



Resiliency and
Business Innovation

Building a Resilient Business Community: [SEP]

Before, During, and After a Disaster

A Course for Support Practitioners

Module B: Strategic Policy and Analysis Concepts

September 22, 2020 6:00pm-8:00pm

Linton Wells II, J.P. Auffret, Robert Rogers



Puerto Rico
Science, Technology
& Research Trust



Center for Resilient and
Sustainable Communities

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Overview for Entrepreneurs Support Practitioners' Course: Helping Business Owners/Operators Get the Most from Their Course



Resiliency and
Business Innovation

Sponsored by: U.S. Economic Development Administration

Introductions



Lucy Crespo, CEO



Puerto Rico
Science, Technology
& Research Trust



Annie Mustafá Ramos



Resiliency and
Business Innovation

A program of the:



Puerto Rico
Science, Technology
& Research Trust



Gilberto Guevara



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Science, Technology
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Gloria Viscasillas Aponte

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Course Outline

Module A Overview and Introduction (Tue, Sep 15, 6:00-8:00)

Lesson A: Puerto Rico, COVID-19 and Resilience; Helping Business Owners/Operators Get the Most from Their Course; Introduction to Resilience

Lesson 1: Introduction to Workbook & Facilitators, Baseline Survey

Module B Strategic Policy and Analysis Concepts (Tue, Sep 22, 6:00-8:00)

Lesson B: Strategy and Policy Aspects of Puerto Rican Resilience

Lesson 2: 5 Keys to Networking; Protection of People, Data, and Operations

Module C Digital Puerto Rico, Key Asset Protection (Tue, Sep 29, 6:00-8:00)

Lesson C: Digital Puerto Rico, Resiliency Innovation Network,

Lesson 3: Digital Marketing for Resilience, Protection of Inventory, Equipment, and Buildings

Module D Integration and Wrap Up (Tue, Oct 6, 6:00-8:00)

Lesson D: Personal & Business Resilience, Micro-manufacture (M2), Advanced Agriculture, Building a Resilient Business, READI Framework

Lesson 4: Keys to Recovering Better, Complete Workbooks, Quiz, Wrap-up

Agenda for Module B

6:00 PM -7:10 PM Strategy and Policy Aspects of Puerto Rican Resilience

Puerto Rico, A Snapshot

External Forces

- **Natural Disasters & Climate Change**
- **Age of Accelerations” and 4th Industrial Revolution**

SWOT Analysis

Innovation and Entrepreneurship

Observations for Puerto Rico from Estonia, Denmark and Singapore

Post-virus “new un-normal”-- opportunities for Puerto Rico

7:10 PM-7:15 PM Break

7:15 PM -8:00 PM Lesson 2: 5 Keys to Networking; Protection of People, Data, and Operations



PHOTO COURTESY OF U.S. CUSTOMS & BORDER PATROL

Building a Resilient Business: Before, During, and After a Disaster

Strategy and Policy Aspects of Puerto Rican Resilience



Puerto Rico
Science, Technology
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Resiliency and
Business Innovation



Center for Resilient and
Sustainable Communities

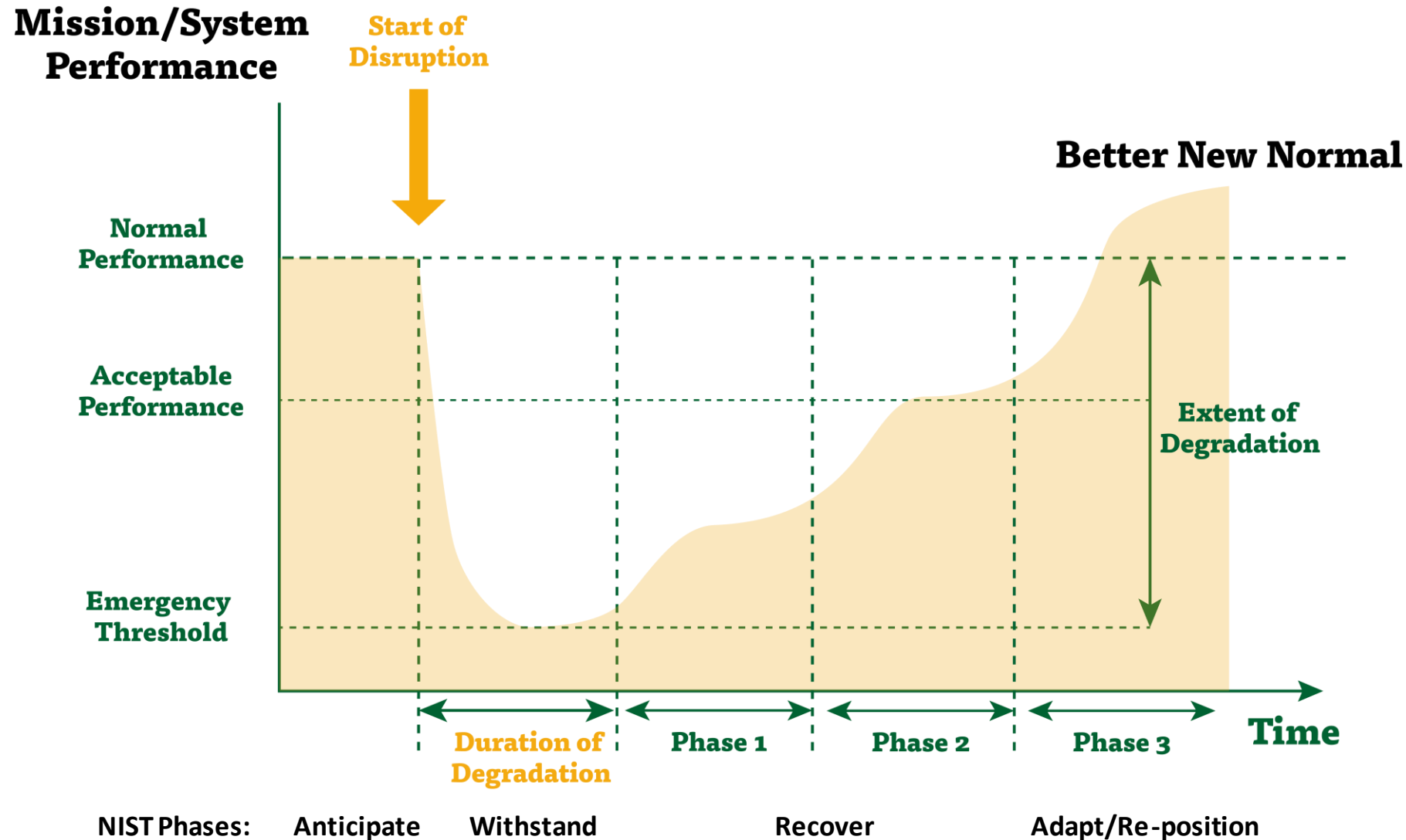
Organized by the Puerto Rico Science, Technology & Research Trust

Sponsored by: U.S. Economic Development Administration

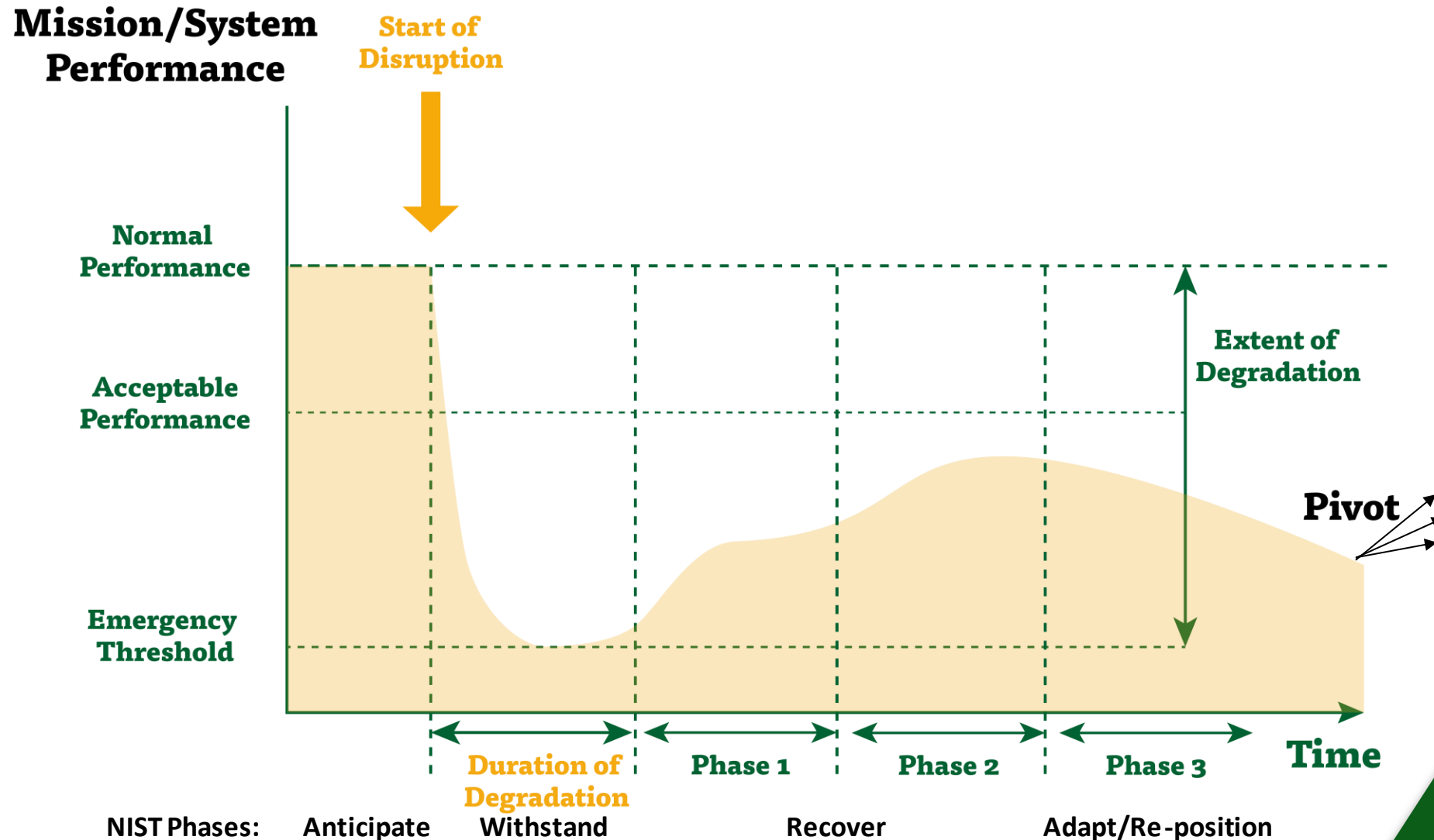
Sept 22, 2020, 6:00 PM- 7:10 PM

*C-RASC consists of researchers from George Mason's Volgenau School of Engineering, the School of Business, the Schar School of Policy and Government, the Jimmy and Rosalynn Carter School of Peace and Conflict Resolution, the College of Science, and the College of Health and Human Services

Resilience is NOT Just Bouncing Back. It's Being Prepared to Bounce Forward Better



Sometimes You Can't Bounce Forward Better When to Pivot?





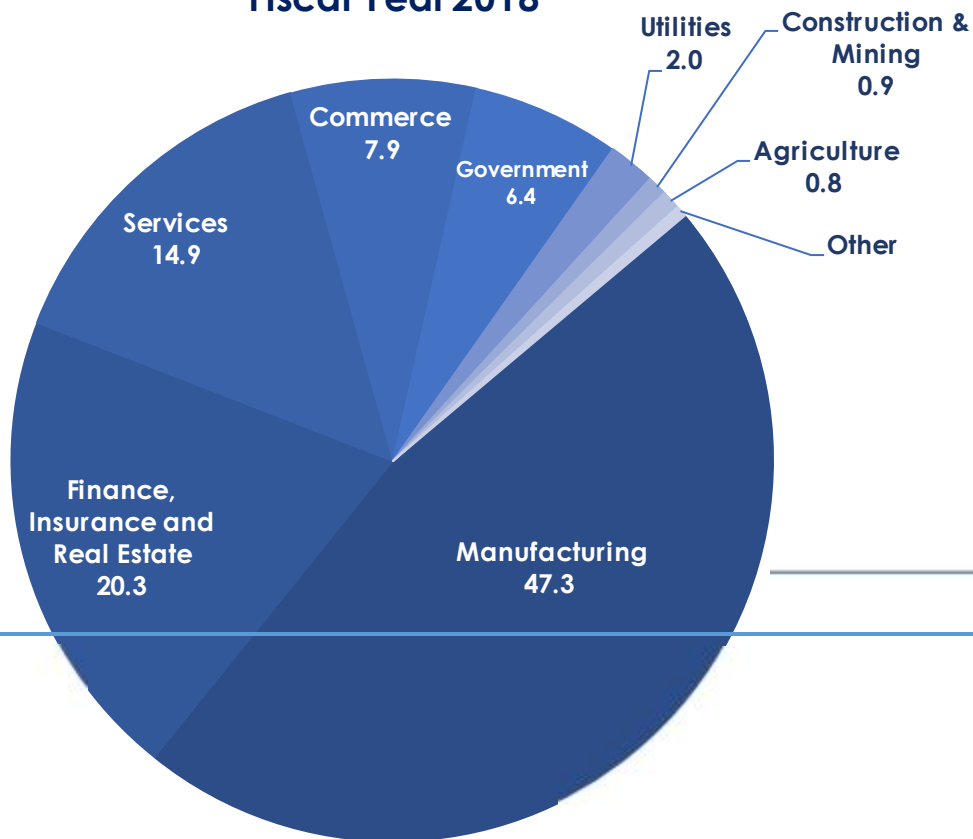
Puerto Rico: A Snapshot

Our Economy



$$\text{GDP} = \text{Personal consumption expenditure} + \text{Government consumption expenditure} + \text{Gross public* domestic investment} + \text{Gross private domestic investment} + (\text{Sales Exports} - \text{Purchases Imports})$$

Gross Domestic Product Share by
Main Economic Sector
Fiscal Year 2018



GNP \$68.0 billion
GDP \$101.1 billion
GDP Per Capita \$31,022
Exports Value \$60.6 billion
Imports Value \$46.5 billion

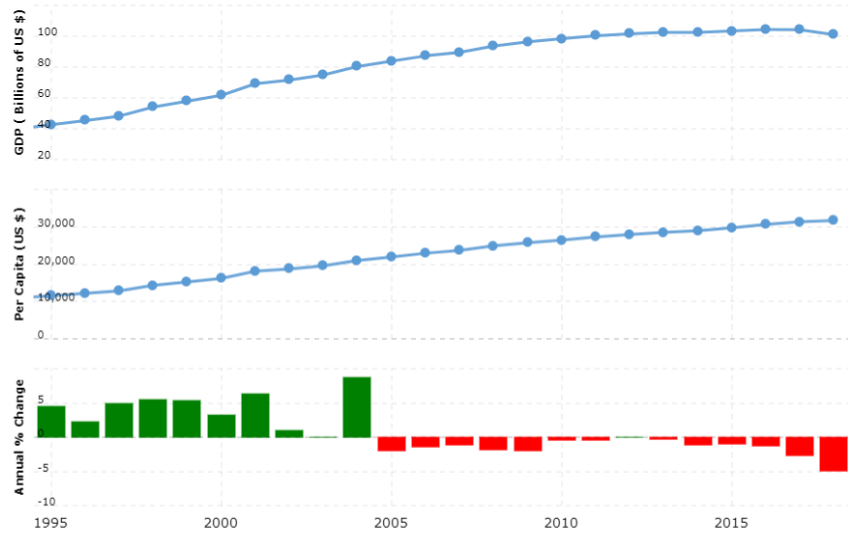
TOURISM: 2.0% of GDP and estimated to 7.4%* in 2018 as a total contribution to the Economy GDP (including wider effects from investment, the supply chain and induced income impacts).

*calculated by the World Travel & Tourism Council (WTC)

Contribution to Total MFG GDP FY 2018

36.3% Pharmaceutical Industry (includes Bio-Pharma)
22.0% Computer and Electronics
26.9% Basic Chemicals
5.4% Medical Devices
2.5% Beverages & Tobacco
2.5% Food
1.5% Electrical Equipment & Components
3.0% Others

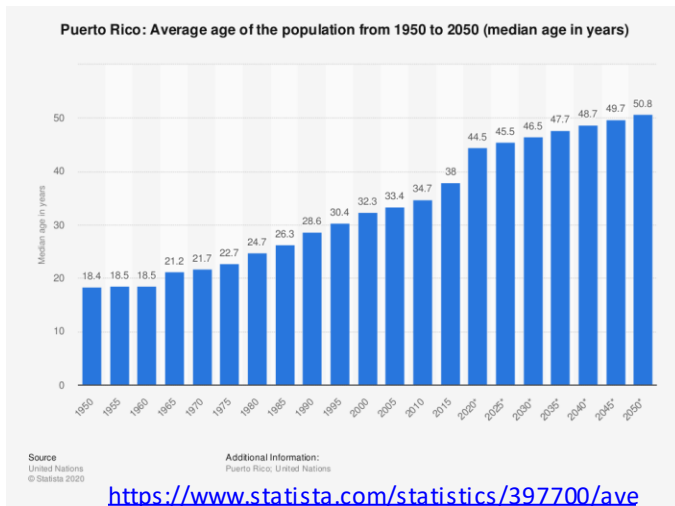
GDP, GDP p/c, Growth Rate



<https://www.macrotrends.net/countries/PRI/puerto-rico/gdp-gross-domestic-product> Puerto Rico GDP 1960-2020 Data Source: World Bank

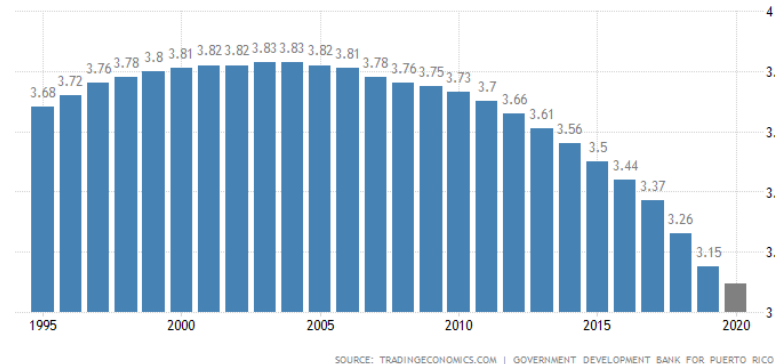
Trends 1995-2020

Population Avg Age



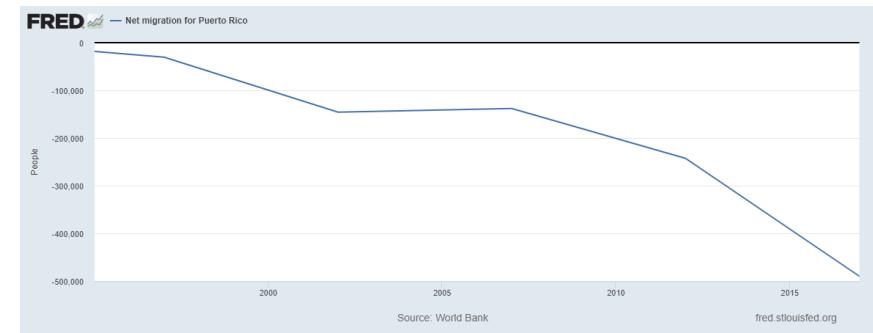
<https://www.statista.com/statistics/397700/average-age-of-the-population-in-puerto-rico/>

Population



<https://tradingeconomics.com/puerto-rico/population>

Cumulative Net Migration



<https://fred.stlouisfed.org/series/SMPOPNETMPRI>



External Forces (1)

Natural Disasters & Climate Change

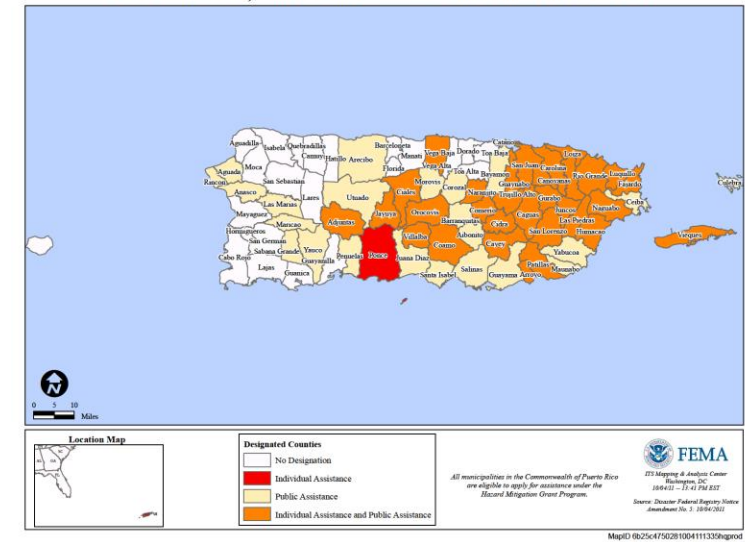
Natural Disasters 2004-2020

FEMA-1552-DR, Puerto Rico
Disaster Declaration as of 10/19/2004

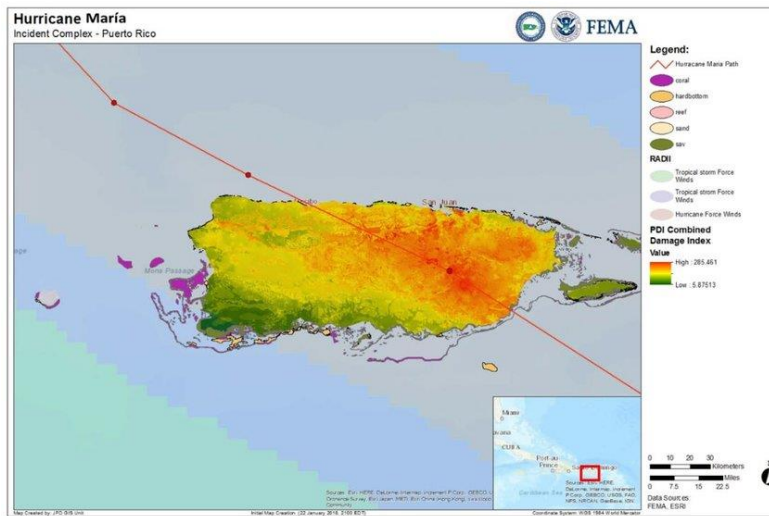


Tropical Storm Jeanne Sep 2004

FEMA-4017-DR, Puerto Rico Disaster Declaration as of 10/04/2011

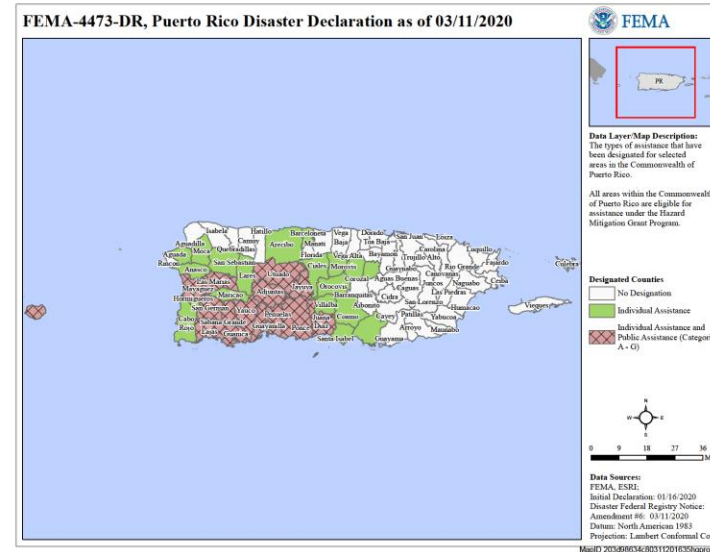


Hurricane Irene Aug 2011



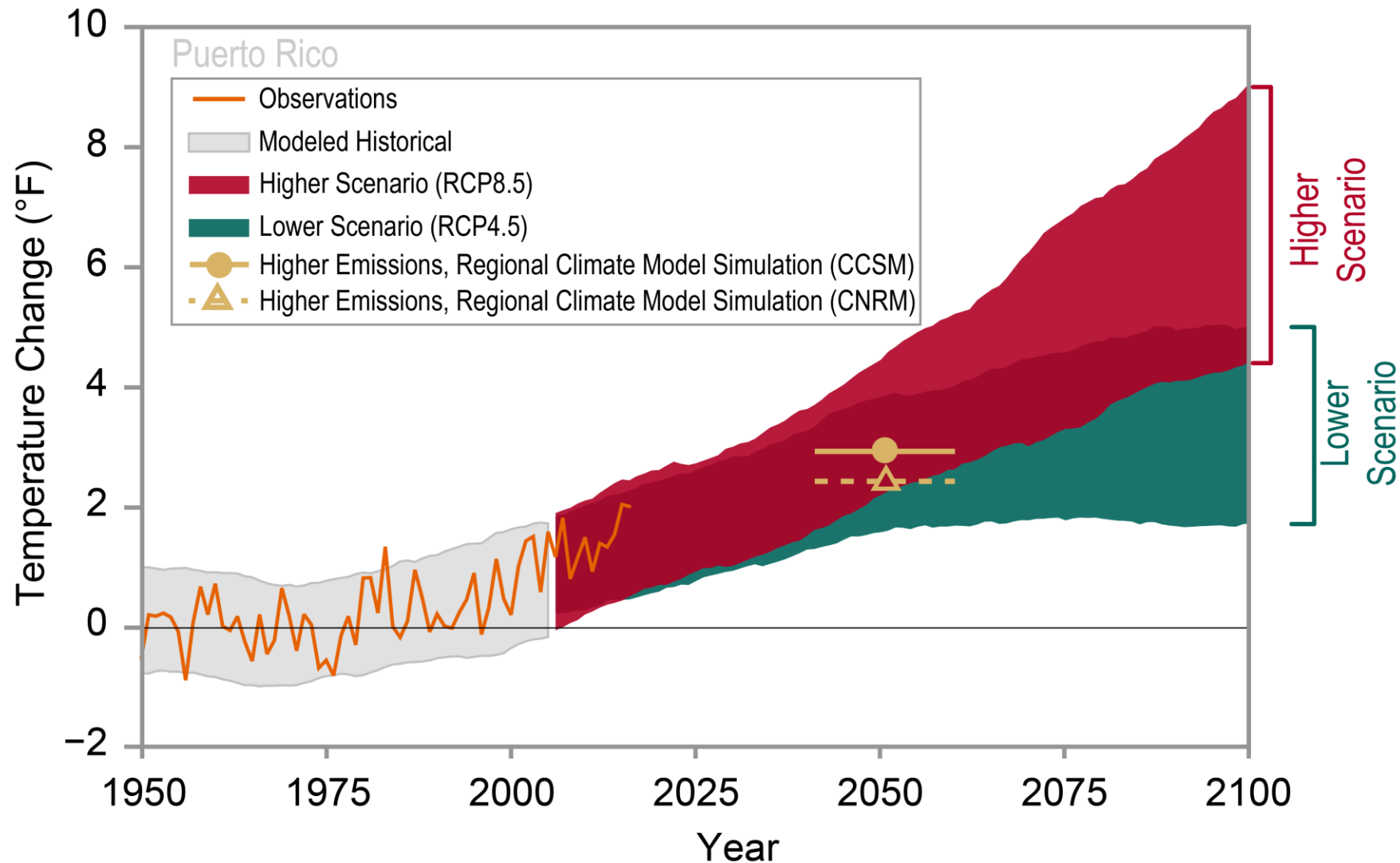
Hurricane Maria Sep 2017

FEMA-4473-DR, Puerto Rico Disaster Declaration as of 03/11/2020

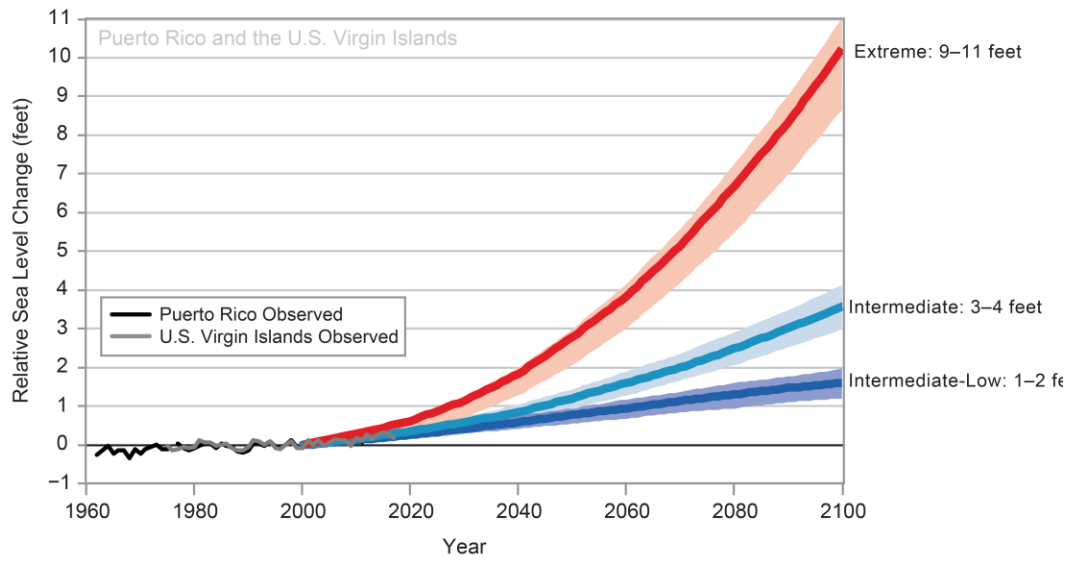


Earthquakes, as of Mar 2020

Temperature Change 1950-2100



Global Models Predict 1.5° to 4° F by 2050



Sea Level Rise Predictions 2000-2100

Effects of Sea Level Rise



San Juan, 1 foot



San Juan, 3 feet



San Juan, high tide flooding

Sea Level Rise Projections for Puerto Rico by 2050: 0.8 feet, 1.2 feet, 2.8 feet

Under Intermediate-Low, Intermediate, and Extreme Scenarios

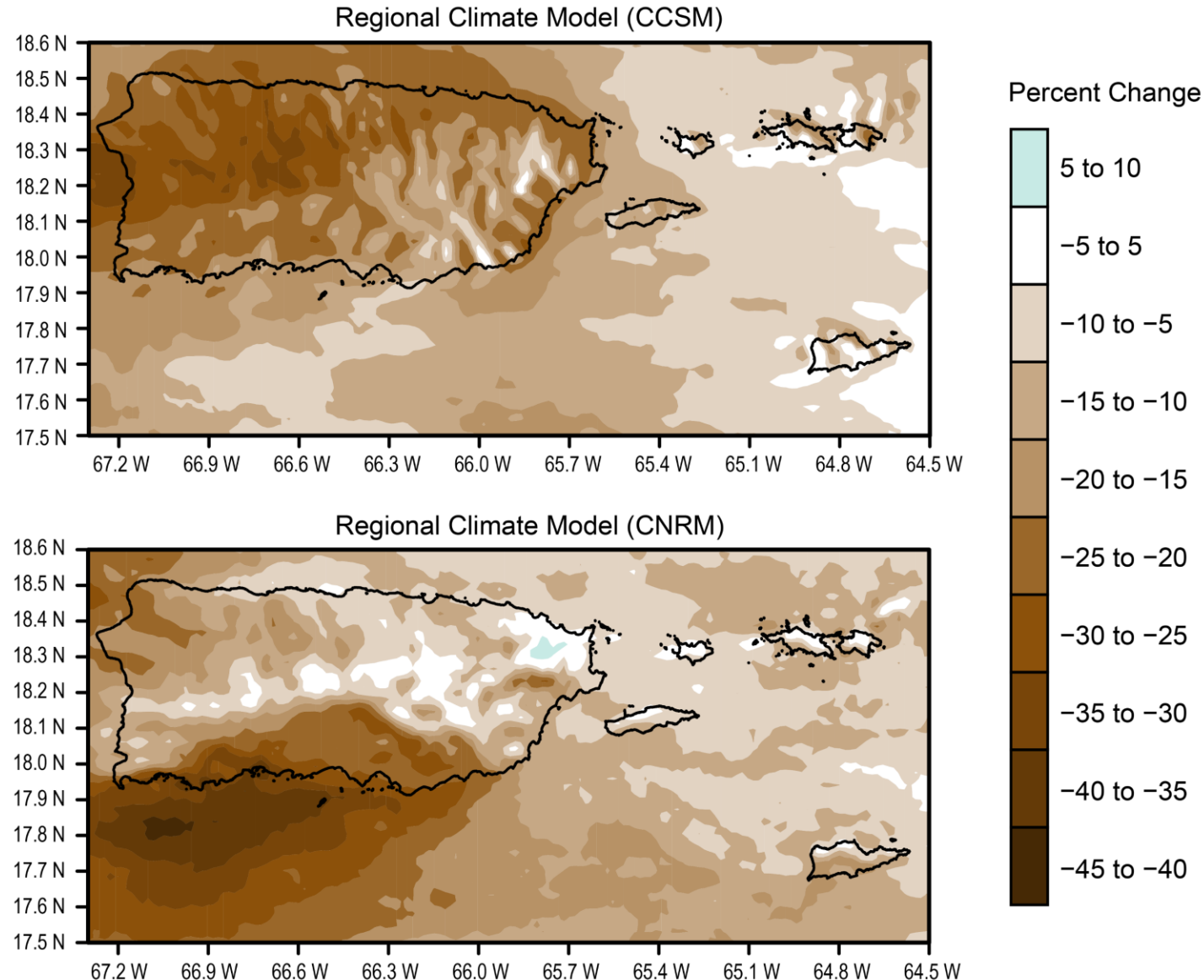
Drop in Precipitation Forecast

Major reservoirs in Puerto Rico could enter permanent supply deficit as early as 2025 under a higher emissions scenario and by 2040 under a lower emissions scenario

Also longer dry seasons and shorter, but wetter wet seasons

Recommendations:

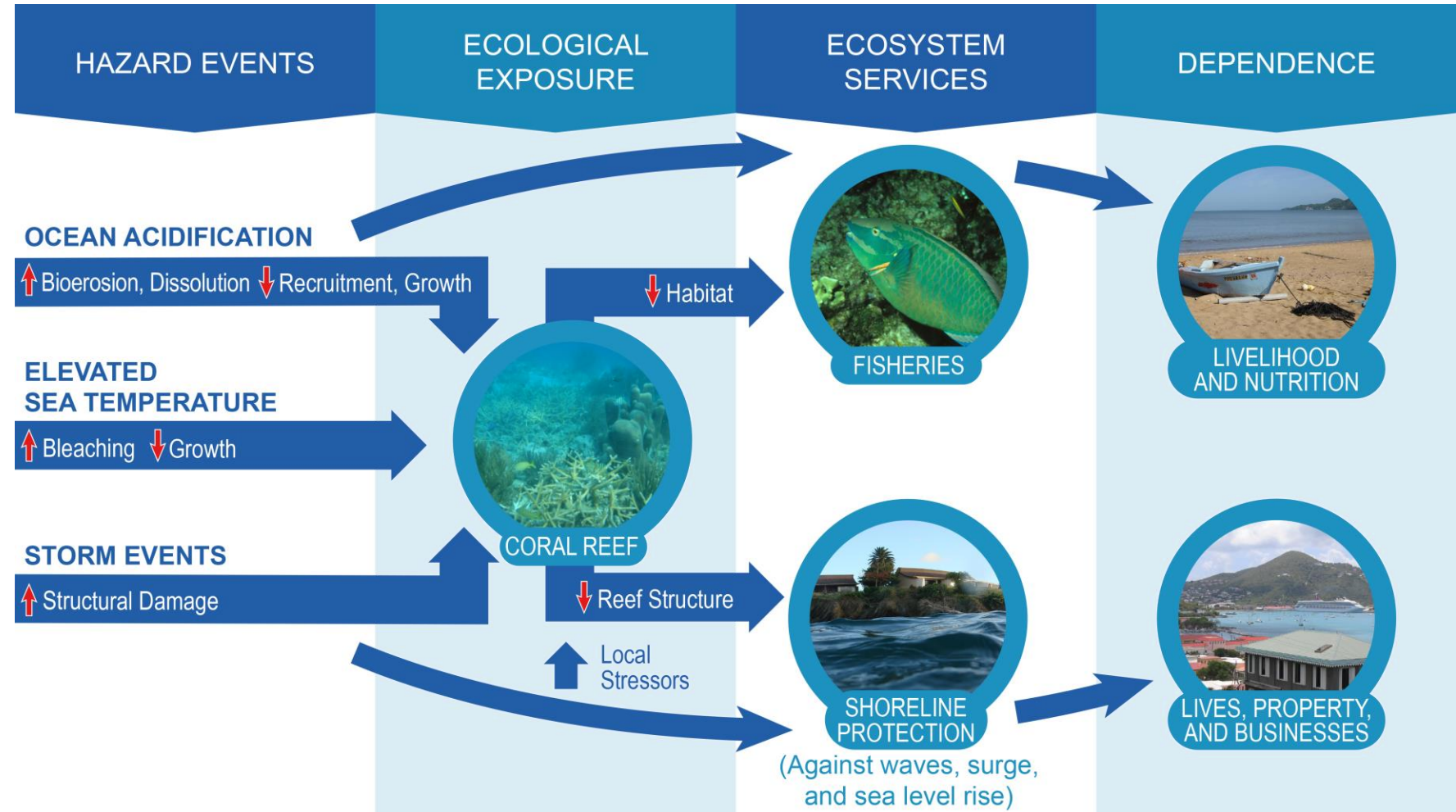
- Fresh water harvesting
- Increase agricultural water use efficiency



Climate Change Impacts on Coral Reef Ecosystems and Societal Implications

Future impacts on island economies due to:

- changes in key fisheries
- declines in natural shoreline protection
- loss of tourism



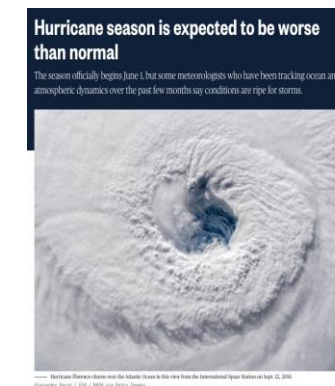
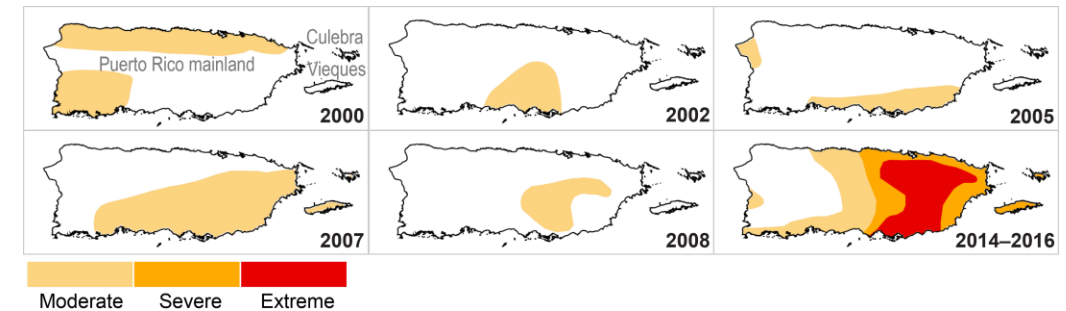
Future Climate Change Relevant to Regional Risks

Global climate model predictions uncertain, but they suggest:

- Increased frequency of strong hurricanes (Categories 4 and 5) in Atlantic Basin, including Caribbean
- Sea level rise will have particular impacts when combined with high tide flooding
- Increase in both drought intensity and frequency for Puerto Rico due to increases in both average and extreme temperatures and decreases in precipitation

Resilience capacity can be increased through:

- Better data collection of extreme events, and cost analysis
- Application of new technologies
- Collaborative action
 - With other Caribbean countries, e.g. via
 - Caribbean Community Climate Change Centre (5C) in Belize
 - Caribbean Institute for Metrology and Hydrology (CIMH)
 - With US Federal agencies, academics, and climate experts



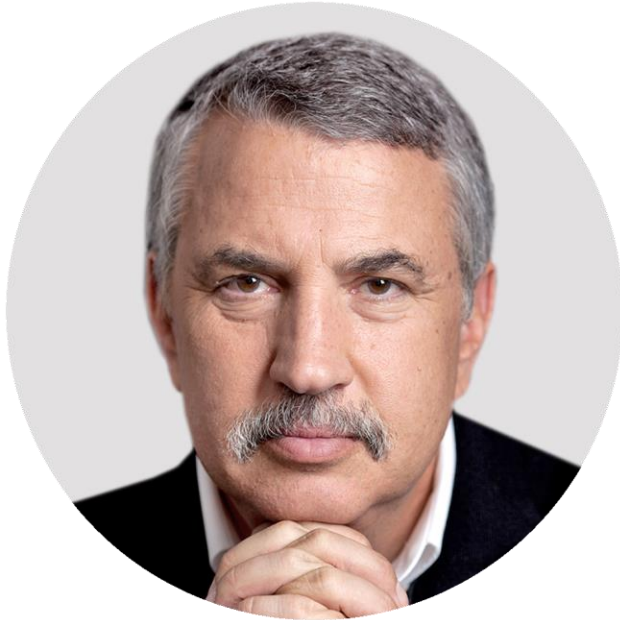


External Forces (2)

**Age of Accelerations and
the 4th Industrial Revolution**

Age of Accelerations

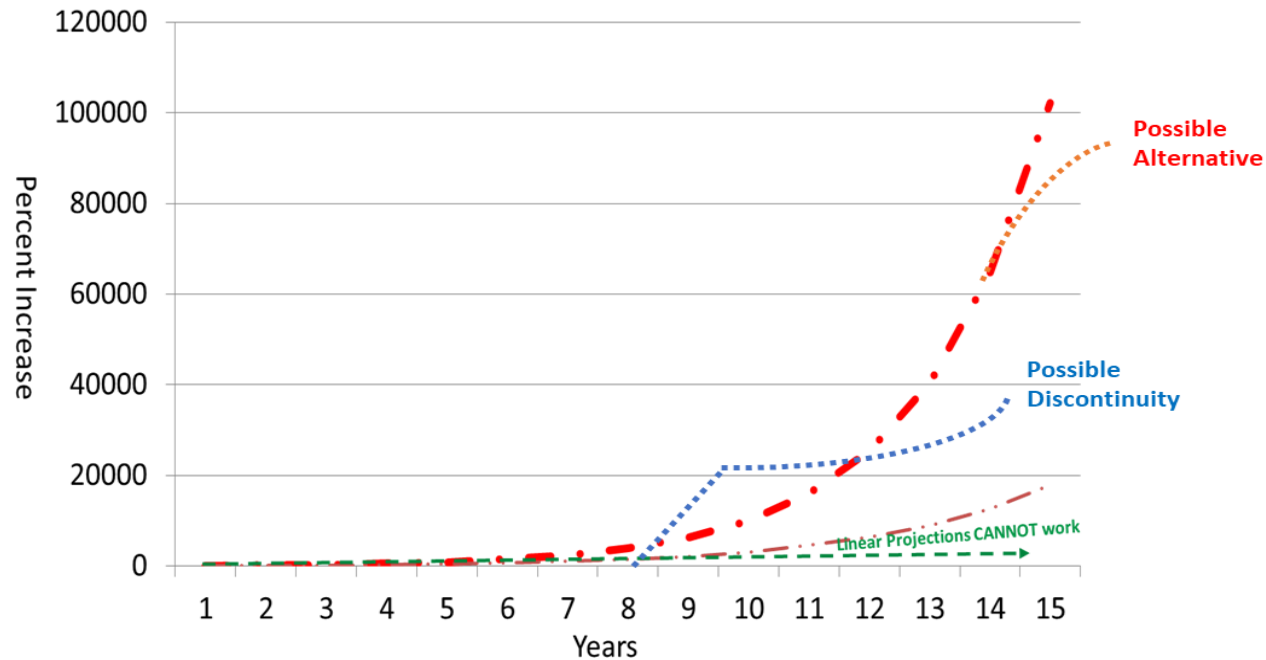
Thomas L. Friedman



- Accelerating political, social, economic changes
 - Climate change and pandemics cross borders
 - Pace of tech change
 - Globalization vs. de-globalization
- From interconnected to interdependent
- Deep impacts on people
- Left-right political divisions no longer meaningful
- How to design socio-political-economic governance for Fused, Fast and Deep world?

Velocity of One Aspect of Tech Change

Growth in Computing Power per Unit Cost



Capability doubles every 18 months — · — · Capability doubles every 24 months — · · — ·

If a factor, e.g. computing power/unit cost, doubles every 18 mo, 5-yr increase is 900%, 10-yr is 10,000%, 15-yr is ~100,000%

Biotech even faster, robotics ubiquitous, nano poised breakout, energy impacts are global

- Think BRINE (bio-robo-info-nano-energy) + Additive Manufacturing & AI
- Interactions complicate things
- Linear projections CAN'T work

Fourth Industrial Revolution



Dr. Klaus Schwab, WEF

- **Accelerating tech change**
- **Blurring lines between physical, digital and biological spheres**
- **Interconnected technical & social impacts**
- **Rising geopolitical risk and changing markets**

Four Industrial Revolutions

1780s

1870s

1969

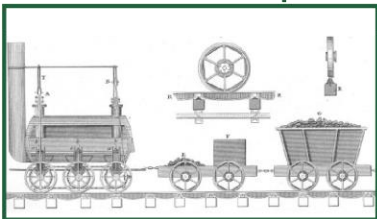
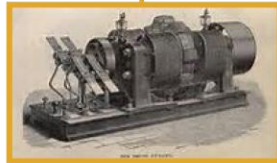
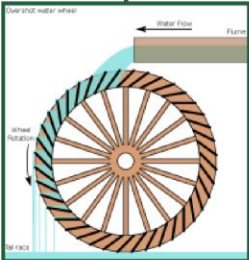
JUST BEGINNING

1ST INDUSTRIAL REVOLUTION

2ND INDUSTRIAL REVOLUTION

3RD INDUSTRIAL REVOLUTION

4TH INDUSTRIAL REVOLUTION



fuse technologies
“blur lines between
physical, digital
and biological
spheres”

Source: Klaus Schwab, “The Fourth Industrial Revolution: what it means, how to respond,” 14 January 2016
<http://www.weforum.org/agenda/2016/01/>, accessed February 16, 2016

4th Industrial Revolution (4th IR)

Key distinctions between 3rd & 4th revolutions:

Velocity of change, scope, and systems-wide impact

- **Massively disruptive**, and accelerating
- **Transforming management**, as well as production and distribution
- Can provide very **important collective benefits** to society, but also **negatively affect many individuals**

Responses must engage public-private, whole-of-society, and trans-national stakeholders

- In **comprehensive, integrated** ways

Converging 4th IR Trends (1)

Trends **can't be controlled by governments, only influenced**

4th IR will affect business, government, and people

- Now governing by “**systems of public policy and decision-making [that] evolved alongside 2nd IR**”

Challenges of **misinformation & disinformation**



Converging 4th IR Trends (2)

Trends support:

- **Empowerment** of individuals and non-state actors
 - **More people part of conversations about their future**

Profound impact on people

- Change “**not only what we do, but also who we are**”
- Privacy issues vs. biotech and AI revolutions
 - **Pushing back thresholds of life span, health, cognition, and capabilities**
 - **will redefine moral and ethical boundaries**



Benefits & Opportunities for Puerto Rico



Accelerating, converging technologies

- Increased overall productivity
 - Automation beneficial to aging, declining workforce
- Physical, digital, biological worlds play to Puerto Rico's strengths
- Gaming industry now much larger than movies

Also accelerate de-globalization of supply chains*

- **Local production** of manufacturing and services
 - But, reduced labor costs through robots/co-bots--reshoring
- Installed **new energy production** is now dominated by **local** sources -- solar, wind, hydro, and fracked natural gas.
- Explosion of productivity in **urban and indoor agriculture**

*TX Hammes, "3-D Printing Will Disrupt the World in Ways We Can Barely Imagine,"
<http://warontherocks.com/2015/12/3-d-printing-will-disrupt-the-world-in-ways-we-can-barely-imagine/>

Stresses for Puerto Rico

- Potential job loss
 - McKinsey (MGI) 2017 study:
 - **“about 60% of all occupations have at least 30% of constituent activities that could be automated.”** [with present tech]
 - Need human-machine teaming
 - **Service jobs particularly vulnerable** to automation
- Increase in migration pressures
- In many places high potential for **domestic unrest, scapegoat-finding, radical nationalism and protectionism**
- **Potential balkanization of Internet**



Threats to existing security structures

- **Likely center of gravity of future conflicts: resilience of populations of engaged nations**
 - Can challenge social compacts



SWOT Analysis for Puerto Rico

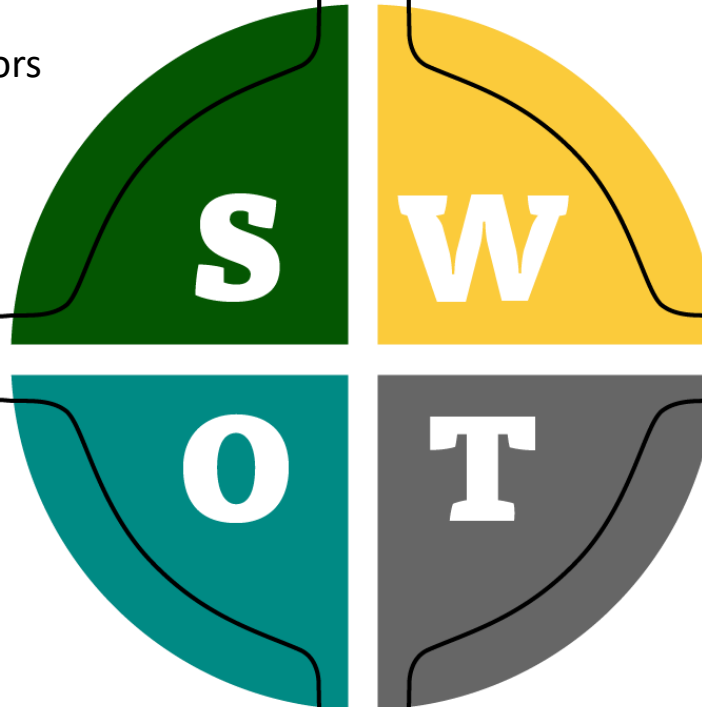
In the new post-virus “un-normal”

STRENGTHS

- Things your company does well
- Qualities separating you from competitors
- Internal resources: HR, morale, etc
- Tangible assets: IP, patents, etc.

WEAKNESSES

- Things your company lacks
- Things competitors do better
- Unclear selling proposition
- Resource limitations



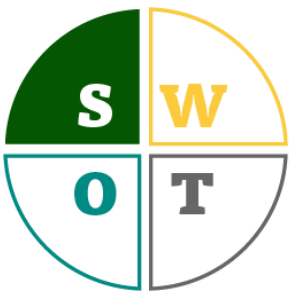
- Under-served markets
- Areas with few competitors
- Press/media coverage
- Emergency need for your products/svcs

OPPORTUNITIES

- Emerging competitors
- Negative press/media coverage
- Changing customer attitudes
- Changing regulatory environment

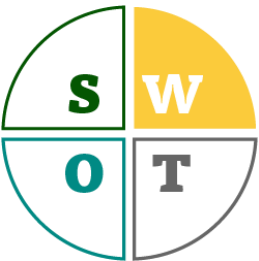
THREATS

Contribute Inputs to Business Owner/Operators' Resilience Plans



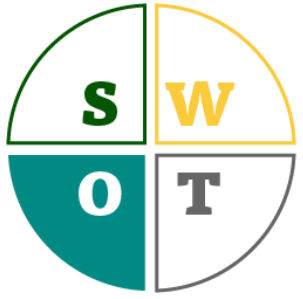
STRENGTHS

- **Inherent assets**
 - Diverse activities: History, architecture, culture, cuisine, rainforest, beaches
 - Location
- **Qualities separating you from competitors**
 - U.S. jurisdiction, goods “Made in U.S.A.”
 - U.S. accounting and licensing processes
 - No U.S. passport needed
 - Strategic sectors: (1) Adv Manufacturing, (2) IT, (3) Services for export, (4) agro industries, (5) ocean economy, (6) bio economy, (7) logistics, (8) visitors’ economy
- **Internal resources**
 - Bi-lingual, educated workforce
 - Strong higher education system
- **Tangible assets**
 - Manufacturing base in pharma, computers & electronics, chemicals, medical devices
- **Lower tax rates**



WEAKNESSES

- Power, comms & other infrastructures are unstable and vulnerable
- Many small businesses can't shift to remote ops
- Extended brain drain
- Unstable politics—"long term" is 4 years
 - Strategic plans not being executed
- Unpredictable regulatory environment
- Regulatory rules and taxes increase production & shipping costs
 - Bureaucracy
- Resource limitations—debt burden and financial controls
 - Uncertain flow of recovery funds
 - Good governance will be essential
 - No room to squander funds



OPPORTUNITIES

- Entering new markets via bi-lateral or multi-lateral agreements
- Manufacturing in pharma, computers & electronics, medical devices
- Closed environment agriculture – also, NO WINTER
- De-globalization of supply chains
- Local production of energy
- Opportunities for remote work
 - Bring back, or leverage, diaspora
 - Stable power, comms and internet are key
- Trans-generational opportunities



THREATS

- **Recurring, diverse natural disasters**
 - **Weak critical infrastructures**
 - **Inconsistent preparations—focus of this course**
- **Emerging competitors—varies by sector**
- **Contradictory press/media coverage—need to tell story better**
- **Continuing brain drain, population loss**
- **Global economy restructuring post-COVID-19:**
 - **Will industries like tourism and hospitality recover? Where or where not?**
 - **Availability of reconstruction funds**

Innovation and Entrepreneurship

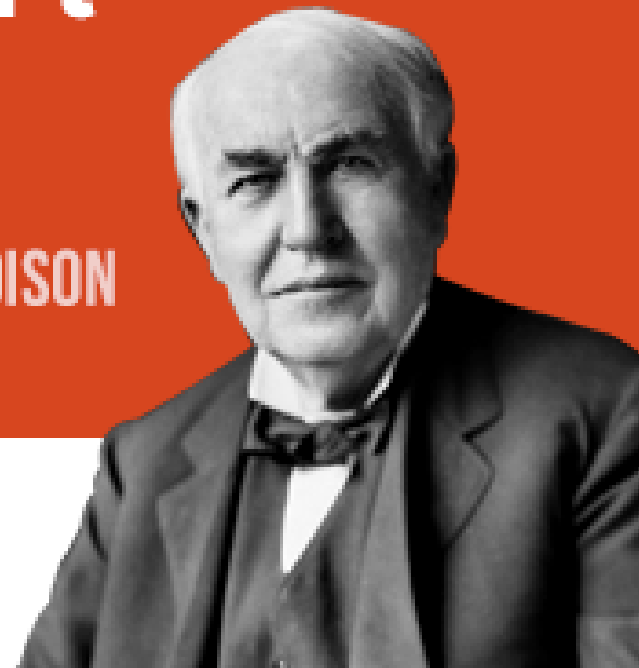


**"We have run out of money,
now we've got to think."**

—Sir Ernest Rutherford

**“I have not failed.
I’ve just found
10,000 ways
that won’t
work.”**

- THOMAS A. EDISON



Due.com

First
Atttempt at
Iterative
Learning

Iterative Approaches

- **Interdependencies often are complex (or “wicked”) problems**
 - Problem will change as fixes are applied
 - Iterative solutions
- **Document going-in assumptions and articulate them**
- **Schedule reviews**
 - Get straight feedback
 - If plan is converging to desired outcome, continue
 - If not, review assumptions and adjust
- **Recognize leadership challenges, up and down chain**
 - **MUST** get buy-in up front from bosses and your team
 - Changes based on assessments are strengths, not weakness
- **Form complex, adaptive coalitions with outside organizations**



A silhouette of a person in a running pose, facing right, against a vibrant sunset sky with orange and yellow clouds. The person is positioned on the left side of the slide, with their right leg forward and arms pumping. The background is a large, curved white shape that frames the text on the right.

Overcoming Obstacles

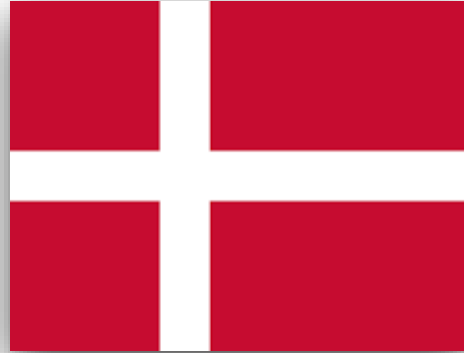
- Joplin, Mo reconstruction model—bottom up, cultural resilience
- Understanding Federal Funding—and the coming drought of it
- Countering mis-information/dis-information
- “Managed retreat” from climate change
- Co-creation of services (public-private)

Small State Examples



Estonia

Population: 1,329,000



Denmark

Population: 5,792,202



Singapore

Population: 5,850,342

Small State Example (e-Estonia)

- “The most advanced digital society in the world” —Wired magazine
- Sustained journey < <https://e-estonia.com/>>
 - 1994 1st draft of “Principles of Estonian Information Policy
 - 2000 e-cabinet meeting
 - 2007 cyber security
 - 2014 e-residency
 - 2019 AI strategy
- **Digital Mode, Seamless State:** Government as a platform
 - Upholding ideals of democracy and personal privacy

Small State Example (Denmark)

- One of world's most digitalised countries
 - Most transactions cashless
 - Almost all interaction with the Danish authorities take place online
- “Digital by default” – paper only as last resort
- High-level broadband penetration
- Data security is high priority
- Set up business online in 24 hours
- Most public health services online
- Digital payments transfers directly to citizens

From information society to network society

<https://denmark.dk/innovation-and-design/digitalisation>

Small State Example (Singapore)



Singapore Smart Nation Key Pillars

- Digital Economy
- Digital Government—
"Digital to the Core, and Serves with Heart"
- Digital Society

People, companies and public agencies

Singapore < <https://www.smartnation.gov.sg/> >

Observations for Puerto Rico from Singapore



Area: 5,328 mi²

Population: 3.194 million



Area: 278.6 mi²

Population: 5.639 million

2018 visit

- Execute 20-to-30-year strategic plans; by a highly effective, non-corrupt government; in a stable political environment

Peter Ho lectures: Of elephants in the room that are black*

- **Foresight**
 - Develop a mindset to deal with unexpected--systematically
 - Black Swans, Black Elephants, Pink Flamingos
- **Whole-of-Society Approach**
- **Need to be able to challenge official views**
- **Avoid blame-seeking culture**
- **Even small city-states can influence, shape, and even create, not just markets, but also their own operating environment**



*From a summary by Bertha Henson, "Of elephants in the room that are black," The Middle Ground, May 20, 2017

A photograph of two white wind turbines with three blades each, set against a vibrant sunset sky with orange, yellow, and blue hues. The turbines are positioned in the foreground, with a line of trees visible at the bottom.

Post-virus “new un-normal” opportunities for Puerto Rico

- Reconstruction funds are flowing: Apply the tools of complexity science to current problems
- Stable, Resilient, Sustainable Power Generation & Distribution
- Synchronized & Coordinated with Interdependent Infrastructures for “Smart Puerto Rico”
 - Transportation (trench fiber and power, anticipate smart roads)
 - Information & Communications Technology – requires stable power, bandwidth, and end-users (rural electric cooperatives)
 - Water and Wastewater
 - Workforce Development—try to attract diaspora
- Biotech revival/health care
- Micro-manufacturing
- Solidify production roles within U.S. as supply chains re-shore
- Caribbean Resilience Hub



5 Keys to Successful Networking

How to Stay Connected in a COVID-19 World

Why is Networking Important?

- Enables you to find resources for your company
- Helps generate customers and leads for contracts
- Helps you identify suppliers, partners, and employees
- Increases your visibility in your profession or local community



What is the best approach to networking?



- Give more than you get
- Be genuine when you connect with people
- You do not need to be an extrovert to network
- TIP: Social Media makes it easier to stay connected!

Are You an Introvert?



YES!
I AM AN
INTROVERT

This Photo by Unknown Author is licensed under CC BY-NC

- It takes skills to become a good networker for both introverts and extroverts
- Key techniques include doing research before the event: Who is speaking? Who is attending? What connections do you want to make at the event?
- Extroverts do not have the advantage over introverts

5 Keys to Successful Networking

- Determine your target audience
- Identify which events or conferences to attend
- Be visible online to help build your network
- Stay connected to your network through social media
- Measure your networking effectiveness



Determine Your Target Audience

- Start with coworkers, friends, neighbors & family
- Join Trade Associations
- Join Chamber of Commerce
- Join Community Organizations
 - Coach Baseball or Softball
 - Volunteer at school activities
- Serve on Community Boards





Business Chambers & Trade Associations

Chambers

- PR Chamber of Commerce
- PR Chamber of the South
- PR Chamber of the West
- PR Manufactures Association

Trade Associations

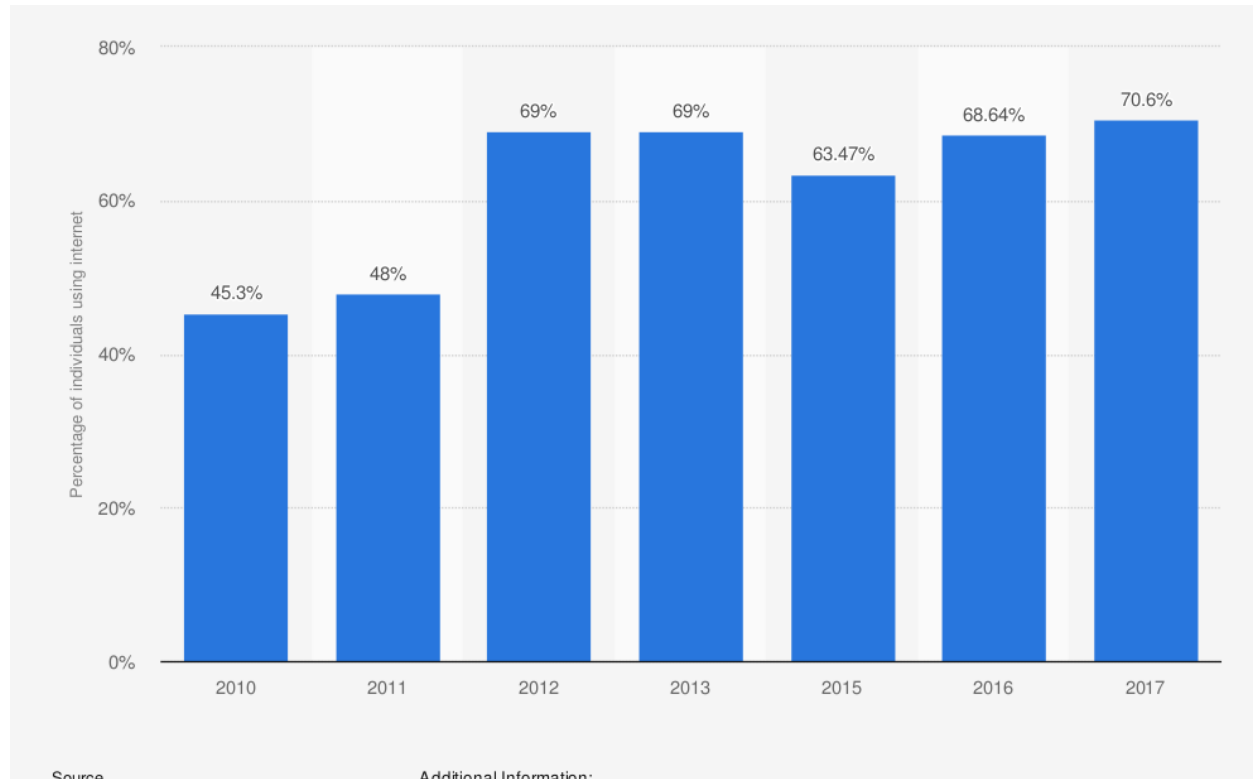
- ASORE (restaurants)
- ACDET (retail)
- MIDA (food distributors)
- PIA (pharmaceuticals)
- CUD (retail)
- Hecho en PR (businesses that produce locally)

Identify which Events or Conferences to Attend

- There are more events than there is time for you to attend
- Choose the events where your target audience meets
- Consider limiting the number of groups you join to concentrate on two to three organizations
- Suggestion - join one of each:
 - Trade Association
 - Business Group
 - Community-Based Organization
- Get involved in committee work!



Be Visible Online to Build Your Network

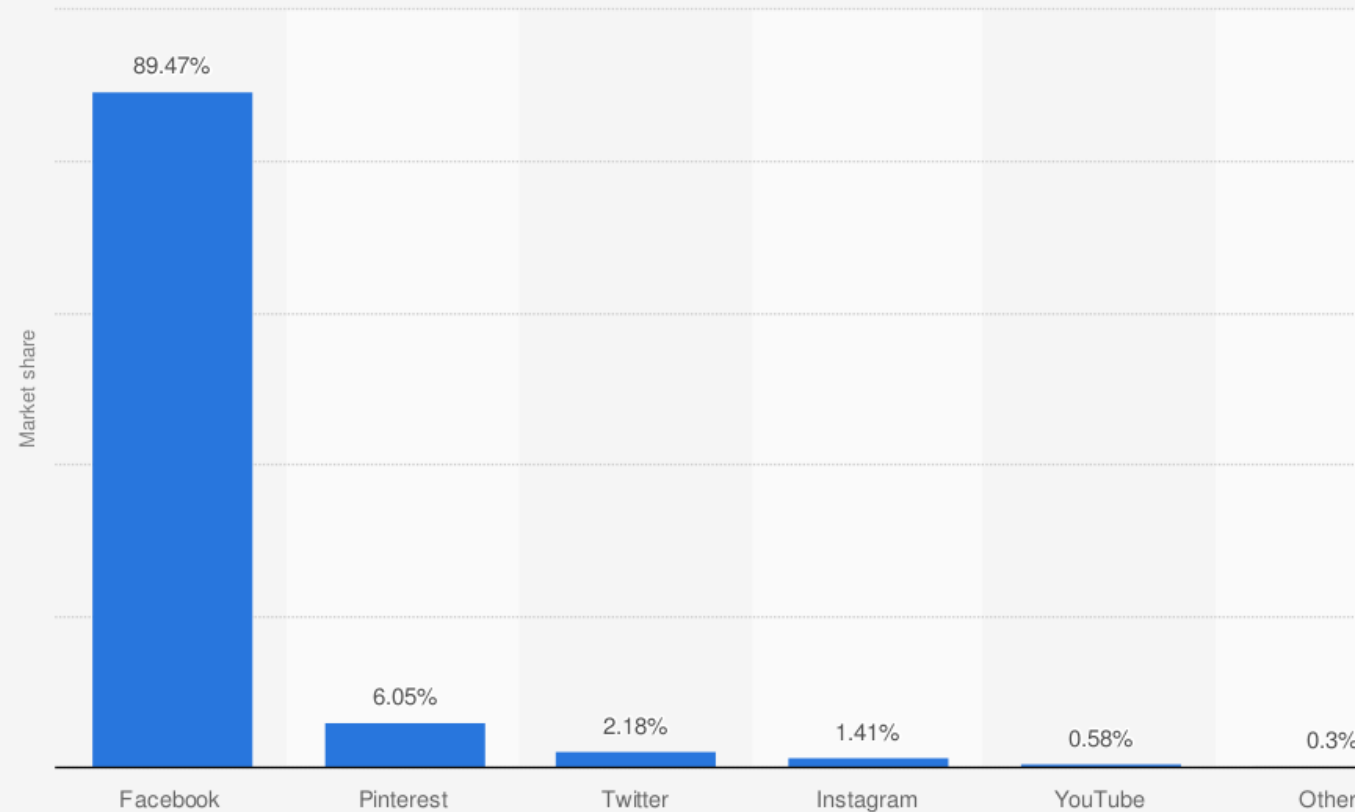


- 70% of Puerto Ricans used the internet in 2017. Because of COVID-19, there are more in 2020
- Most buyers check the internet before they make a purchase
 - Power of information has shifted from seller to buyer
 - Most buyers have already searched the internet before they buy
- Websites are where buyers go first to find information

Stay Connected with Social Media

- Puerto Rico's most popular social media platform is Facebook
- Most businesses use Facebook for B2C (Business to Consumer) connections
- Most effective ways to use Facebook:
 - Create an impressive profile page with a professional picture
 - State clearly what your business can do for your target audience
 - Regularly post content that is relevant to your target audience
- Seek professional digital marketing help

Most popular social media websites in Puerto Rico in 2019, based on share of visits

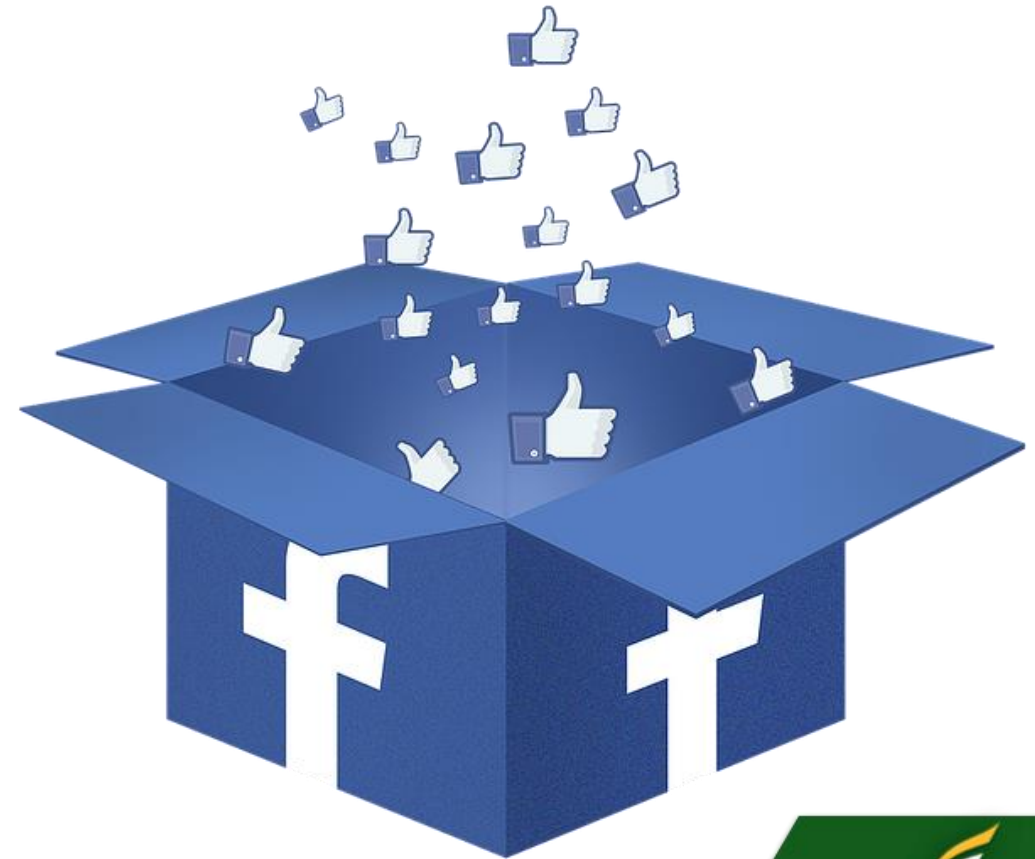


Source
StatCounter
© Statista 2020

Additional Information:
January to December 2019; Including mobile, tablets, desktop and consoles.

Measure Your Networking Effectiveness

- Set clear goals for the number of connections per week
 - In-person Goals (After COVID-19)
 - Social Media Goals
 - Website Visits (Google Analytics)
- Develop a content calendar for your target market
 - Don't sell; be helpful
 - Don't write ad for baby clothes; write Blog for mothers on how often to wash clothes



Bonus Key



- Practice inbound marketing techniques
 - Attract customers by creating valuable content
 - Inbound marketing connects and engages
- Become a trusted advisor to your target audience
- Study digital marketing techniques
- Learn to be a SME (Subject Matter Expert)

Questions?



Poll Question #2 (After Slide 9)

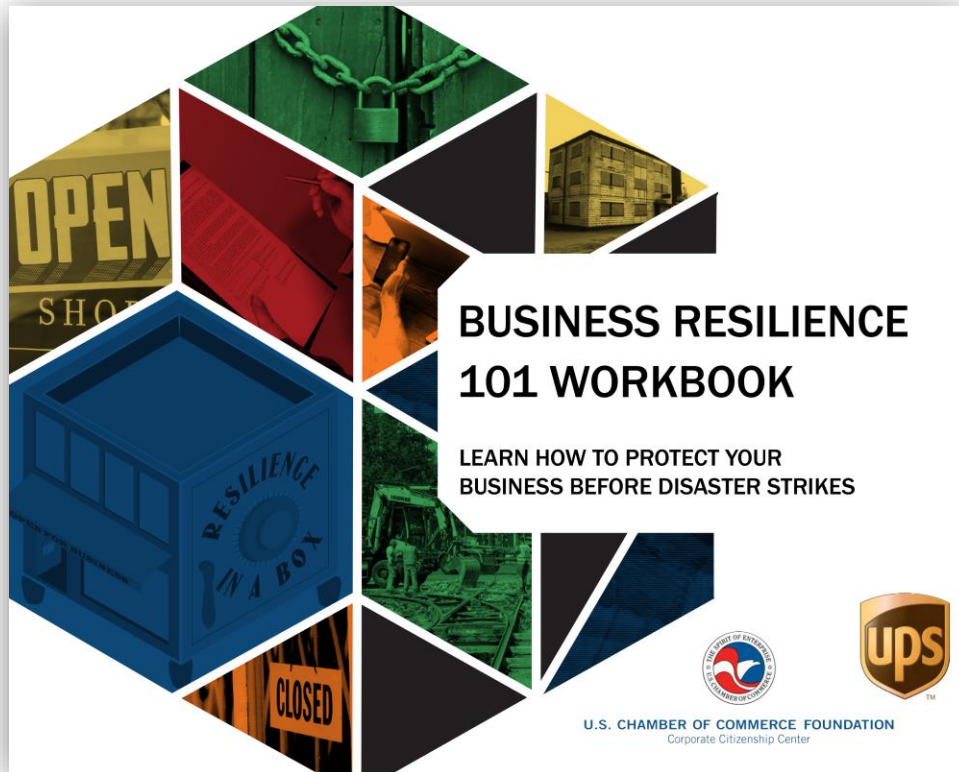
Do you use your Facebook account in one of the following ways?

- Paid Ads
- Post Content Marketing Ads
- Write Blogs
- Post and share comments and “likes” on other people’s content
- I don’t have a Facebook account

Poll Question #1 (After Slide 8)

- Do you have a website with your products or services prominently displayed?

- Yes
- No



Lesson 2

Business Impact Analysis; Protection of People, Data, and Operations

Lesson 2, 3 & 4 Overview

Complete Your Resilience Plan

- Lesson 2, Business Impact Analysis; Protection of People, Data, and Operations
- Lesson 3, Protection of Inventory, Equipment, and Buildings
- Lesson 4, Integrate Material from Lessons 2 & 3; Discuss “Adapt & Reposition;” Finalize Resilience Plan



Building a Resilient Business: Before, During, and After a Disaster



**Business Impact Analysis;
Protection of People, Data, and Operations**



Puerto Rico
Science, Technology
& Research Trust



Resiliency and
Business Innovation



Center for Resilient and
Sustainable Communities

Organized by the Puerto Rico Science, Technology & Research Trust

Sponsored by: U.S. Economic Development Administration

September 22, 2020, 6:00 PM- 7:15 PM

*C-RASC consists of researchers from George Mason's Volgnau School of Engineering, the School of Business, the Schar School of Policy and Government, the Jimmy and Rosalyn Carter School of Peace and Conflict Resolution, the College of Science, and the College of Health and Human Services



Your Six Critical Business Assets





Protect People – 1 (Overview)



- People are the most overlooked asset when planning for a disaster
- Employees & Staff
- External People
 - Customers
 - Vendors
 - Suppliers
 - Other Key Contacts



Protect People – II (Complete Forms)

- Emergency Contacts | p. 13-14 fill-in list
- Key Contacts | p.15 fill-in list
- Current Customers | p.16 fill-in list
- Vendors/Suppliers | p. 17 fill-in list
- Visitors | p. 18 fill-in list
- Partners or Partnerships | p. 19 fill-in list



Protect Data I (Overview)

- No matter where your data lives (hard copy, on servers, or in the cloud) you need to protect it.
- Steps Essential to Backing Up Data
 - Perform regular backup and storage off-site
 - Plan how to recover your data
 - Test your backups
 - Create a “Grab-N-Go” case
 - Develop a Vital Records
 - Inventory List
 - Implement a Cybercrime
 - Protection Plan



Protect Data – II (Complete Forms)

- Create a “Grab-N-Go” Case checklist | p. 35
- Test Your Backups checklist | p. 35
- Create a Vital Records Inventory | p. 36



Protect Operations I (Overview)

- Operations are the core functions your business does on a daily basis.
- Ask yourself these questions to determine information you need to restart after a disaster:
 - Is my business driven by demand from individual customers?
 - Do I have service level contracts to maintain?
 - Do I have to adhere to regulations to operate my business?
 - Does my business depend on a specific power source (gas, electricity)?
 - Does my business depend on the specific skills of my employees



Protect Operations II (Complete Forms)

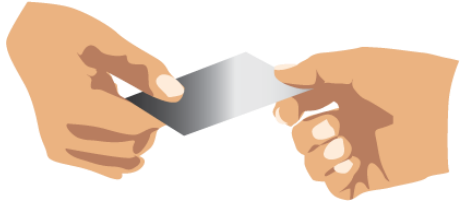
- Where to Start checklist | p. 38
- Grab-n-Go checklist | p. 39
- Critical Operations/Processes checklist | p. 39
- Prioritize Critical Operations & Processes | p. 40 fill-in list
- Consider Losing Your Building | p. 40 fill-in list



Optional Checklist - Communications

A communications strategy during a disaster is important.

- Methods of Communication checklist | p. 24
- Finding a Spokesperson checklist | p. 24
- Communications Before & After Disaster checklist | p. 25
- Internal Communications checklist | p. 26
- External Communications checklist | p. 27
- Crisis Communications checklist | p. 29



Optional Checklist - Your Brand

Your brand is how your stakeholders experience your company.

The different ways people experience your company are:

- Employees
- Service
- Website
- Logo
- Tagline

Complete forms

- Protect Your Brand checklist | p. 28

Upcoming Schedule

Please join us for the next Puerto Rico Science, Technology & Research Trust's Puerto Rico Resilience course session on October 8 at 6:00 PM- 7:15 PM with the topic of:



Lesson 3: **Protection of Inventory, Equipment, and Buildings**

And follow the course and check for schedules and updates at: <https://prsciencetrust.org/rbi/g3/>

**Questions
Very Welcome**

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Back-Up

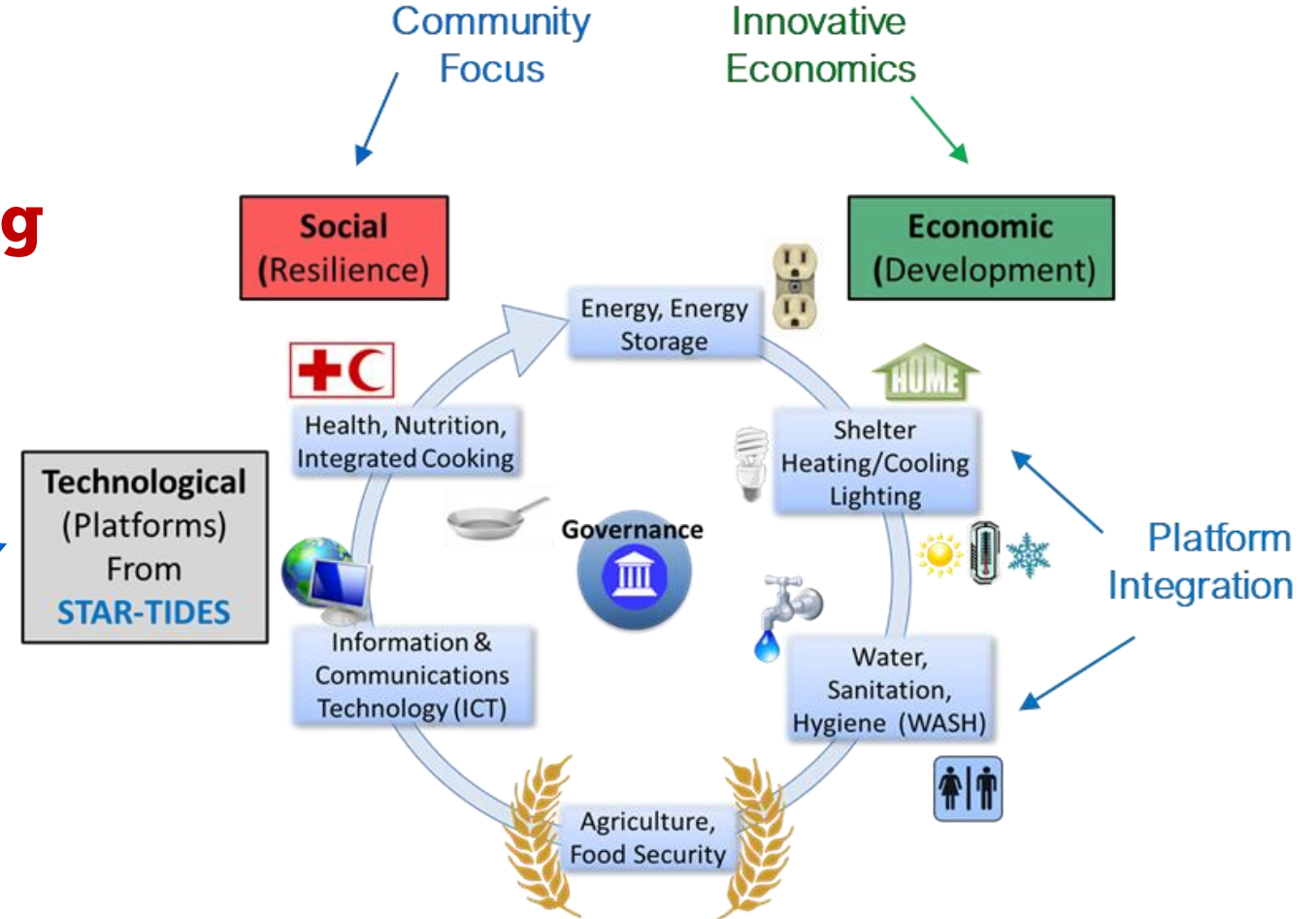
Listening, Learning Lasting

Knowledge Sharing

via STAR-TIDES network



Trans-Disciplinary Research and Teaching are Key



Keys to Success: Narrative; Systems Thinking; Shared Knowledge; Resources; Education; Logistics; Digital Enabling Technologies

Stability/Security ↔ Sustainability

Roles of Stakeholders

- **Private vs public**
 - Public sector being paid, but in lockdown many services aren't delivered
 - Actual unemployment in private sector (809% of workforce) may exceed 509%
- **What should roles be for govt, private sector, and academia in building sustainable resilience in Puerto Rico?**
- **What are strengths/weaknesses of Small/Medium-sized businesses?**

Collaboration and Tools for Cross-Country Capacity Building and Decision-Making

The **Caribbean Climate Online Risk and Adaptation tool (CCORAL)** is a planning tool that can help countries make climate-resilient decisions and take actions in response to a changing climate.

(<http://www.caribbeanclimate.bz/caribbean-climate-chage-tools/tools/>)

The **Caribbean Catastrophe Risk Insurance Facility** is the world's first index-based parametric insurance mechanism. It is a partnership of 17 Caribbean countries and the World Bank. (<https://www.ccrif.org/>)

The **Caribbean Challenge Initiative** was launched in 2008, with support of The Nature Conservancy. Puerto Rico and the USVI later joined participating governments committed to conserving at least 20% of their nearshore marine and coastal environments by 2020 and to ensuring that these areas are managed through a long-term finance structure.

(<http://caribbeanchallengeinitiative.org/>)

Mission/System Performance

