

**AON**

**Parametric  
Solutions:  
A financial  
alternative to  
manage climate  
risks**

July 19, 2022

10:00am – 11:00am





# Experts and Agenda



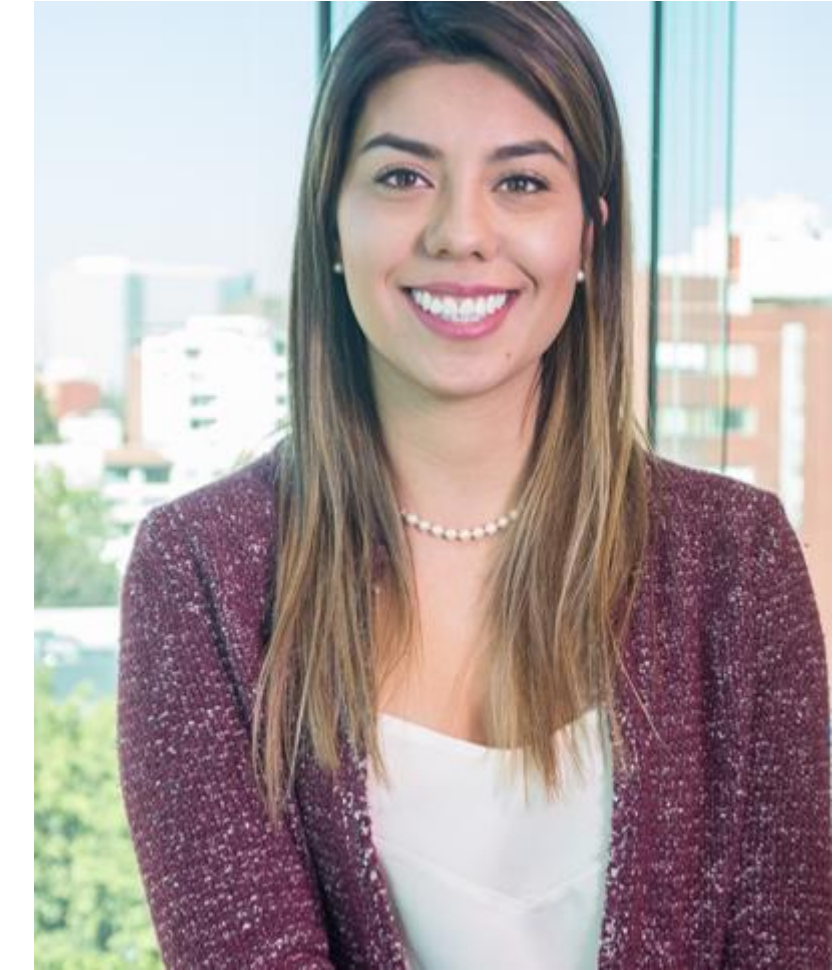
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# 1

## 2021 Global Risk Management Survey

### Key Findings





# 2021 Global Risk Management Survey Full Risk Rankings

● Partially Insurable ● Insurable ● Uninsurable

1 Cyber Attacks/ Data Breach	2 Business Interruption	3 Economic Slowdown/ Slow Recovery	4 Commodity Price Risk/ Scarcity of Materials	5 Damage to Reputation/ Brand	6 Regulatory/ Legislative Changes	7 Pandemic Risk/ Health Crises	8 Supply Chain or Distribution Failure	9 Increasing Competition	10 Failure to Innovate/ Meet Customer Needs
11 Accelerated Rates of Change in Market Factors	12 Cash Flow/ Liquidity Risk	13 Failure to Attract or Retain Top Talent	14 Workforce Shortage	15 Exchange Rate Fluctuation	16 Political Risk	17 Tech Failure/ System Failure	18 Environmental Risk	19 Counterparty Credit Risk	20 Property Damage
21 Vendor Management/ Third Party Risk	22 Weather/ Natural Disasters	23 Climate Change	24 Capital Availability	25 Product Liability/ Recall	26 Data Privacy (including GDPR) Requirements/ Non-Compliance	27 Concentration Risk (Product, People, Geography, Etc.)	28 Major Project Failure	29 Work Injuries	30 Disruptive Technologies
31 Corporate Social Responsibility (CSR)/ Environmental Social Governance (ESG)	32 Geopolitical Volatility	33 Asset Price Volatility	34 Conduct Risk/ Unethical Behavior	35 Aging Workforce and Related Health Issues	36 Third-Party Liability (e.g. E&O)	37 Merger/Acquisition/ Restructuring	38 Failure to Implement/ Communicate Strategy	39 Absenteeism	40 Outdated Tech Infrastructure
41 Interest Rate Fluctuation	42 Inadequate Succession Planning	43 Intellectual Property Risks	44 Globalization/ Emerging Markets	45 Personal Liability (Directors & Officers)	46 Rising Healthcare Costs	47 Fraud or Embezzlement	48 Outsourcing	49 Theft	50 Artificial Intelligence (AI)
51 Terrorism	52 Impact of Brexit	53 Share Price Volatility	54 Harassment/ Discrimination (Employment Related)	55 Sovereign Debt	56 Gender Pay Gap	57 Pension Scheme Funding	58 Extortion	59 Kidnap and Ransom	60 Impact of Blockchain Tech



# 2021 Global Risk Management Survey Top 10 Current Risks

1 Cyber Attacks/ Data Breach	2 Business Interruption	3 Economic Slowdown/ Slow Recovery	4 Commodity Price Risk/Scarcity of Materials	5 Damage to Reputation/ Brand
6 Regulatory/ Legislative Changes	7 Pandemic Risk/ Health Crises	8 Supply Chain or Distribution Failure	9 Increasing Competition	10 Failure to Innovate/Meet Customer Needs



# 2021 Global Risk Management Survey

## Top 10 Current Risks

- Cyber Attacks/Data Breach rises to its highest ranking ever and is the new global number one current and predicted future risk. Cyber security is perceived as a Top 10 Risk by every surveyed sector and for all job roles, including CFOs, CEO and heads of human resources.
- Business Interruption comes in at close second most important risk intrinsically linked to all other of the top 10 risks inc. Supply Chain Failure, Regulatory Risk, Pandemic Risk.
- Commodity Price Risk/Scarcity of Materials is ranked highest since 2007 at rank four. This in turn is highly correlated with the Supply Chain concerns, Regulatory Risk etc. It is the number one risk for Food, Agribusiness & Beverage and Industrials & Manufacturing sector participants and predicted to rise to rank 3 globally and rank 2 in Europe
- Supply Chain or Distribution Failure re-enters the top ten at rank eight due in large part to its linkage to Pandemic, BI and its geopolitical impact. Supply chain failure and business interruption have been redefined by the pandemic, not just from event-based to impact-based but also from property focused to non-property and contingent focused exposure.
- Pandemic/Health Crises unsurprisingly moves from number 60 to 7. Reported loss of income from pandemic risk in the last 12 months has risen from two percent in 2019 to 79 percent in 2021.



# 2

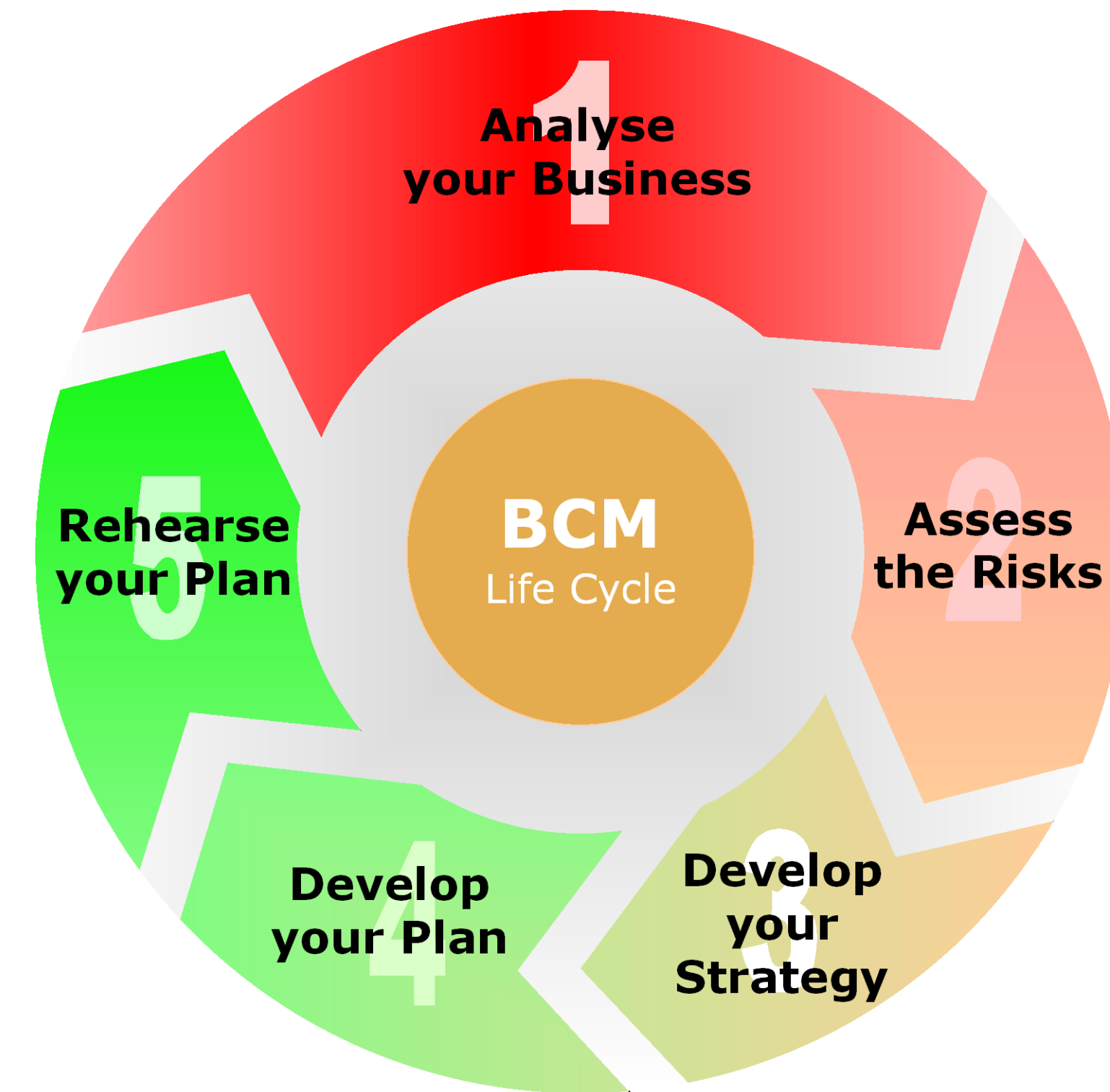
## Business Continuity





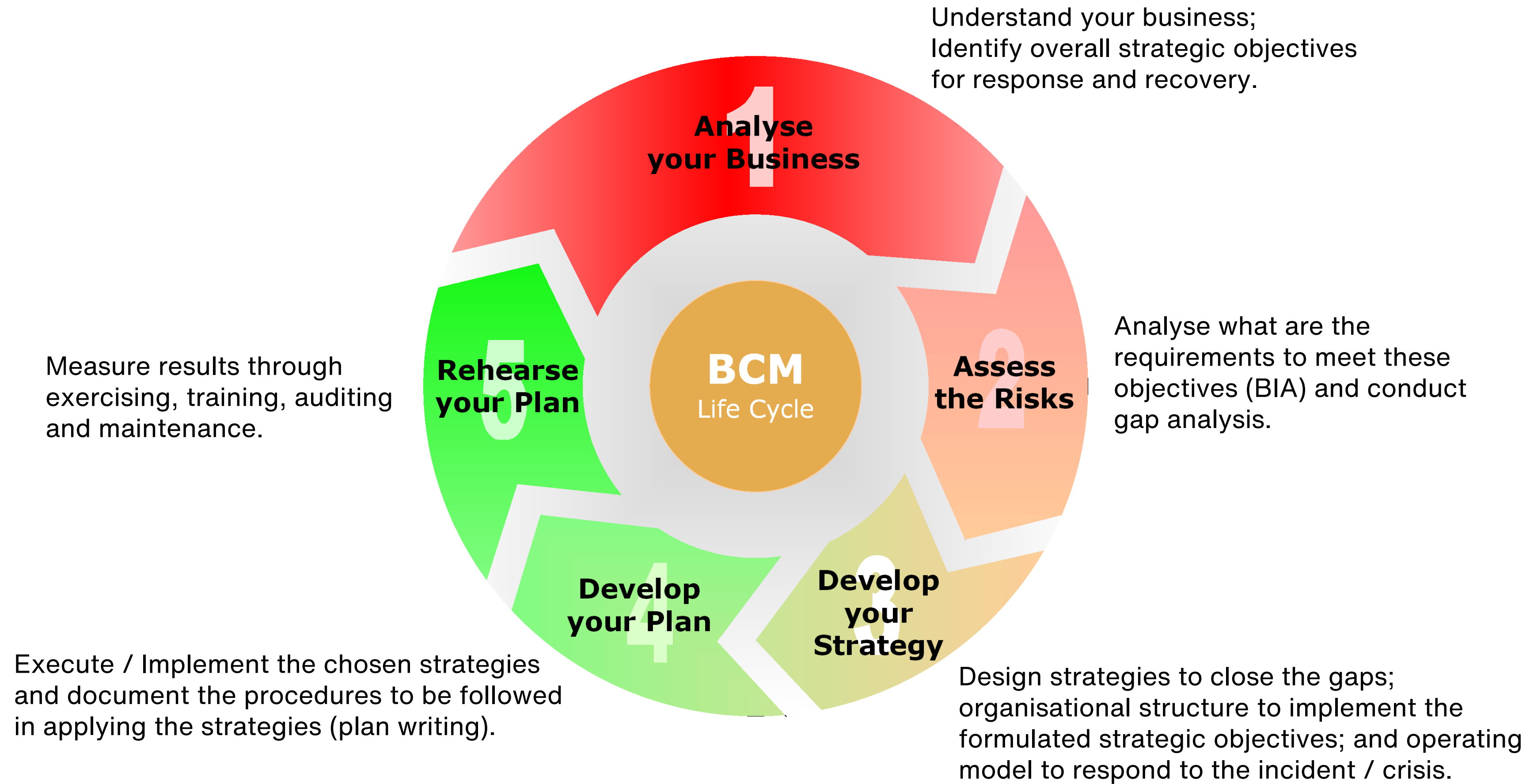
# Business Continuity Management (BCM)

Is a holistic management process that identifies potential impacts that threaten an organization and provides a framework for building resilience and the capability for an effective response that safeguards the interests of its key stakeholders, reputation, brand and value creating activities.





# How to structure the BCM process





# Business Continuity Management

Nearly 1 in 5 businesses suffer a major disruption every year. Yours could be next. With no recovery plan, you have less chance of survival.

30% of all companies experiencing a catastrophic disaster never reopen. After 2 years, an additional 29% will be closed.

Companies deprived of key computer systems for 10 days cannot recoup the financial damage. After 5 years, 50% are out of business.





# Business Continuity Context

Disaster Recovery - the creation & execution of plans to recover the data & systems of an organization to the point immediately prior to the interruption

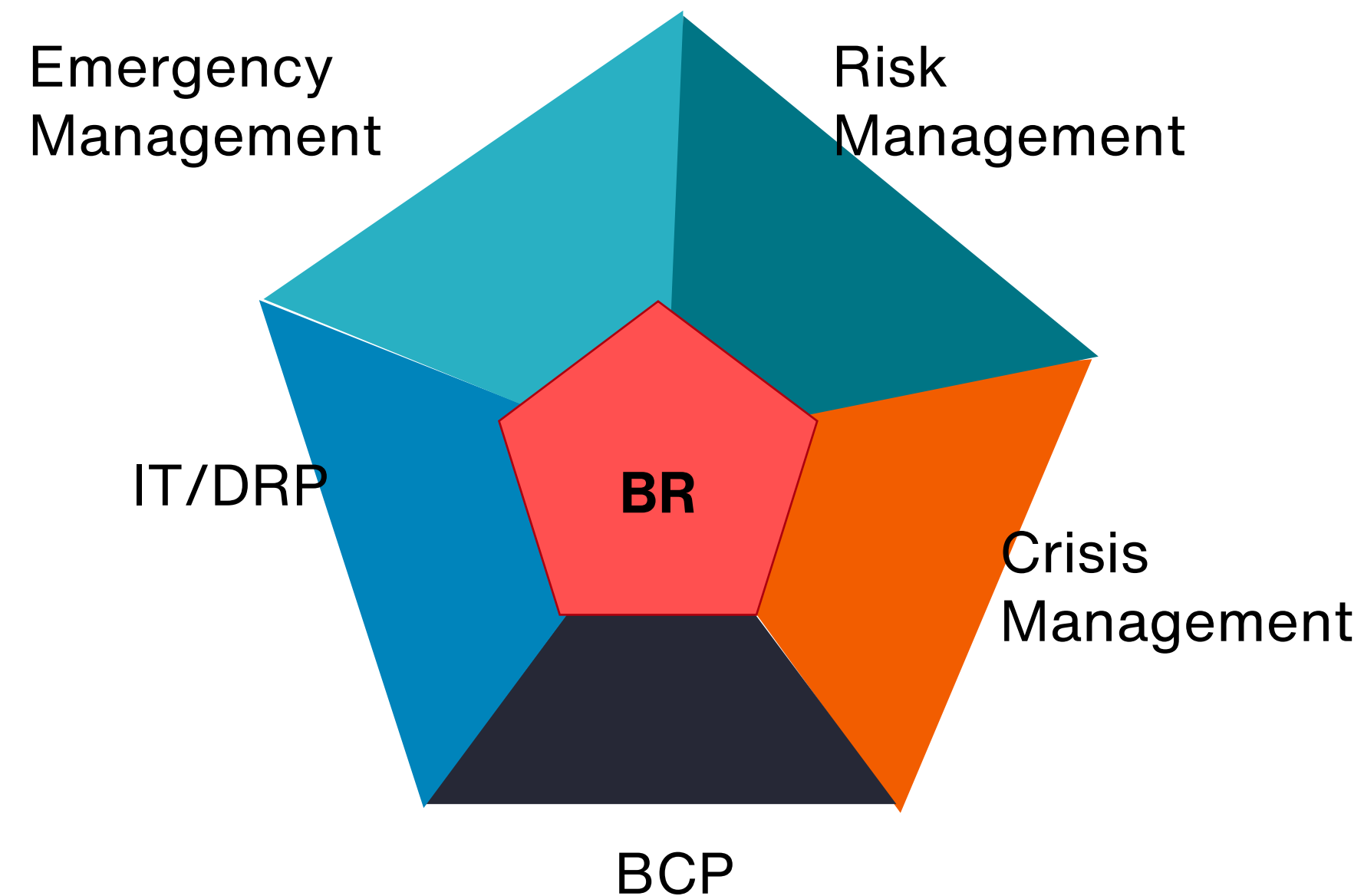
Contingency - the physical or process alternative to a single point of failure eg. Back up generator for power failures

Operational Continuity - the alternative processes implemented during a failure, which allow the “process” to continue, whilst relying on the contingencies or DR Plans to restore full operations

Business Continuity - the processes by which business can be maintained to an acceptable level until full processes and systems are restored



# Business Continuity Context



## MYTHS & ASSUMPTIONS

- If you have an IT DR Plan you don't need BC Planning
- Contingency planning and risk management cover BCP
- We've already got Evac. Plans
- We're well insured against losses
- We've been OK until now and survived a few problems – we'll be OK!
- BCP is a minimalist approach



# Business Continuity Mgmt Goal

- To have Top Management on board
- To identify the organization's key processes
- To identify the critical underlying technology & services
- To identify the critical stakeholder relationships
- To identify the alternative approaches
- To establish a plan[s] that can be readily and effectively activated
- To provide real operational alternatives



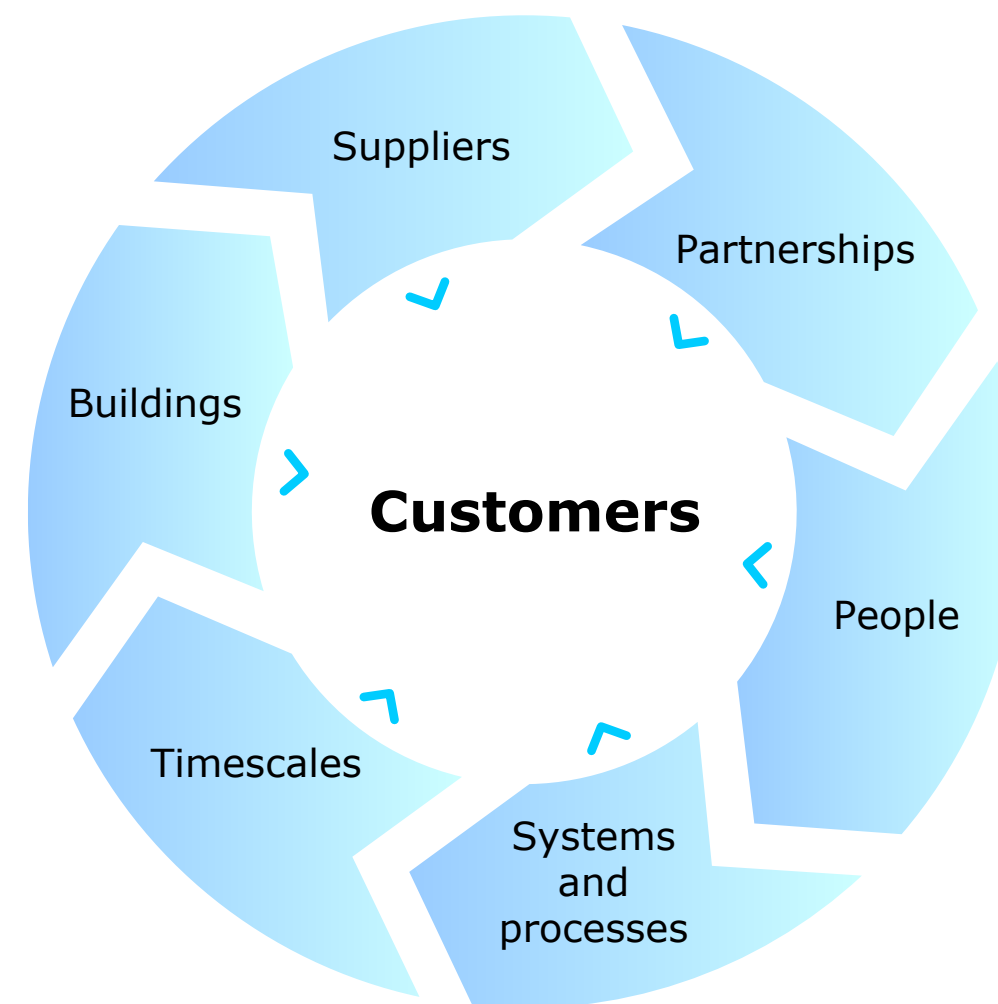
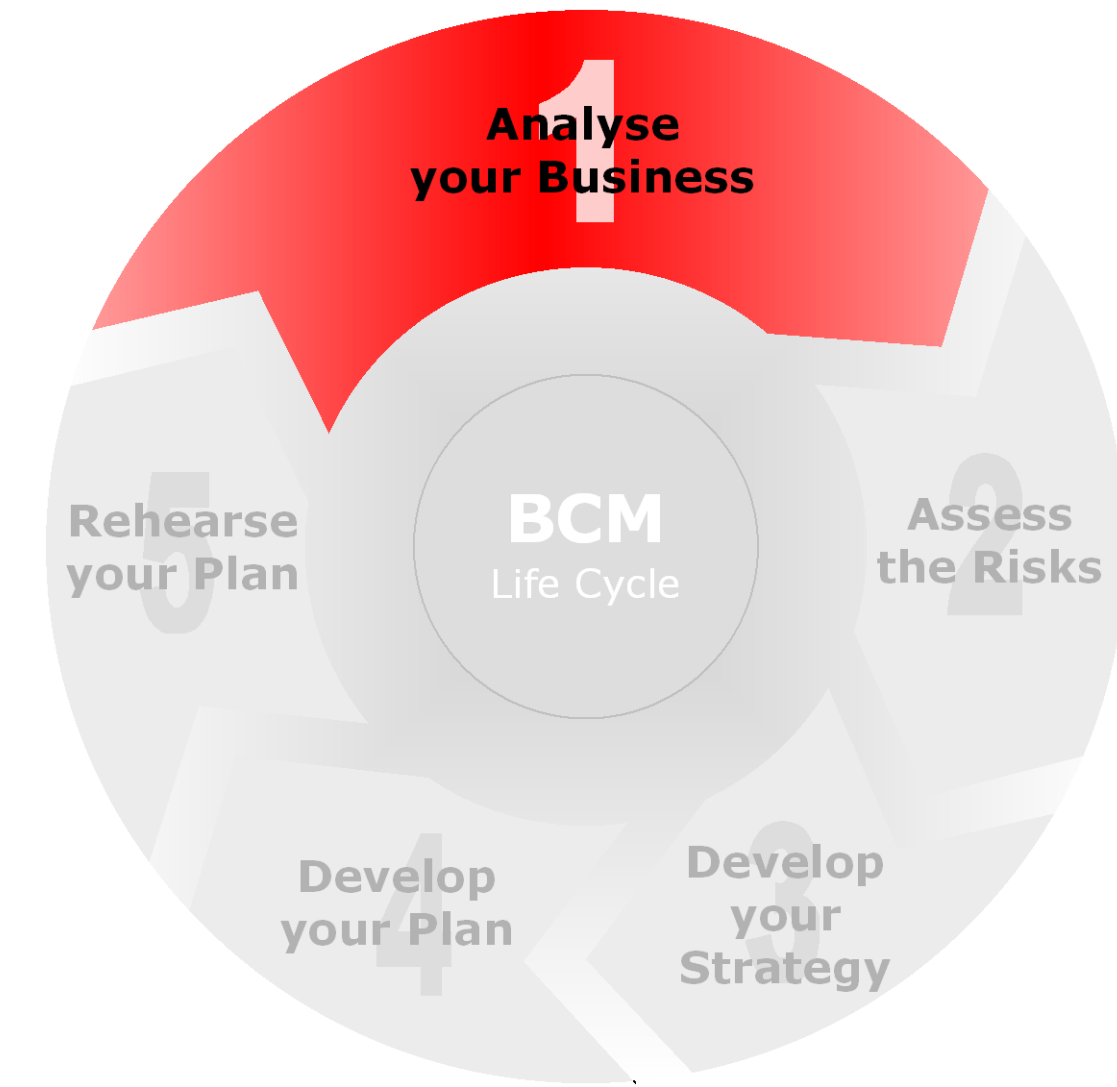
# Step 1: Analysis of your business

## Essential:

- Full support of Board and senior management;
- Ownership lays with someone in senior management;
- Recording of the findings;

## Goal:

- Knowing where your business is vulnerable;





# Step 2: Assess the risks

**There are two aspects to every risk to your business**

How likely is it to happen?

What effect will it have on your business?

**Identify “mission critical processes & functions”**

1. Ask ‘What if’ questions;
2. Ask what is the worst-case scenario;
3. Ask what functions and people are essential, and when;

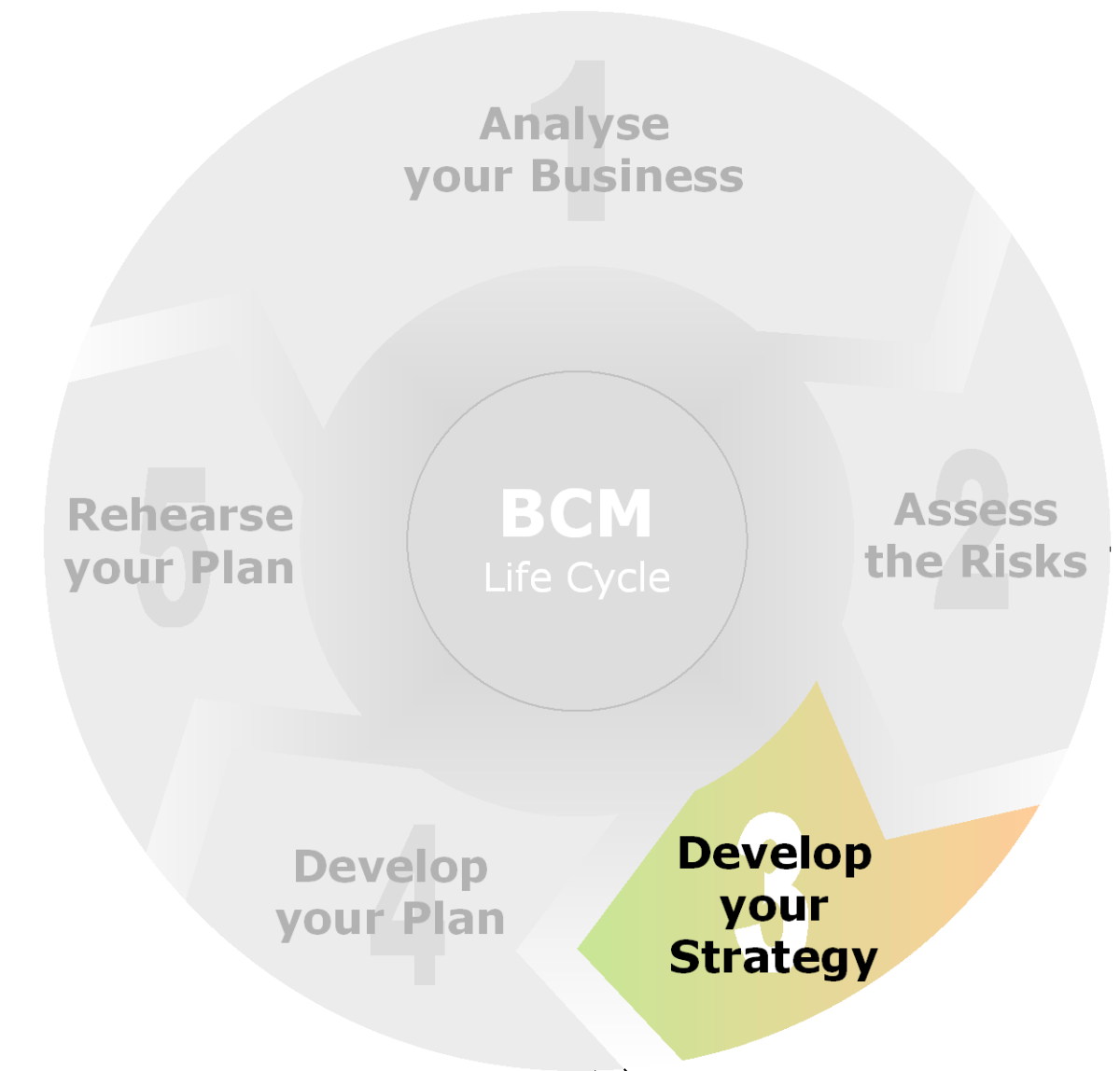




# Step 3: Develop your strategy

## ↪ Threat Vulnerability Matrix

- Fire
- Power outage
- Flood
- Bomb Threats
- Environmental issue
- Earthquake
- Hurricane
- IT Failure
- Terrorist attack
- Pandemic



CONSEQUENCE \ FREQUENCY	LOW	MEDIUM	HIGH
VERY HIGH			
HIGH			
MEDIUM	POWER OUTAGE	IT FAILURE	
LOW			FIRE

# Step 3: Develop your strategy

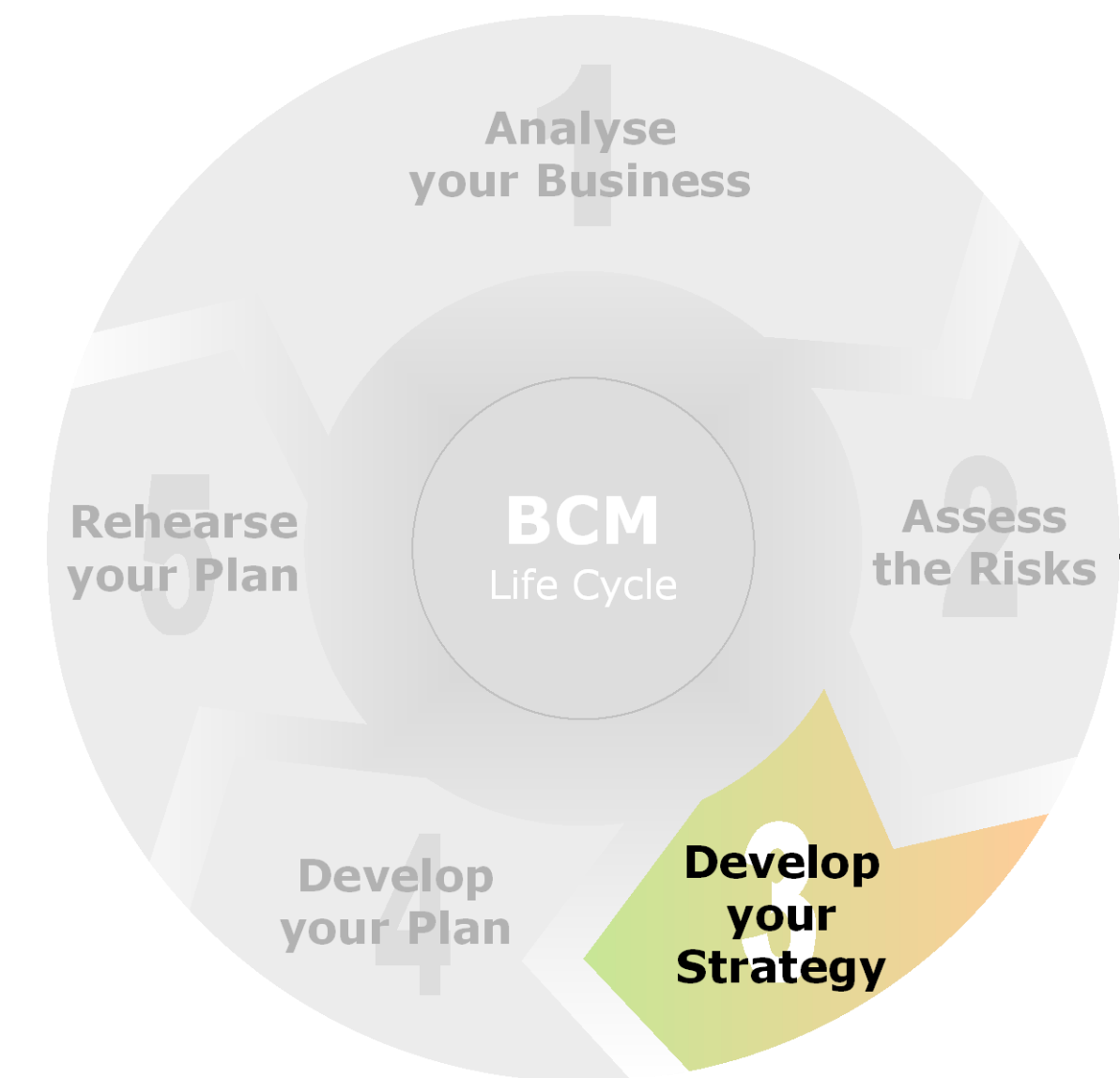
Proven strategies:

Accept the risks – change nothing;

- Accept the risks, however, make a mutual arrangement with another site or business supplier to ensure that you have help after an incident.
- This business supplier could be a competitor;

Attempt to reduce the risks;

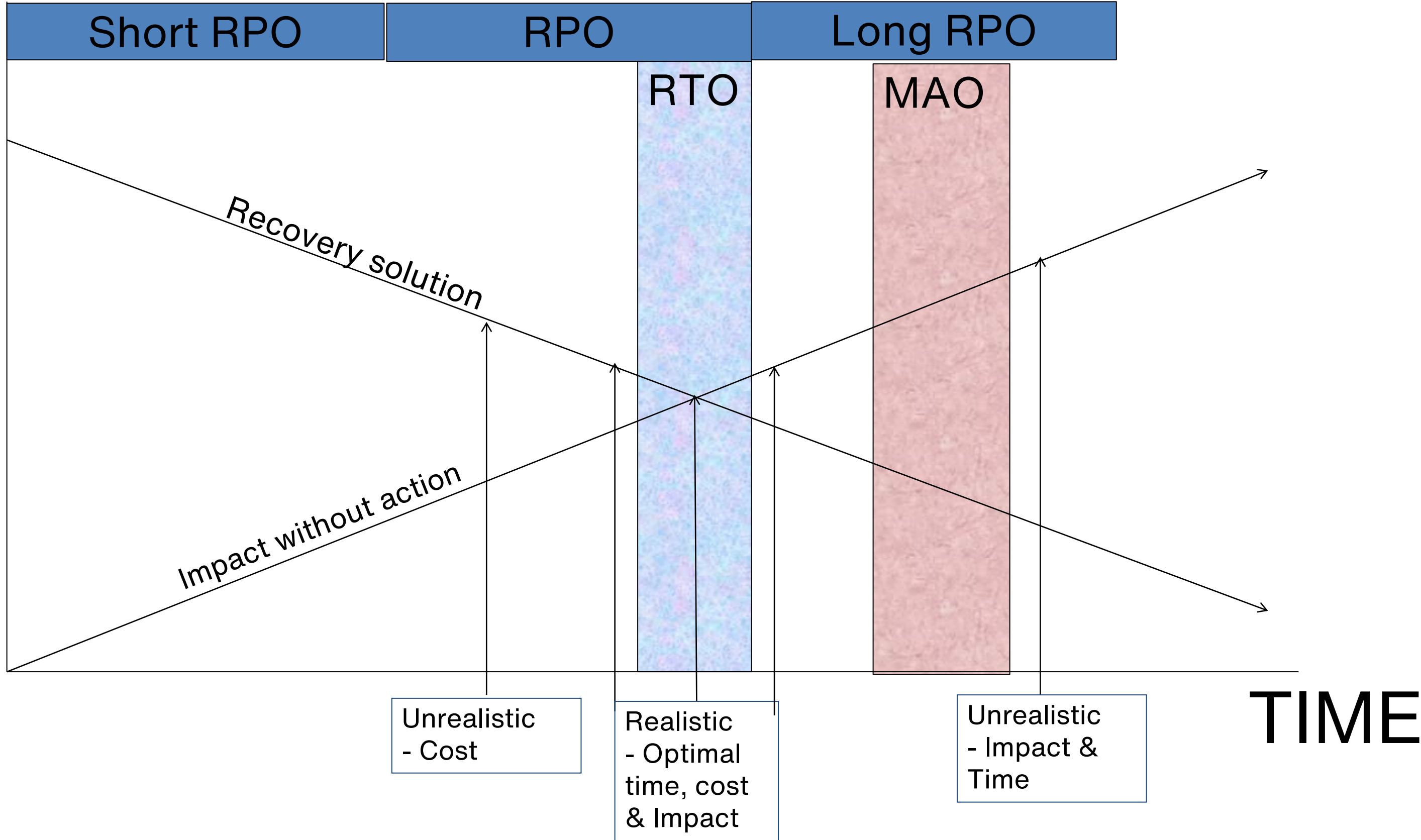
- Attempt to reduce the risks and make arrangements for help after an incident;
- Reduce all risks to the point where you should not need outside help;





# Cost / Impact of your Strategy

## COST/IMPACT



# Step 4: Develop your Plan

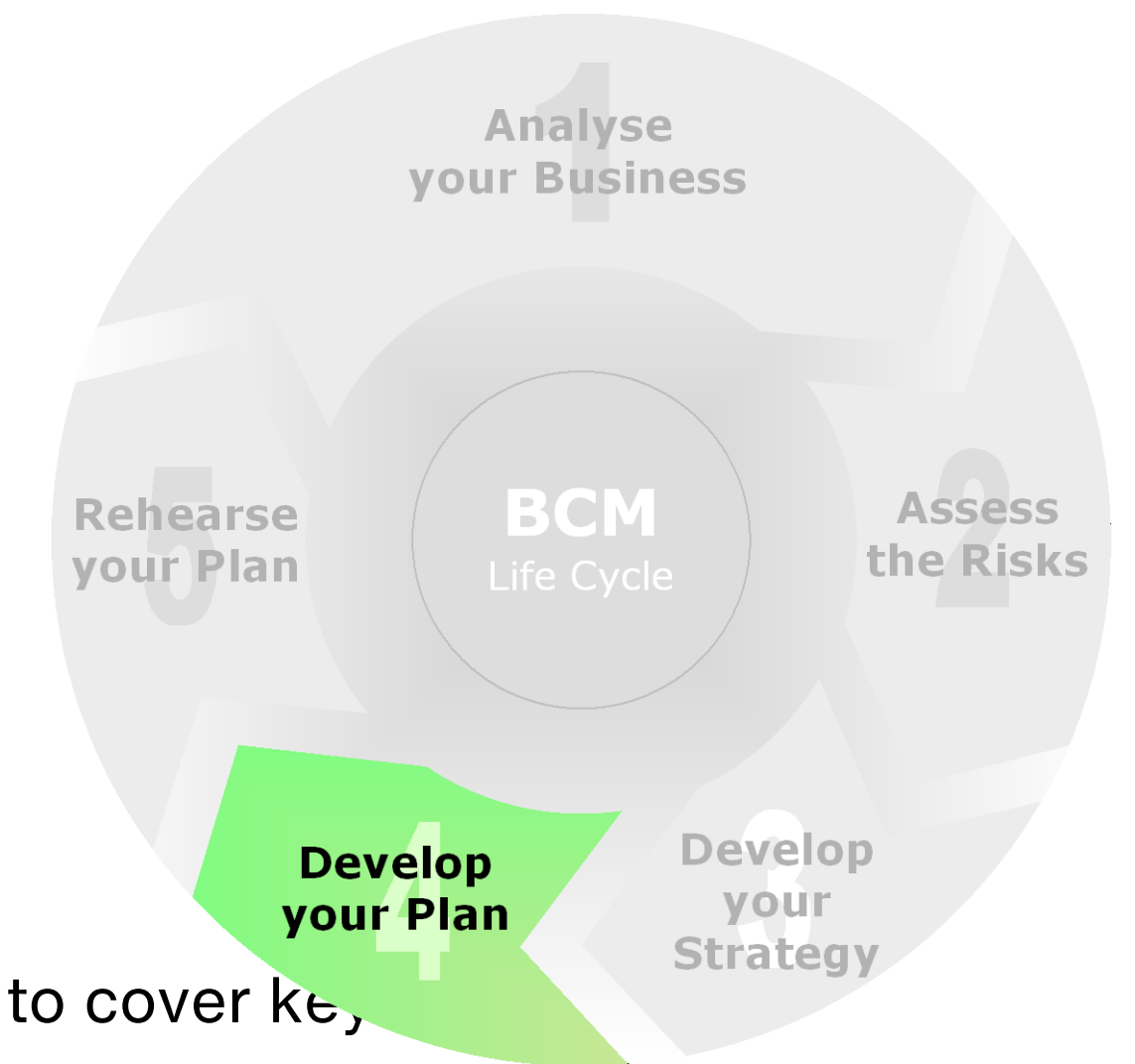
## Visualise your plan

### Setup

- Make it clear that you have consulted throughout the business;
- Use non-technical language that everyone can understand;

## Contents

- Make it clear who needs to do what, and who takes responsibility for what. You should always include deputies to cover key roles;
- Use checklists that readers can follow easily;
- Include clear, direct instructions for the crucial first hour after an incident;
- Include a list of things that do not need to be thought about until after the first hour;
- Agree how often, when and how you will check your plan to make sure it is always a 'living document'.
- Update your plan to reflect changes in your organisation's personnel and in the risks you might face.
- Make your plan simple without being simplistic;
- Plan for worst-case scenarios. If your plan covers how to get back in business if a fire destroys your site, it will also work if only one building is destroyed;
- Match your plan to your people;





# Step 4: Develop your Plan

## Include information from outside your business

- Emergency Planning Officer: find out what your local authority would do in response to a major incident;
- Emergency services: ask the fire brigade what they will want to know from you during a major incident;
- Neighbouring businesses: would a major incident on their premises affect you and vice versa? How can you help each other?
- Utility companies: telephone, electricity, water, gas. Find out what they will need to know if your business is involved in a major incident;
- Suppliers and customers: how will you contact them to tell them you have been affected by a major incident? Who will be affected by your decisions? Involve them if you can;
- Your insurance broker/company: what information do they need from you? Do you need their permission to replace damaged critical equipment immediately?
- Public relations: develop, coordinate, evaluate and exercise plans to handle media during crisis situations;

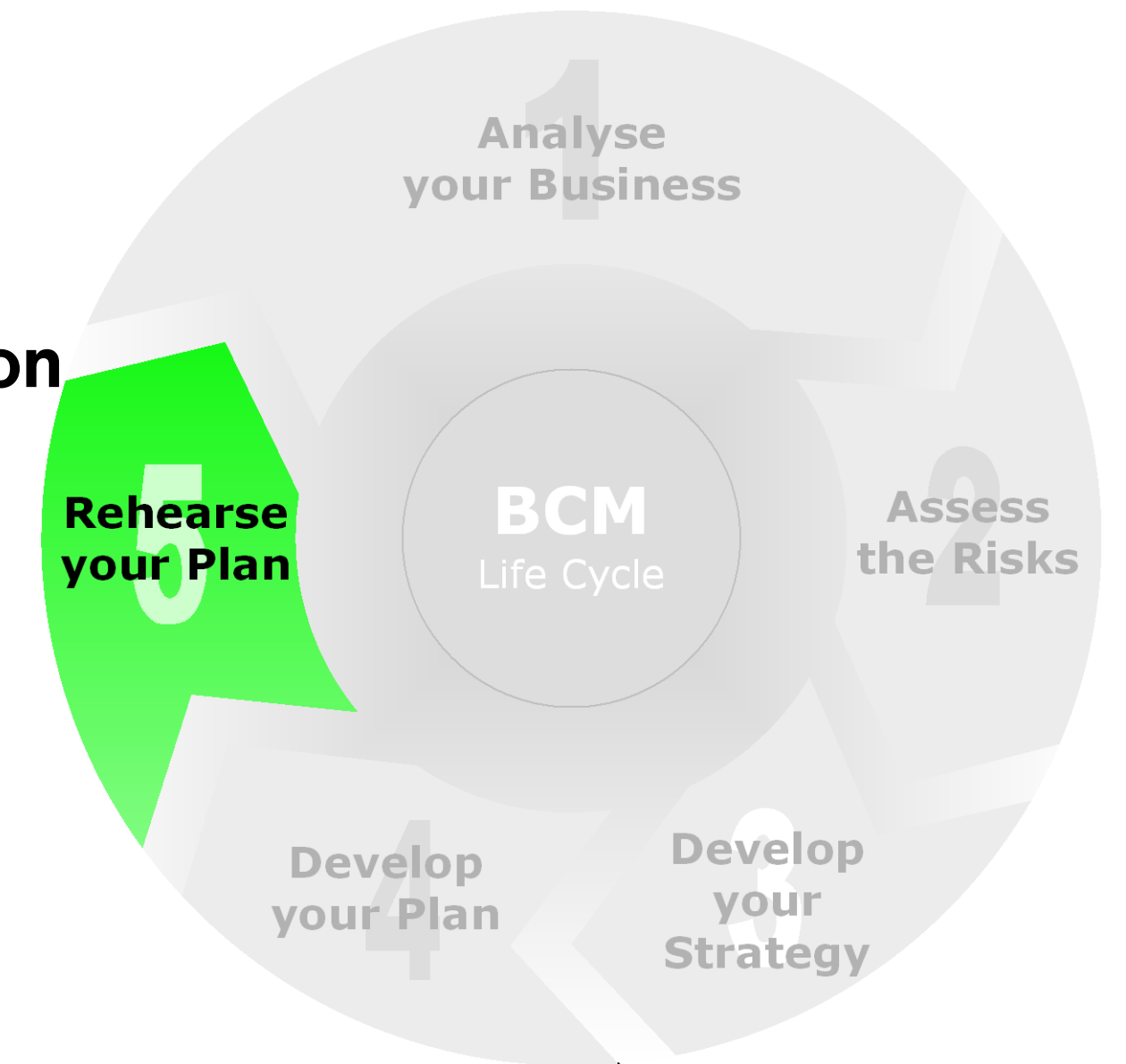


# Step 5: Rehearse your Plan

## Your plan is a living document

Sometimes, you only discover any weaknesses in a plan when you put it into action

- Rehearsal helps you confirm that your plan will be connected and robust if you ever need it;
- Rehearsals are good ways to train staff who have business continuity responsibilities;
- You can rehearse without disrupting people's work;





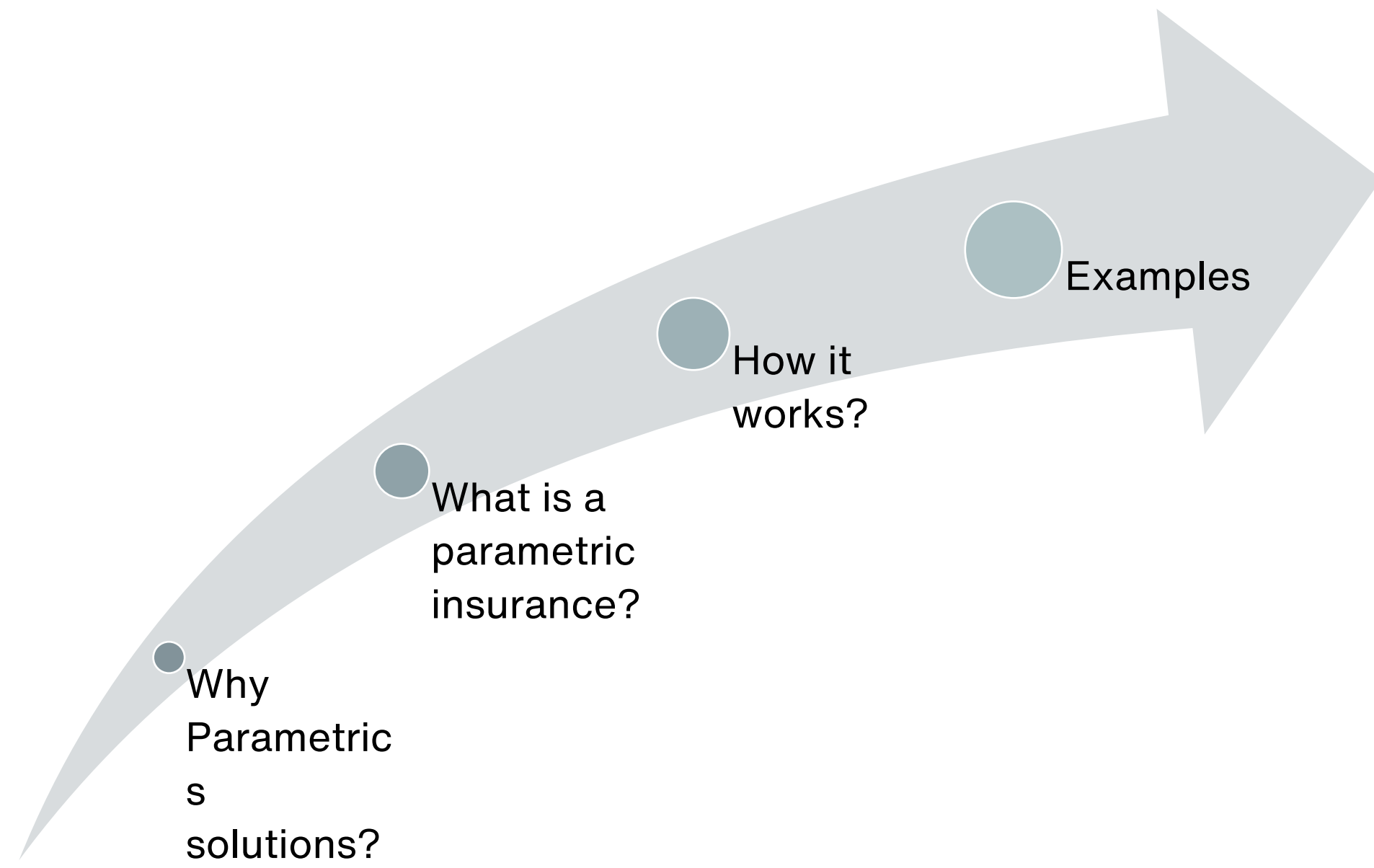
# 3

## Why a Parametric Solution





# Parametric Coverage Agenda





# Why a Parametric Solution?

Protection against economic arising out of a natural disaster.

**It's not a substitute for Traditional Property Insurance, it's a supplement that brings LIQUIDITY\*:**

**These financial losses could be, but are not limited to:**

- **Any economic loss** that arise after the passing of a named windstorm or a Nat Cat event
- Maintain financial projections
- Brings continuity to an operational process (E.g. Cleaning costs, critical equipment)
- Damage to property or business interruption (stand-alone)
- Damage to property covered in a traditional property insurance that falls within the deductible
- Pay Vendors (CBI)
- Fix assets not covered by traditional insurance
- Debt requirements
- Extra an Extraordinary Expenses not commonly covered under Traditional Insurance

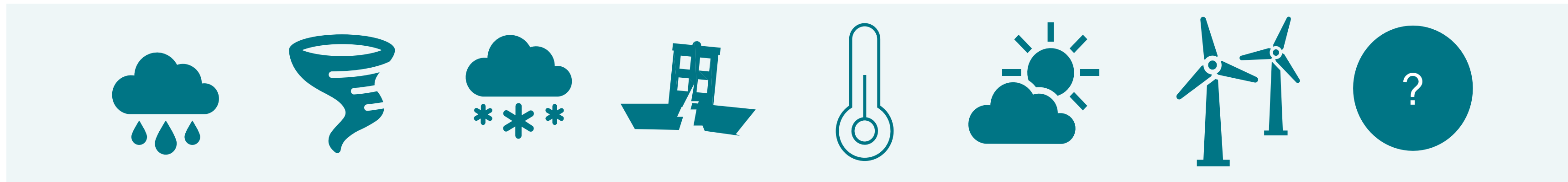
TOTAL DISCRETION TO THE USE OF THE PAYMENT





# What is a Parametric Solution?

- Risk transfer mechanisms based on **INDEXES**
- The coverage is triggered after the occurrence of **an event that exceeds certain parameters** defined in the contract.



- The payment depends on a physical parameter, **not on a loss adjustment.**
- An independent third party determines that the agreed parameter has been exceeded.
- They have previously agreed **PAYMENT STRUCTURES** according to predefined conditions.

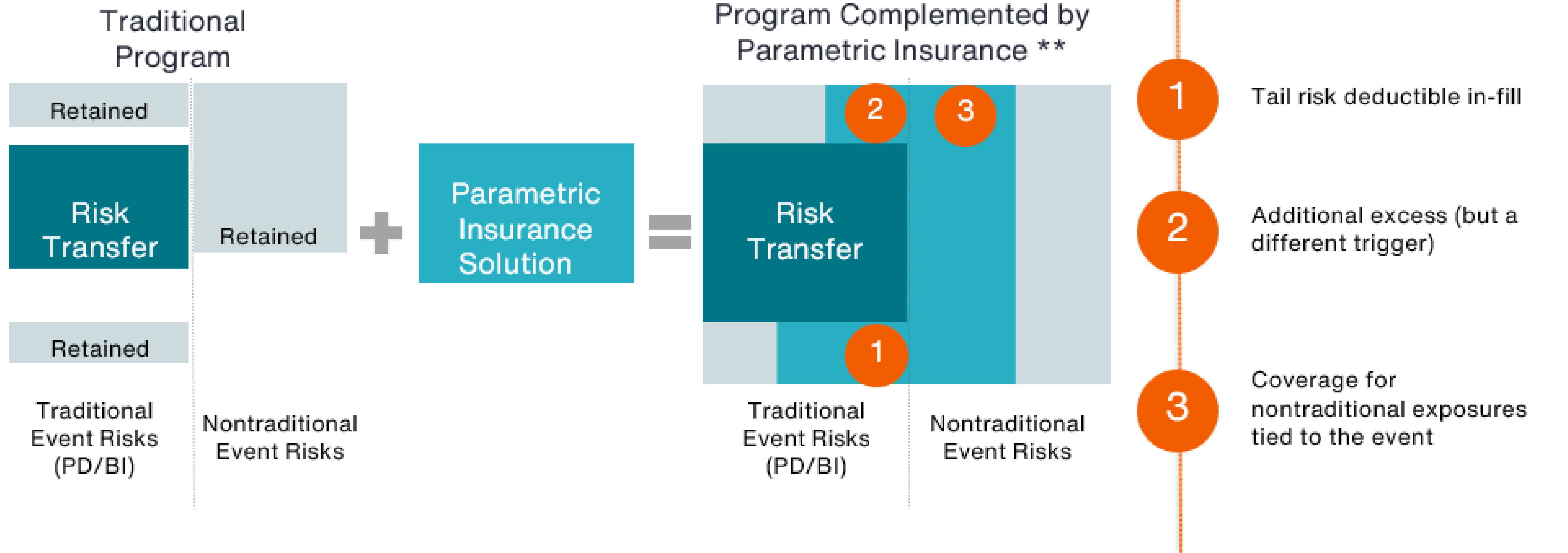
Hurricane Category	Indemnity in % of Policy Limit
CAT 1	0%
CAT 2	0%
CAT 3	20%
CAT 4	40%
CAT 5	100%



# Parametric Solutions: Interplay With Traditional Indemnity

Focus as a Supplement Rather Than a Replacement

Parametric Insurance as a Traditional Insurance Complement:



# How it works?



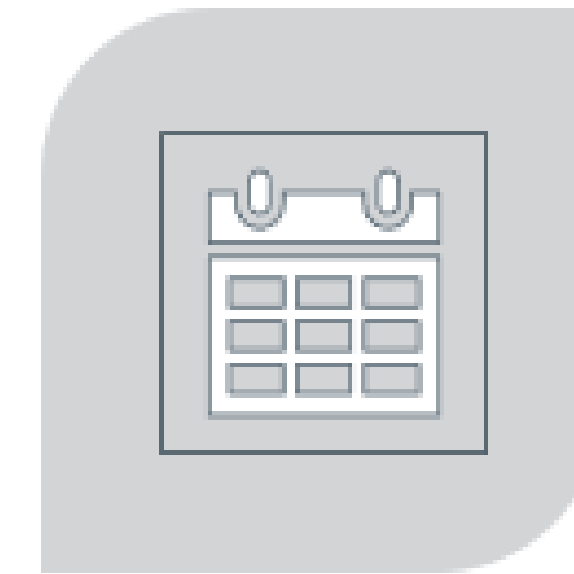
CATASTROPHIC EVENT  
OCCURS



THE INTENSITY IS  
VERIFIED BY A THIRD  
PARTY THROUGH  
DEVICES, MODEL OR DATA



IF THE REPORTED EVENT  
MEETS THE ESTABLISHED  
PARAMETER, THE LOSS  
POTENTIAL IS  
CALCULATED



THE PAYMENT IS ISSUED  
IN A SHORT PERIOD (30  
TO 60 DAYS) AND YOU  
SEND EVIDENCE OF LOSS  
WITHIN A PERIOD OF UP  
TO ONE YEAR



# 4

## Hurricane & Earthquake Solutions

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# Hurricane Rapid Recovery Insurance (HRRI)

- The product is designed as parametric insurance where the Insured Location is the radius around the location of the interest

## Measurement process

- The National Hurricane Center (NHC) provides **6 hourly and landfall measurement points of each hurricane track.** Including: windspeed, storm category, geolocation, and time.
- The relevant hurricane category for the insurance is the highest value of a measurement point:
  - a) before the Insured Location
  - b) within the Insured Location
  - c) after the Insured Location





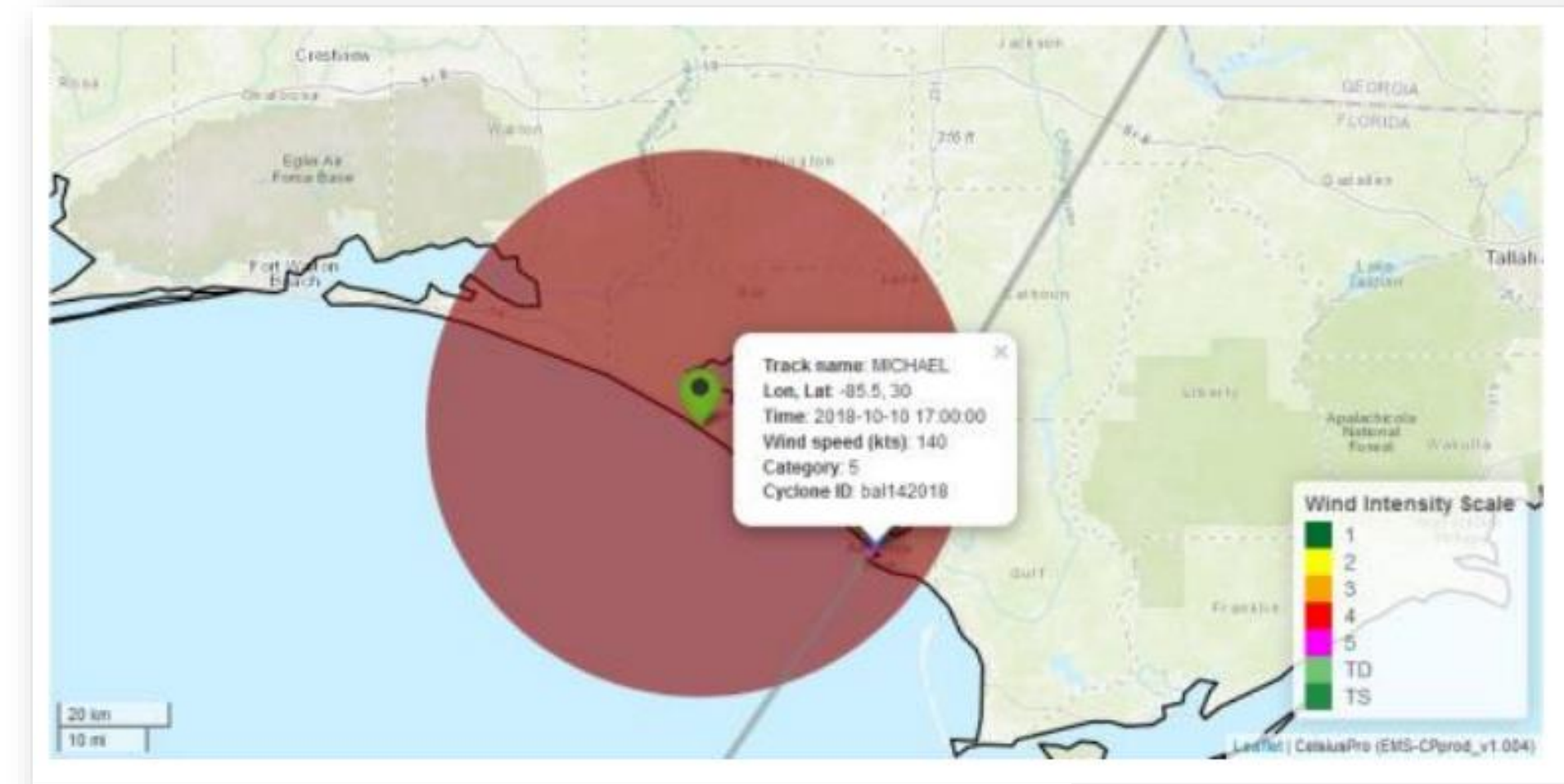
# Examples of Payout

## Scenario 1:

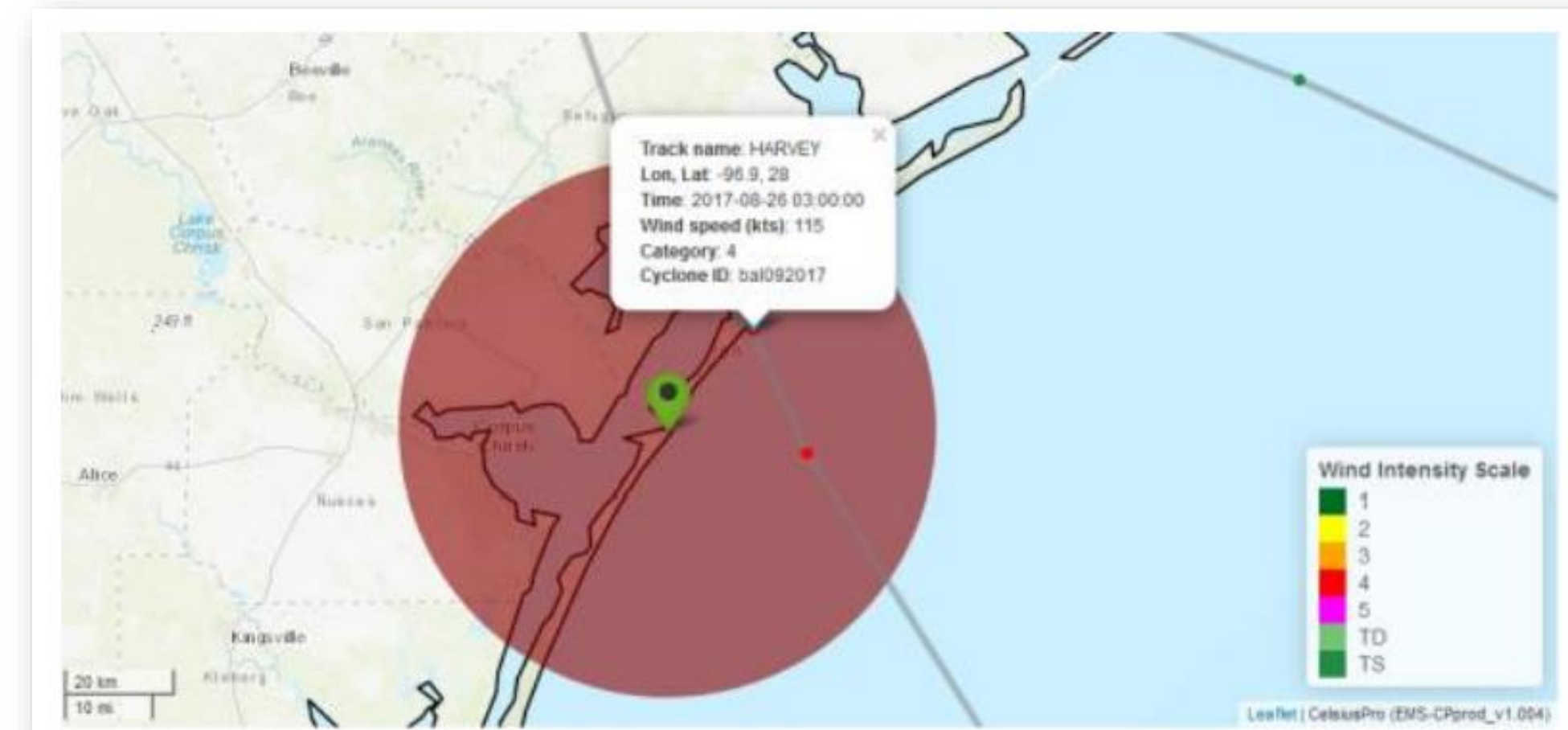
- A shop owner in Panama City purchased a Parametric Hurricane Cover for the storm season with a **Policy Limit of \$1,000,000**
- The Insured Location is a **circle with 40 miles radius** with the shop location as the Center Point
- Hurricane Mike intersected the Insured Location as **Category 5 Storm**
- The owner receives **\$1,00,000 payout**

## Scenario 2:

- A boat rental company in Port Aransas TX purchased a Parametric Hurricane Cover for the storm season 2017 with a **Policy Limit of \$500,000**
- The Insured Location is a **circle with a 40 miles radius** around the harbor
- Hurricane Harvey intersects the Insured Location as a **Cat 4 storm.**
- The Boat rental receives **\$200,000 payout**



Hurricane Category	Indemnity in % of Policy Limit
CAT 1	0%
CAT 2	0%
CAT 3	20%
CAT 4	40%
CAT 5	100%

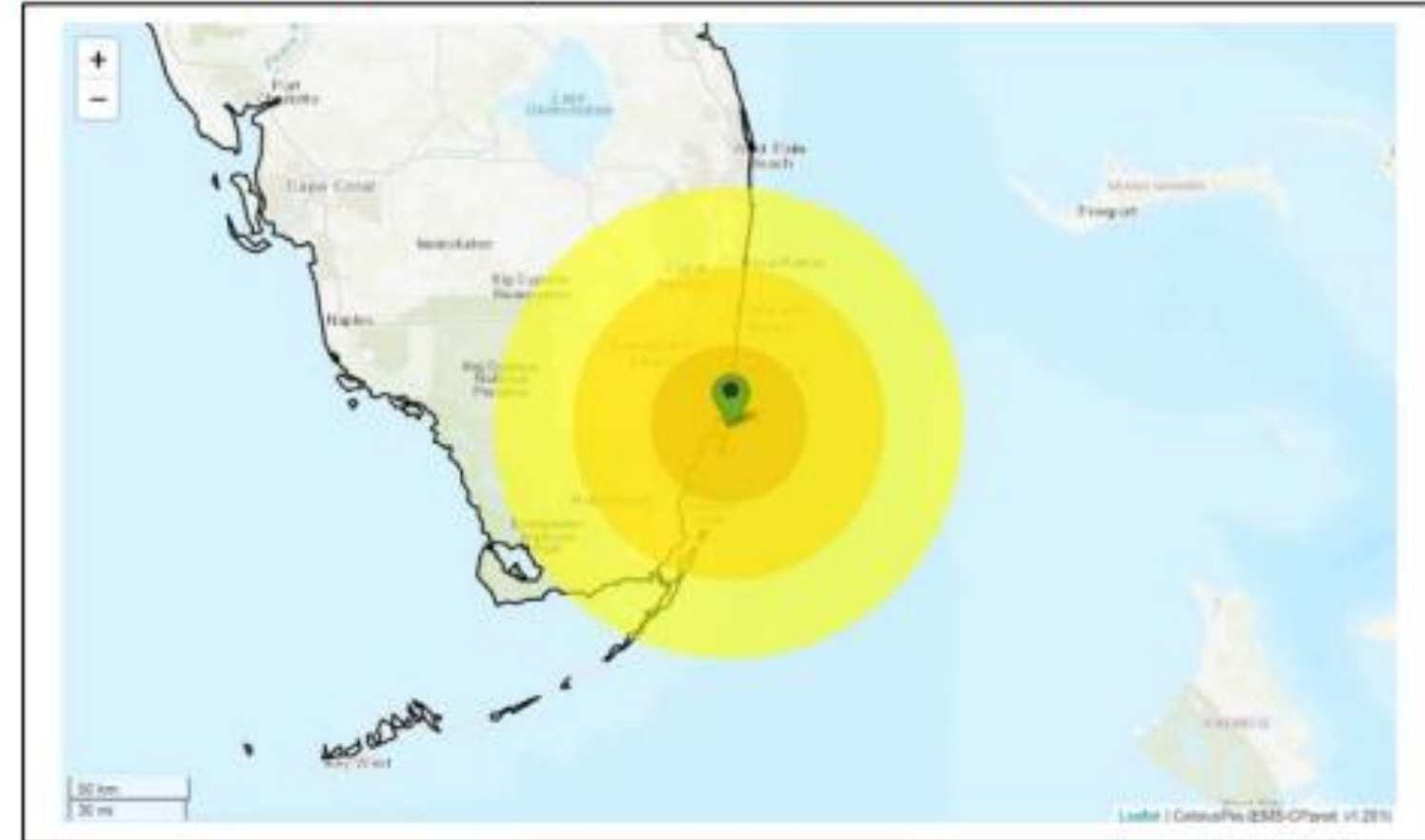




# Single, Double or Triple Circle

## Insured Location Triple Cover

Insured Location: 20-, 40- and 60-miles radius



## HRRI Event Coverage Table Triple Cover

Hurricane Category	20 miles radius Indemnity in %	40 miles radius Indemnity in %	60 miles radius Indemnity in %
CAT 1	0%	0%	0%
CAT 2	10%	0%	0%
CAT 3	20%	20%	10%
CAT 4	30%	40%	20%
CAT 5	100%	100%	30%

Each circle is calculated separately, and the total payout is the sum of all payouts per circle, limited to 100%.

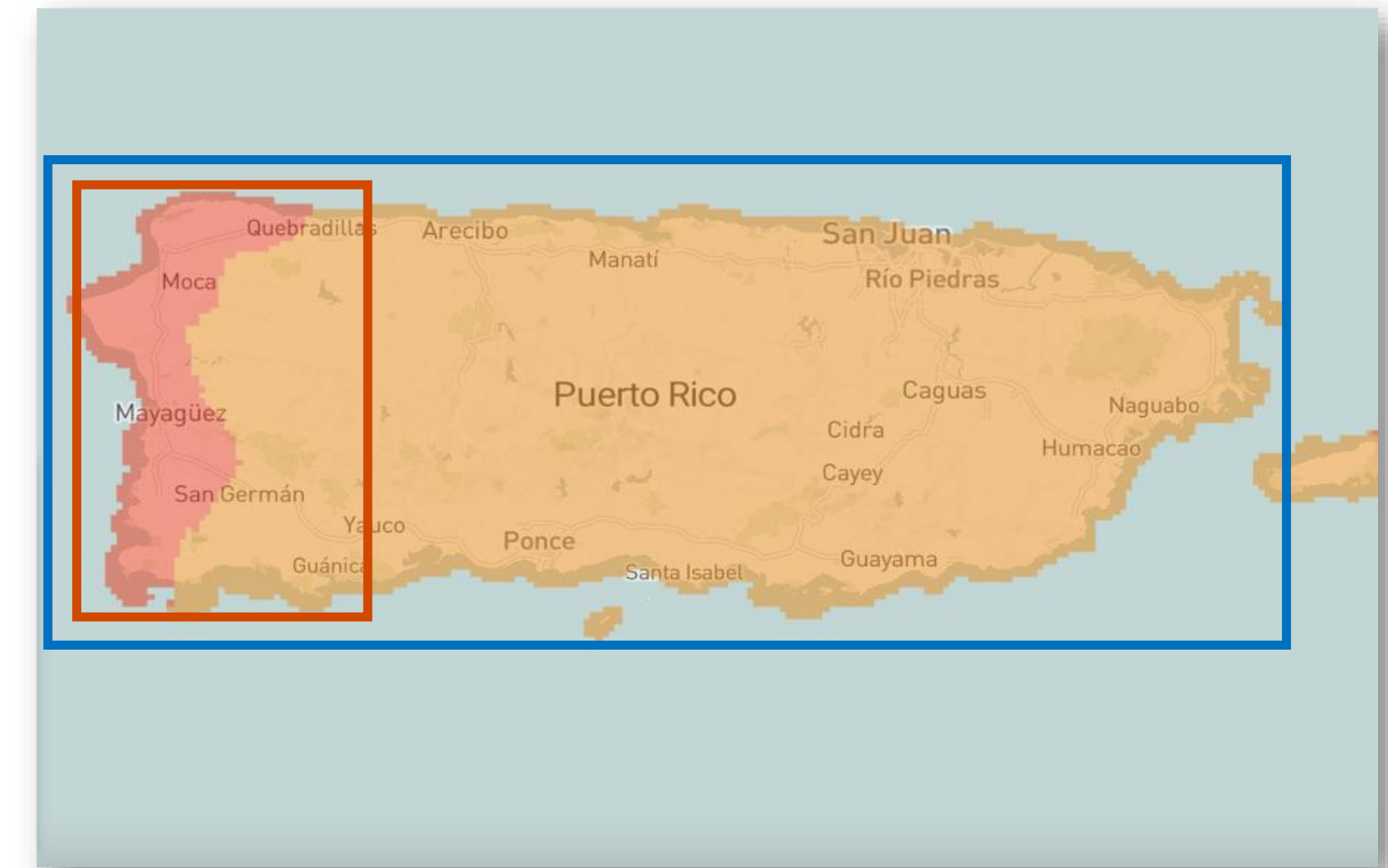
### EXAMPLE

- ✓ Triple Cover - a storm intersects with the 60m and 40m circle but not the 20m circle.
- ✓ The 60m circle and the 40m circle payouts are summed up, limited to 100% overall payout.

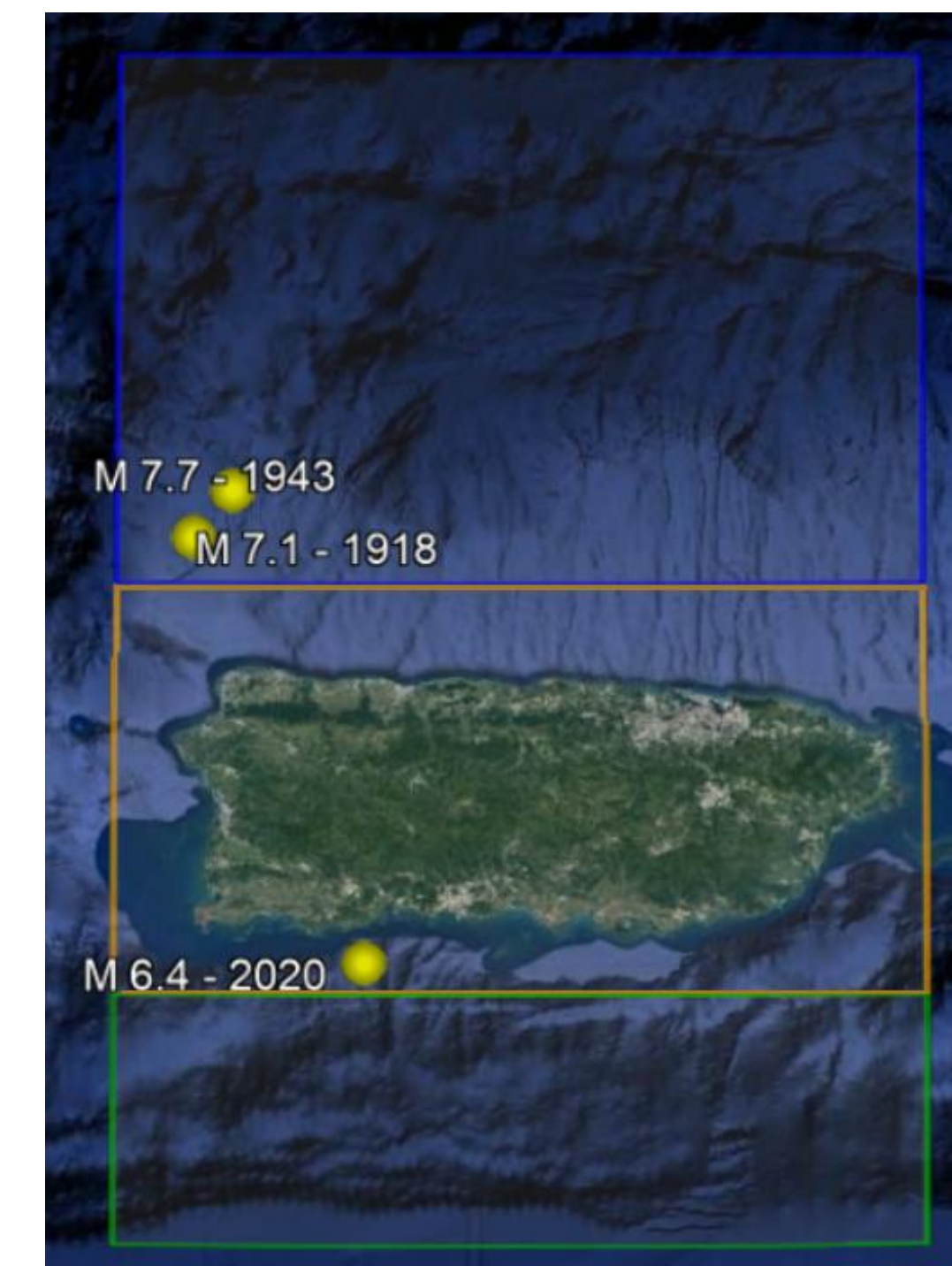


## Earthquake

- Location:
  - Option A) Country Box
  - Option B) Differentiated boxes based in the seismic exposure and concentration of assets
  - Option C) Onshore and Offshore boxes
- Payment Structure: Based on the level of magnitude selected by a client



(1) Magnitud	Caja Oeste	Caja del resto el país
<6.4	0.0%	0.0%
6.4	25.0%	0.0%
6.5	30.0%	0.0%
6.6	35.0%	0.0%
6.7	40.0%	0.0%
6.8	45.0%	0.0%
6.9	50.0%	0.0%
7.0	60.0%	0.0%
7.1	70.0%	25.0%
7.2	80.0%	30.0%
7.3	90.0%	40.0%
7.4	100.0%	50.0%
7.5	100.0%	60.0%
7.6	100.0%	70.0%
7.7	100.0%	80.0%
7.8	100.0%	90.0%
7.9	100.0%	100.0%



(1) The epicenter needs to be clouted inside the box.



# Railways (Lengthwise assets)

- **Client:** Transportation company
- **Motivation:** Covers loss of income without the condition of direct damage to physical assets. (E.g.,: Interruption due to seismic safety alerts). Likewise, it restores the connectivity expenses derived from the stoppage of activities (E.g., rental of other vehicles).
- **Structuring:** Considers the train stations as coordinates to measure the seismic intensity
- **Calibration:** Limit divided as follows
  - ✓ 1<sup>st</sup> section - highest flow of transit: 60%
  - ✓ 2<sup>nd</sup> section of the highest flow of transit: 30%
  - ✓ Smallest flow of transit: 10%





# Roads

- **Client:** Highway concession
- **Motivation:** Cover construction and operation of the main roads in the next 5 years. Coverage aimed at the expected increase in catastrophic deductibles as construction progresses and exposed values increase.
- **Locations to consider:** According to the zones/regions with the highest concentration of assets, taking distributed coordinates based on critical infrastructure; that is, tunnels, bridges, overpasses, among others.
- **Covered events:** events with intensities recorded in the selected locations greater than 6.0 on the Mercalli scale.
- **Calibration:** Schedule of works vs. Limit (multianual coverage).





# Renewable Energy

- **Client:** Solar farm
- **Motivation:** Economic compensation in periods of low sunlight to mitigate the loss of income from energy sales.
- **Calibration:** Meteorological index based on solar radiation data from third parties.

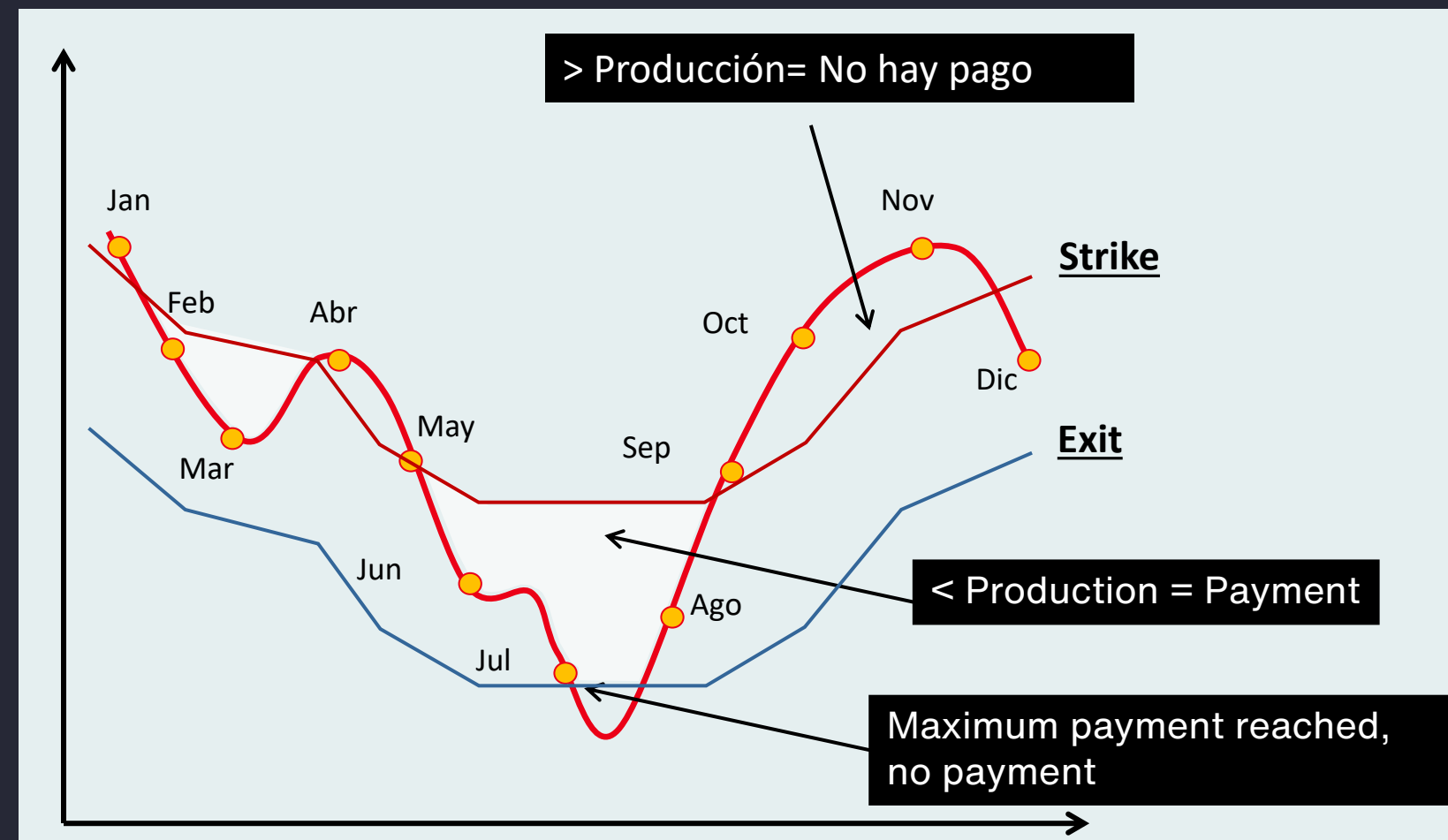
## Monthly radiation

Month	Monthly adjustment factor
1	1.9575
2	1.6006
3	1.2565
4	1.0643
5	0.9531
6	0.9083
7	0.9286
8	1.0204
9	1.1983
10	1.4693
11	1.8092
12	1.9726

## Eampl:

- Capacity: 50MW
- Period: 1 year
- Power generated: 79,000 MWh
- Price: \$85/MWh
- Limit: \$1M

Monthly Solar Radiation x  
Installed Capacity x  
Adjustment Factor x  
Performance Factor





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# What we learned today!





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Temporada de Huracanes 2022

## ¿Qué podemos hacer para estar preparados?

### Temporada de Huracanes 2022

Durante los últimos años, el mundo ha sido testigo de innumerables desastres naturales, costosos y perturbadores. Es un hecho que los años más cálidos registrados han ocurrido en los últimos años. Los huracanes se han vuelto cada vez más peligrosos al moverse con mucha más lentitud sobre tierra firme, además generan más precipitaciones y producen marejadas ciclónicas más devastadoras a lo largo de las costas.

A medida que la humanidad se da cuenta de que los efectos del cambio climático son una realidad, ¿qué pueden hacer las organizaciones para abordar los desafíos inmediatos de un mundo volátil?

### Datos del pasado año 2021 ante el calentamiento global:

☀️ **1.51° F** por encima del promedio del siglo XX (NOAA); el **sexto** año más cálido registrado en temperaturas terrestres y oceánicas desde el 1880.

En un mundo complejo y cada vez más interconectado, las compañías deben prepararse con anticipación para mitigar el impacto climático e identificar y modelar los riesgos futuros.

🌡️ **130° F** la temperatura del 9 de julio de 2021 en Death Valley, California (EE.UU.) fue **extraordinariamente la temperatura más alta jamás registrada de manera confiable en la Tierra.**

Si bien es prácticamente imposible predecir absolutamente todos los posibles ámbitos del

### Find office locations

-- Select a Location --

-- Select a City --

Submit

Plan de Acción Temporada de Huracanes 2

### Guía informativa para la temporada de huracanes



### Business Continuity Checklist



AON

## Guía Informativa

para la Temporada de Huracanes 2022



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# Business Continuity Checklist

A Primer for Hurricane Planning & Response in a COVID-19 Era



- **Salud Industrial** ofrece cinco (5) opciones de cubierta en planes y beneficios de salud orientadas a promover el bienestar de los socios de PRMA y sus empleados, con tarifas fijas aplicables a compañías de 2 a 99 empleados.
- Cuenta con un producto disponible para patronos desde 1 empleado en adelante con flexibilidad al momento de la suscripción del plan.
- **Salud Industrial** es responsable de la salud de sobre 1,000 vidas a través de más de 75 socios que disfrutaron de este beneficio.
- **Salud Industrial** ofrece tarifas fijas por cubierta (no por edad), convirtiéndose en una de las mejores opciones en el mercado de seguros de salud en Puerto Rico.
- Las compañías con 10 empleados asegurados o más pueden elegir hasta dos (2) alternativas; el proceso de suscripción es flexible y rápido.

### ¿Qué incluye el programa?

**Plan Médico: MCS** - De acuerdo a su selección, obtendrá cubierta médica, farmacia, dental, cubierta de gastos médicos mayores, seguro de vida y cubierta de visión básica o ampliada, junto a iniciativas de bienestar y salud mental, con asistencia y orientación disponible 24/7. Algunas consideraciones importantes son:

- Todos los planes cubren trasplante de órganos para personas menores de 65 años, excepto la cubierta PRMA Diamante Fit
- Las cubiertas PRMA Diamante 2, 3 y 4 incluyen Seguro de Vida (\$5K y \$10K)
- La cubierta PRMA Diamante 4 incluye cubierta de Ortodoncia

### Beneficios adicionales que se ofrecen dentro del programa

- **Equipo dedicado.** A través de Aon, los socios participantes del plan médico tienen acceso a expertos que le apoyarán en el proceso de servicio con MCS para el manejo de transacciones, dudas con beneficios y apoyo con las reclamaciones.
- **Charles.** Durante el año, recibirá invitaciones para orientaciones a través de PRMA. Estas orientaciones ayudarán a aclarar dudas sobre nuevas tendencias del mercado y la importancia del bienestar.
- **Boletín mensual.** Los socios de PRMA recibirán un boletín con distintos consejos de salud, vía correo electrónico.

## Mensajes clave sobre el programa

### Valores añadidos del programa Salud Industrial

- **MCS Alivia**  
Medicina integral y complementaria con terapias que pueden complementar su tratamiento médico tradicional.
- **MCS Care Clubs**  
Programa de cuidado preventivo de salud a través de los centros MCS Care Clubs.
- **MCS Madres y Bebés Saludables**  
Programa orientado al cuidado de la salud de la futura madre y su bebé.
- **MCS Medlines**  
Servicio telefónico gratuito de orientación en salud disponible 24/7.
- **MCS Medlines MD**  
Como parte de su cubierta de beneficio de salud, este programa le permite tener contacto con médicos certificados las 24 horas del día, los 7 días de la semana, a través de la aplicación móvil de MCS.
- **MCS Solutions**  
Programa integrado con cuidado de salud mental y tratamiento para el abuso de sustancias controladas.
- **MCS Steps to Wellness**  
Sesiones de ejercicios, intervenciones educativas, talleres de cocina y visitas al supermercado con profesionales certificados para promover su salud.
- **MCS Rewards**  
Le permite disfrutar de descuentos y ahorros en diversidad de productos y servicios.
- **MCS Asistencia al Viajero**  
Como asegurado de MCS, cuenta con los servicios internacionales de asistencia al viajero que aplican a cualquier parte del mundo mientras este de viaje.



AON



# Aon is in the business of better decisions

Aon exists to shape decisions for the better — to protect and enrich the lives of people around the world. Our colleagues provide our clients in over 120 countries with advice and solutions that give them the clarity and confidence to make better decisions to protect and grow their business.

## 50,000

colleagues around the world

## 120+

countries with Aon clients

Through our experience, global reach and state-of-the-art analytics, we are better able to help clients meet rapidly changing, increasingly complex and interconnected challenges across four areas of need:

Navigating  
new forms  
of volatility

Building  
a resilient  
workforce

Rethinking  
access  
to capital

Addressing  
the  
underserved

## Commercial Risk Solutions

Shifts in technology, economics and geopolitics are creating unprecedented volatility. We help clients identify, measure and manage their risk exposure.

### \$75B+

of bound premium  
placed annually

## Health Solutions

Health is declining, costs are rising and workers have vastly different needs. We help companies improve employee health and wellbeing while managing costs.

### \$180B

of healthcare premium  
directed annually<sup>1</sup>

## Reinsurance Solutions

Businesses, governments and communities need to become more resilient. Our expertise and insight help (re)insurers navigate uncharted territories and create more relevant solutions.

### \$45B+

of bound premium  
placed annually

## Wealth Solutions

Global business is becoming increasingly difficult to navigate. We help employers, fiduciaries and investment officers optimize results and provide a more secure future for their stakeholders.

### \$4.1T<sup>2</sup>

of assets under  
advisement

<sup>1</sup>Includes \$30B of fully-insured premium and \$150B of self-insured premium equivalents.

<sup>2</sup>As of 6/30/2021, includes non-discretionary assets advised by Aon and its global affiliates which includes retainer clients and clients in which Aon and its global affiliates have performed project services for over the past 12 months. Project clients may not currently engage Aon at the time of the calculation of assets under advisement as the project may have concluded earlier during preceding 12-month period.



# Thank You