

Risk and Resiliency

When we think about the future....





HURRICANE CENTRAL

HURRICANE SANDY



But do we think about...



New Crops



Puerto Rico

DEBT



More **Heavy Rains**



Increased nutrient delivery



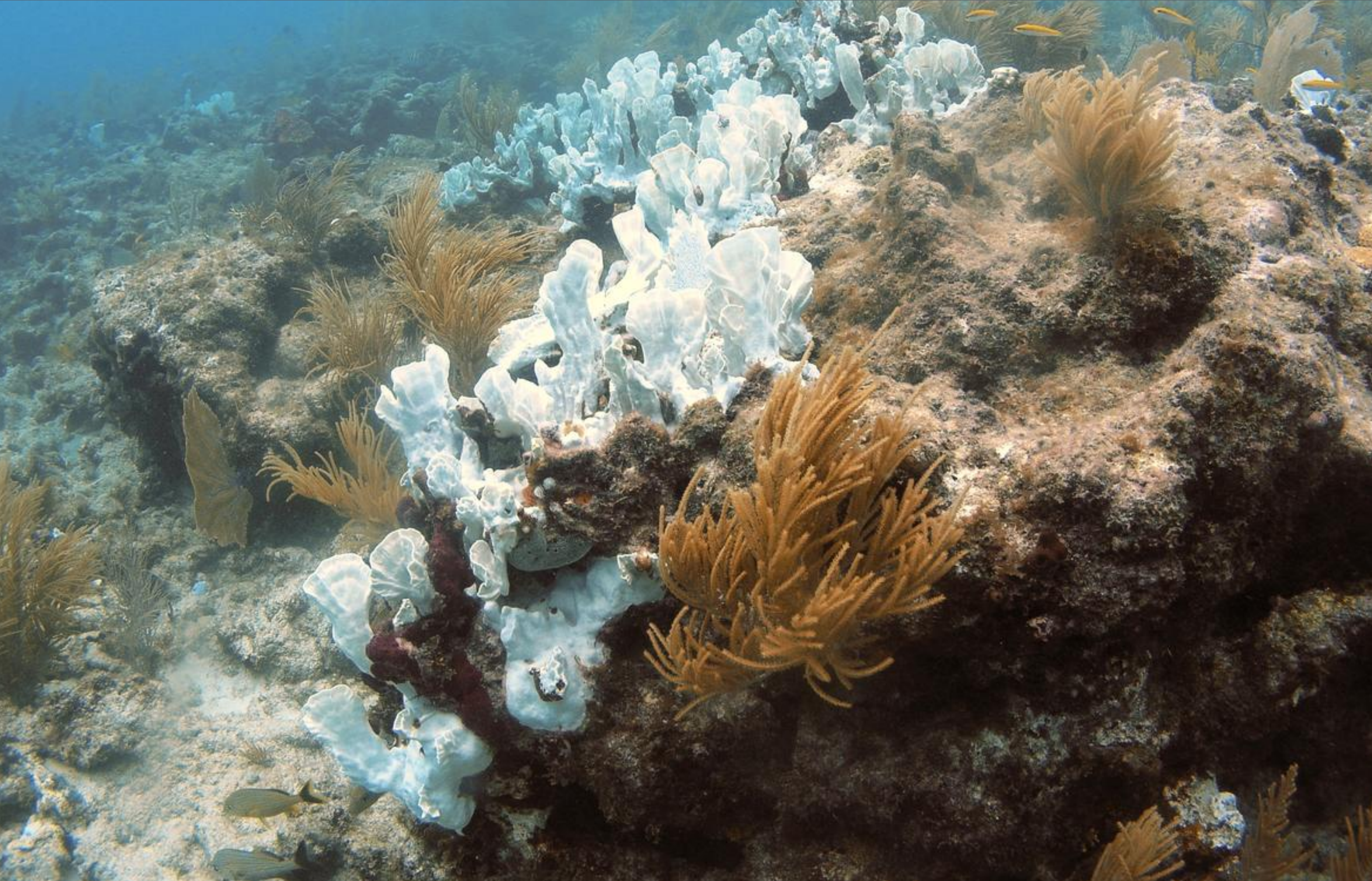
Increased eutrophication

Warmer **Ocean**

More severe hurricanes



Coral bleaching



Invasive species



Uncertainty

How can we understand the
potential impacts on our
communities?

Are we resilient?

Resiliency

The ability of an organization to **grow, resist, absorb, respond** and/or **recover** in a timely and efficient manner, preserving or restoring its essential basic structures, functions and identity.

Without resiliency there
is risk

\$INDU - 5 min Dow Jones Industrial Average US



Probe for Resiliency Against Future Scenarios



2020

Who is planning
for 2020?

What does my community look like?


What does my local/state government look like?

What does my water system look like?

What actions do I need to take?

What does my messaging look like?

3 Tools

The background features a series of concentric circles in shades of orange, red, and brown, centered on a black background. The circles are of varying diameters, creating a tunnel-like or target-like effect.

PESTEL for Future Scenario Building

Headline Scenarios

High

High Impact
Low Probability

Plan in Place

High Impact
High Probability

Active Steps

Impact/Probability Grid

Low Probability

Does not impact you but
could impact others

High Probability

Think about larger scale
“just to be sure”

Low

Low

Probability

High

Vulnerability Assessment





Future is unknowable: but it **WILL** impact us

LIVE
FOX
BUSINESS
4:10P ET

AFTER
THE BELL

**DOW CLOSES AT NEW RECORD HIGH AS
PRES. ANNOUNCES END TO CLIMATE DEAL**

S&P 2430.06 ▲ 18.26

NAS 6246.83 ▲ 48.31

3 ▼ 0.0043

CAD/USD (CADUSD=) 0.7394 ▼ 0.0010



PESTEL

Political

Environmental

Social

Technological

Economic

Legal/Regulatory

Helpful

to achieving the objective

Harmful

to achieving the objective

Internal origin
(attributes of the organization)

S
Strengths

W
Weaknesses

External origin
(attributes of the environment)

O
Opportunities

T
Threats

PESTEL

Opportunities & Threats

Stakeholders and Allies

Strategic and Resilience
Planning



T

H

O P P O R T U N I T Y

E

A

T

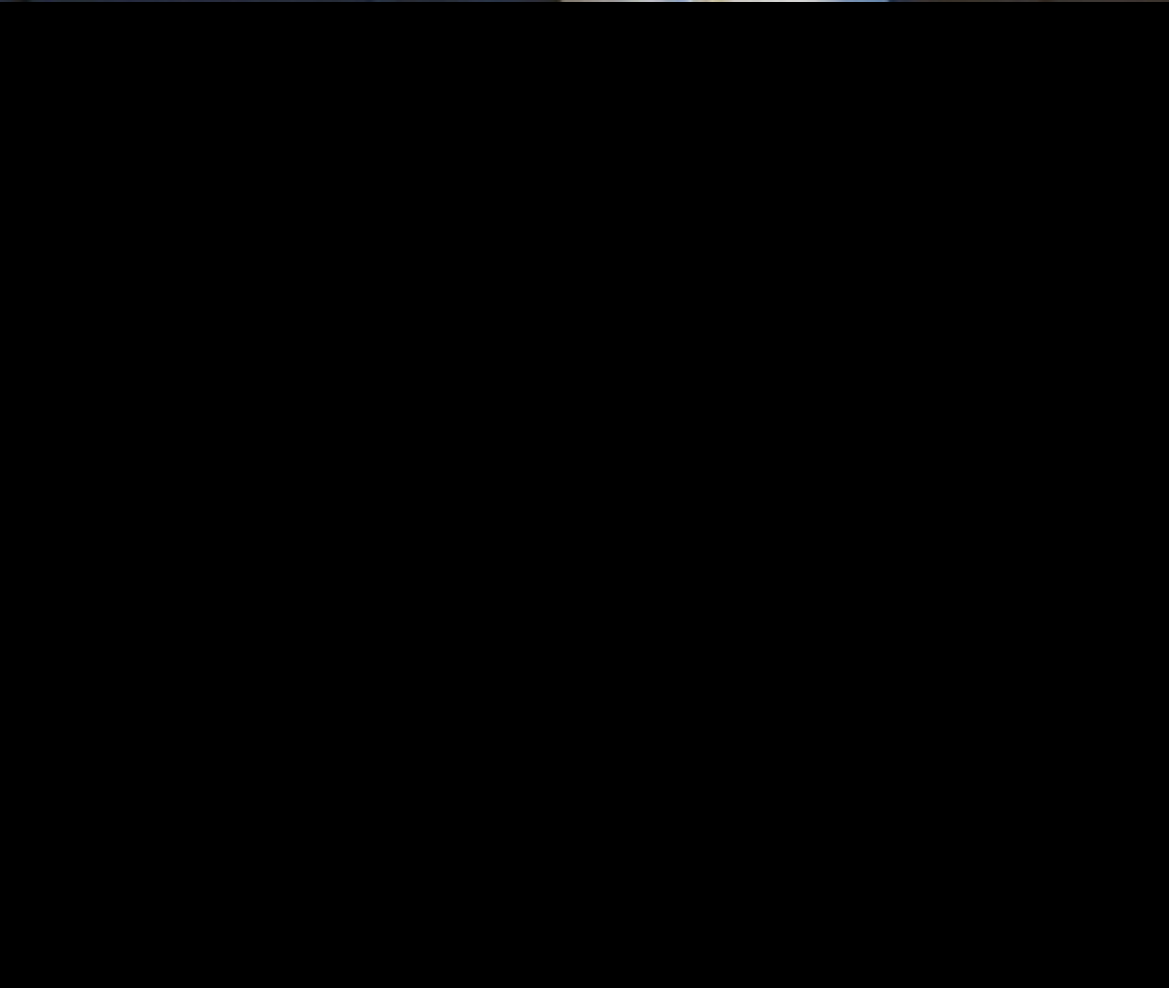
Develop
Future
Scenarios



PESTEL



Political





Environmental



SOCIAL



Technological

Economic



Legal/Regulatory



Political

Environmental

Social

Technological

Economic

Legal/Regulatory

Use **PESTEL** to
Develop Resiliency
Planning Scenarios

June 2020



P Fiscal board allows all natural reserves to be sold

E 5-year drought hits Puerto Rico

S 30% increase in population from New York & Florida

T Virus disables 50% of computers across island

E New company re-locates - 100,000 new jobs coming

L All government services are privatized



Black Swans



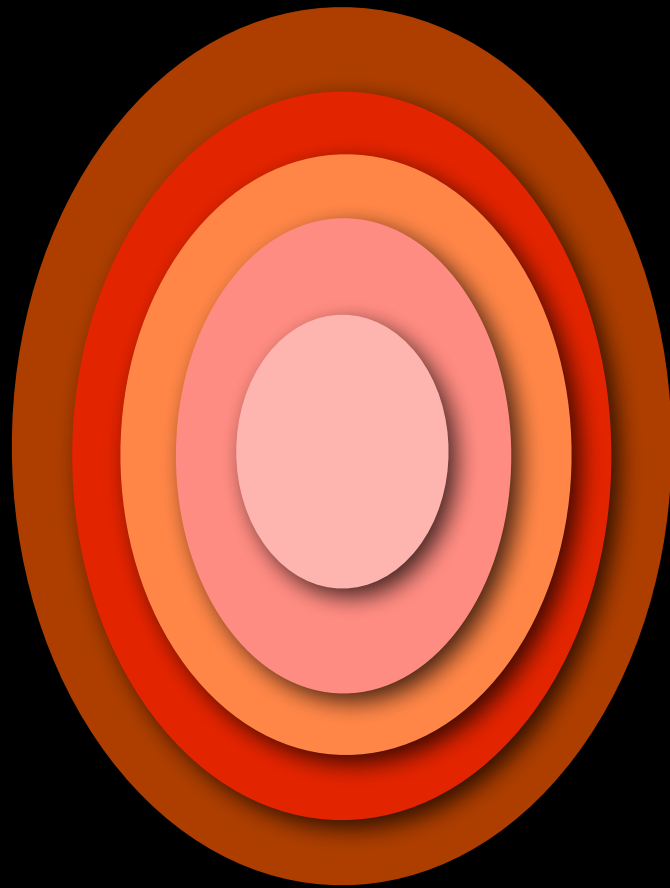


Team Activity

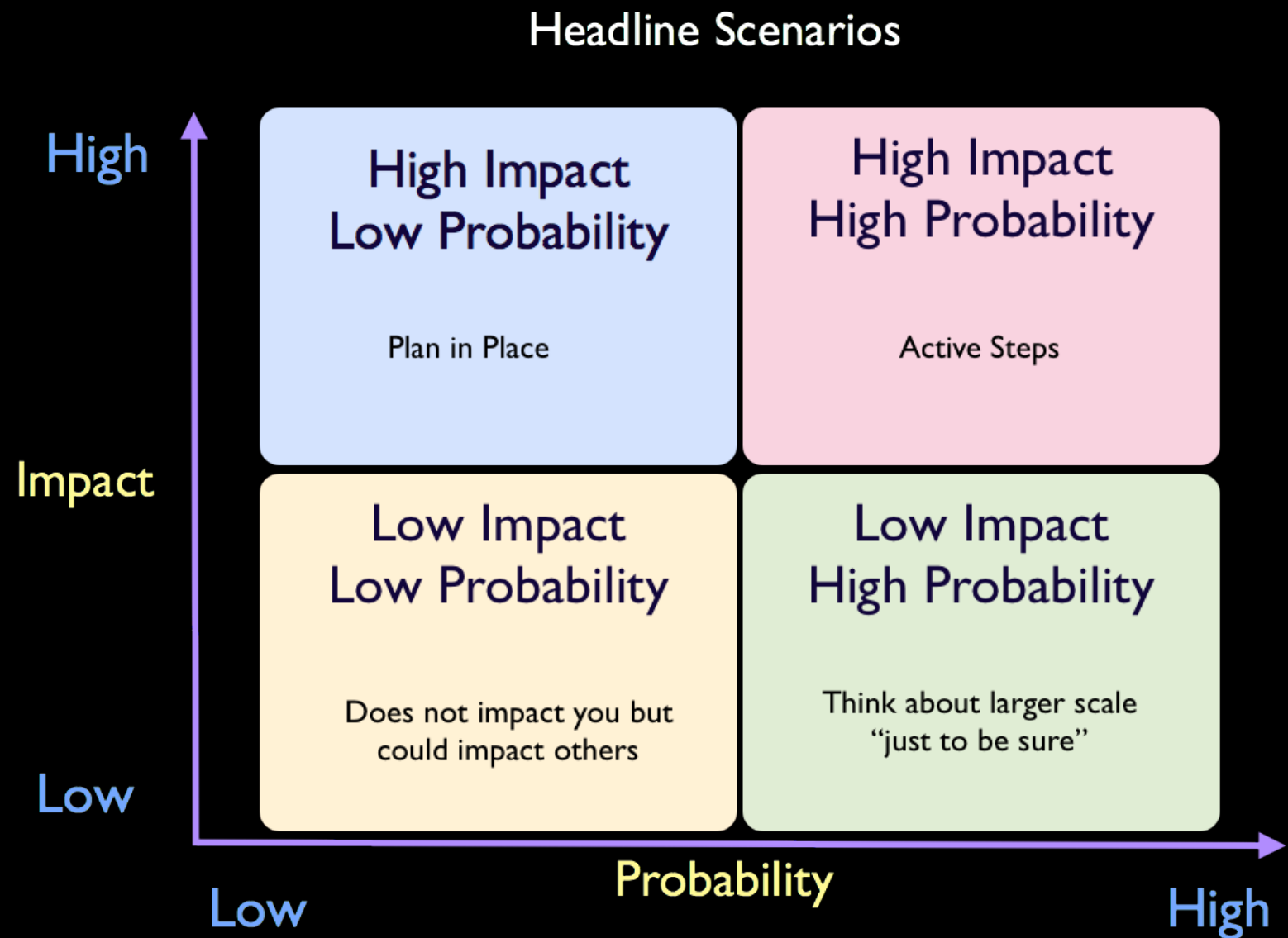


1. Each team develops 2 scenarios for:

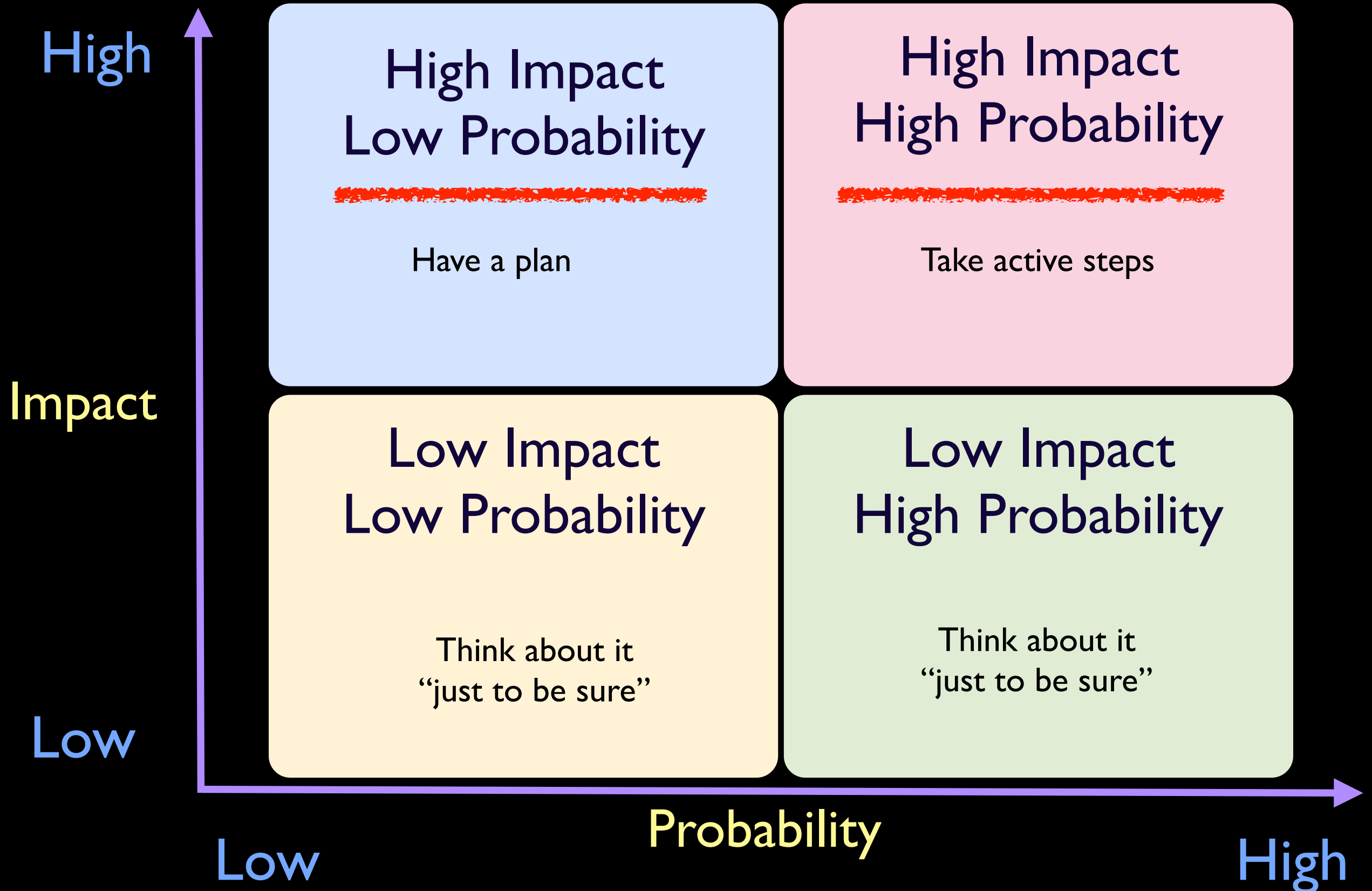
(P)
(E)
(S)
(T)
(E)
(L)



2. Black Swan?
3. Prioritize all scenarios



Headline Scenarios



Vulnerability Assessment



Scenarios

**Pipeline
severed for
one month**

**Daily
flooding
throughout
the Keys**

**Waterborne
disease causes
sterility**

**Housing
median rises
to \$1 million**

FKAA

**Emergency
Services**

Locals

Utilities

**Tourism
Industry**

Other Business

Your assets

**Pipeline
severed for
one month**

**Waterborne
disease
causes
sterility**

What does **organization** look like
under various futures?

**Pipeline
Severed**

**\$1 Million
Housing**

FKAA

Calling in
National
Guard

Emergency
water
rationing

Can't hire -
housing too
expensive

Transporting
staff from
mainland

Tourism

Tourists not
coming

Businesses
shutting
down

Tourism is
booming

Business
water
demand is
growing

2026	P	P	S	E	E	L
Mayor's Office						
Utilities						
Community Residents						
Businesses						
Emergency Services						

You may not need
to test a full
PESTEL

	Pipeline severed for one month	Daily flooding throughout the Keys	Waterborne disease causes sterility	Housing median rises to \$1 million
FKAA				
Emergency Services				
Locals				
Utilities				
Tourism Industry				
Other Business				

Identify
Stakeholders



PESTEL