause;
- Extensive advance preparation so that quick and effective response saves lives and property following a disaster; and
- Proactive efforts to ensure that, when disaster strikes, financing is available to cover the costs of rescue, recovery, and rebuilding.³

The PReP Program

Approach

PReP's fundamental approach is to help airports and seaports identify and address their weaknesses and build on their existing strengths. Participants will be coached in self-evaluation of risks and current plans as well as identification of gaps in preparedness and resiliency. The program will help airports and seaports close targeted gaps through custom-tailored training modules and a culminating table top exercise. A continuous improvement

³ Managing Natural Disasters, Lucy Conger, September 2011



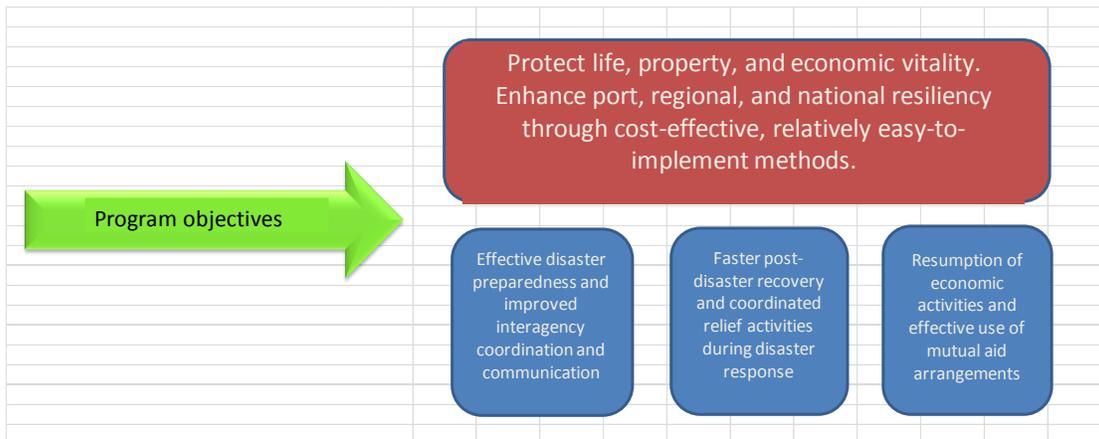
cycle ensures sharing of lessons learned and best management practices that evolve as more and more airports and seaports are served.

Effective port resiliency must be built at the local level. When local stakeholders work together to prepare for, respond to, recover from, and mitigate damage caused by catastrophic events, resiliency naturally emerges as a shared cultural value. In addition, a local approach ensures that the individuals who will be practicing and implementing preparedness plans understand the importance of resiliency and are fully committed to the particular strategies developed for their unique situation.

Working outwards from local ports promotes community and national resiliency, creating an integrated framework that bridges local and industry knowledge, capacity, and support with the necessary resources. Collaboration through such a framework yields practical, sustainable, stable, equitable, and cost-effective measures to reduce vulnerability.⁴ Strategic alliances promote effective disaster response, and they work even better when sound relationships and trust have been established prior to an actual disaster. Indeed, regional cooperation and coordination are essential when facing the multifaceted issues that arise during and after an extreme event. PReP seeks to enhance sustainability and continuity by strengthening local plans and capabilities.

Participation in PReP is totally voluntary and separate from any regulatory requirements. Regulatory agencies and aid organizations may be invited to participate in training or to observe exercises, but such invitations will only be made with the consent of the airport or seaport being served.

PReP Goals, Priorities, and Objectives



The goals of the Port Resiliency Program are to

- protect life, property, and economic vitality;
- facilitate rapid import and distribution of humanitarian aid and other goods following a crisis;
- support airports and seaports in improving resiliency through cost-effective, relatively easy-to-implement methods; and
- enhance regional and national resiliency by protecting transportation infrastructure.

The priorities of the Port Resiliency Program are to

- ensure that disaster risk reduction is a port priority with a strong basis for implementation;
- identify, assess, and monitor disaster risks and improve early warning systems;

⁴ Babun, T. A., Jr., & Smith, J. F. (2013). Port Resiliency Program (PReP) Strategic Plan



- use knowledge, innovation, and education to build a culture of safety and resiliency at all levels;
- reduce consequences from underlying risk factors; and
- strengthen disaster preparedness for effective response at all levels.

The objectives of the Port Resiliency Program are to

- support airports and seaports in improving disaster preparedness;
- speed the post-disaster recovery of airports and seaports;
- help airports and seaports coordinate resumption of commercial service with extraordinary relief activities during disaster response and recovery;
- improve interagency coordination and communication; and
- promote mutual aid among airports and airports, seaports and seaports, and airports and seaports.

Process

Ports will be given the opportunity to request assistance through PReP. Once a port initiates contact, the following four-phase process will be implemented:

PReP 2.0 for Airports		
Phase	Purpose	Tasks
I	Set-Up and Data Collection for Self-Assessment	Request for services from airport to PReP First conference call Agreement completed Data collection packet with checklists, inventory forms, and questionnaires provided to airport via internet Airport submits data to PReP
II	Cooperative Data Analysis and Gap Identification to Complete Self-Assessment	Analysis of airport's data by PReP's airport and emergency management professionals to determine Current preparedness state of airport (baseline) Gaps in preparedness Training needs to fill gaps or enhance preparedness Second conference call to confirm or adjust results of analysis
III	Online Training and Table Top Exercise Planning	Online training classes matching needs identified in Phase II Feedback on training Scenario and date for Phase IV Table Top Exercise
IV	Table Top Exercise	Table Top Exercise to evaluate Preparedness Mutual aid and interagency relationships Effectiveness of training After Action Review of TTX and PReP process Airport's own action list of follow-up items
V	After Care	Self-reporting of progress on action list Opportunity to mentor other airports Opportunity of join PReP's cadre of airport and emergency management professionals Dissemination of Lessons Learned to other airports



Table Top Exercise (TTX)

The culminating event in PReP is the on-site table top exercise (TTX). For each airport or seaport, an exercise will be designed by the PReP Team to test the effectiveness of the port's resiliency and preparedness efforts and the effectiveness of the self-assessment and learning process provided through PReP. The scenario for the TTX will always be developed in collaboration with the port in order to address the highest risks or combination of risks that face the airport.

Stakeholders

The main stakeholders of PReP are threefold:

- 1) ports, their tenants, mutual aid partners, and communities;
- 2) academic institutions and universities; and
- 3) acting partners, organizations involved in providing the materials and curriculum, local and national governments, international and regional organizations, and non-governmental organizations.

Specific stakeholders will be identified by each airport and seaport.

Benefits to the Port and Local Community

Completing the PReP and submitting materials for review will result in several beneficial outcomes. First, participants at the local level will realize a dramatic increase in formalized knowledge regarding continuity and preparedness. Through this program, the ports follow a maturity model for preparedness, which brings a discipline to the planning process that ensures effective and efficient operations during an emergency situation.

In addition, the ports and the stakeholders they interact with will benefit by more fully understanding their critical roles during a disaster. All stakeholders that interact with ports--that is, vendors, users, and the community at large--will benefit from PReP as they learn to recognize and share interdependencies in mission critical functions.

Furthermore, ports completing the initial review process will be granted access to a *Critical Supplies Container* (CSC). The CSC will be stocked with a customized set of essential items to support staff and their families and ensure continuity of operations. When staff are assured their own and their families' basic needs are covered, they can devote their full attention to addressing the needs of the port. The CSC resides at the port itself, and its content is identified through PReP with the goal of maximizing resiliency in the event of an emergency. The CSC ensures a more heightened level of port readiness, allowing for rapid response and recovery efforts, thereby increasing the port's availability during disasters.

Bottom line: PReP's greatest benefit is the enhancement of existing relationships between ports and their national and local emergency response partners and the development of new relationships.

The PReP Team

Responding to an urgent call for action in the wake of recent disasters, Americas Relief Team (ART) initiated and manages the PReP program. FedEx, Miami International Airport (MIA), and Smith-Woolwine Associates complete the PReP Team. Increasingly, subject matter experts from host airports have joined the team as workshop instructors and panel moderators.

ART has the experience and expertise to bring together large and small entities in the private sector, public agencies on the ground, and public agencies in the U.S. to harness the strengths of each organization and create a synergy of effective approaches for enhancing port resiliency.

The training team has completed PReP resiliency training workshops at



- Las Americas Airport in Santo Domingo in the Dominican Republic (2013)
- The USAID LAC Region Airport Resiliency Workshop in Miami (2014)
- International Hurricane Conference X (2015) and XI (2016) and Merida International Airport, Merida, Yucatan, Mexico (2016)
- Juan Santamaria International Airport and Liberia International Airport, workshop held in San Jose, Costa Rica (2015)
- Norman Manley International Airport (Kingston), Sangster International Airport (Montego Bay), and Ian Fleming International Airport (Ocho Rios), workshop held in Kingston, Jamaica (2016)
- One yet-to-be-identified LAC region airport in 2017

Each workshop gathered airport managers, the local emergency response stakeholders, responders, military, and government personnel in a tabletop exercise (TTX). At the close of each workshop, PReP as a program and the execution of the workshop itself are evaluated, and the evaluation results are included in the final reports. The next enhancement of PReP will be a program for downstream post-evaluation to determine the program's medium-term and long-term effectiveness, extract lessons learned, and identify areas for improvement.

Thus far, PReP has served seven international airports in the LAC region, more than 400 airport personnel and members of their partner agencies, and three international conferences.

Bottom line: PReP workshops are portable, well-received, and are viewed by participants as highly valuable.

PReP Today

The PReP Team today is a strong **public-private partnership** comprised of the following participants:

- *Private Non-Profit Organization:* Americas Relief Team
- *Private Corporations:* FedEx Corporation; Smith-Woolwine Associates
- *Public Agencies:* Miami-Dade County (Miami International Airport; Miami-Dade Fire Rescue)
- *Observers and Advisors:* U.S. Government (Southern Command [SOUTHCOM]; Federal Aviation Administration (FAA); State Department; Department of Commerce; U.S. Trade and Development Agency
- *Trade Associations and Organizations:* Airports Council International; Airports Council International—Latin America and Caribbean; Latin American and Caribbean Air Transport Association (ALTA)

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