INNOVATIONS FOR MANAGING DISASTER RISK

Ranit Chatterjee, PhD

Kyoto University

What is innovation

Necessity is the **mother of invention**

Innovation is new knowledge incorporated in products, processes, and services

Is systemic in nature and cross-functional , leads to a change in all or some elements of the system breaking the status quo

Source: Afuah, 1998; Kogabayev and Maziliauskas, 2017

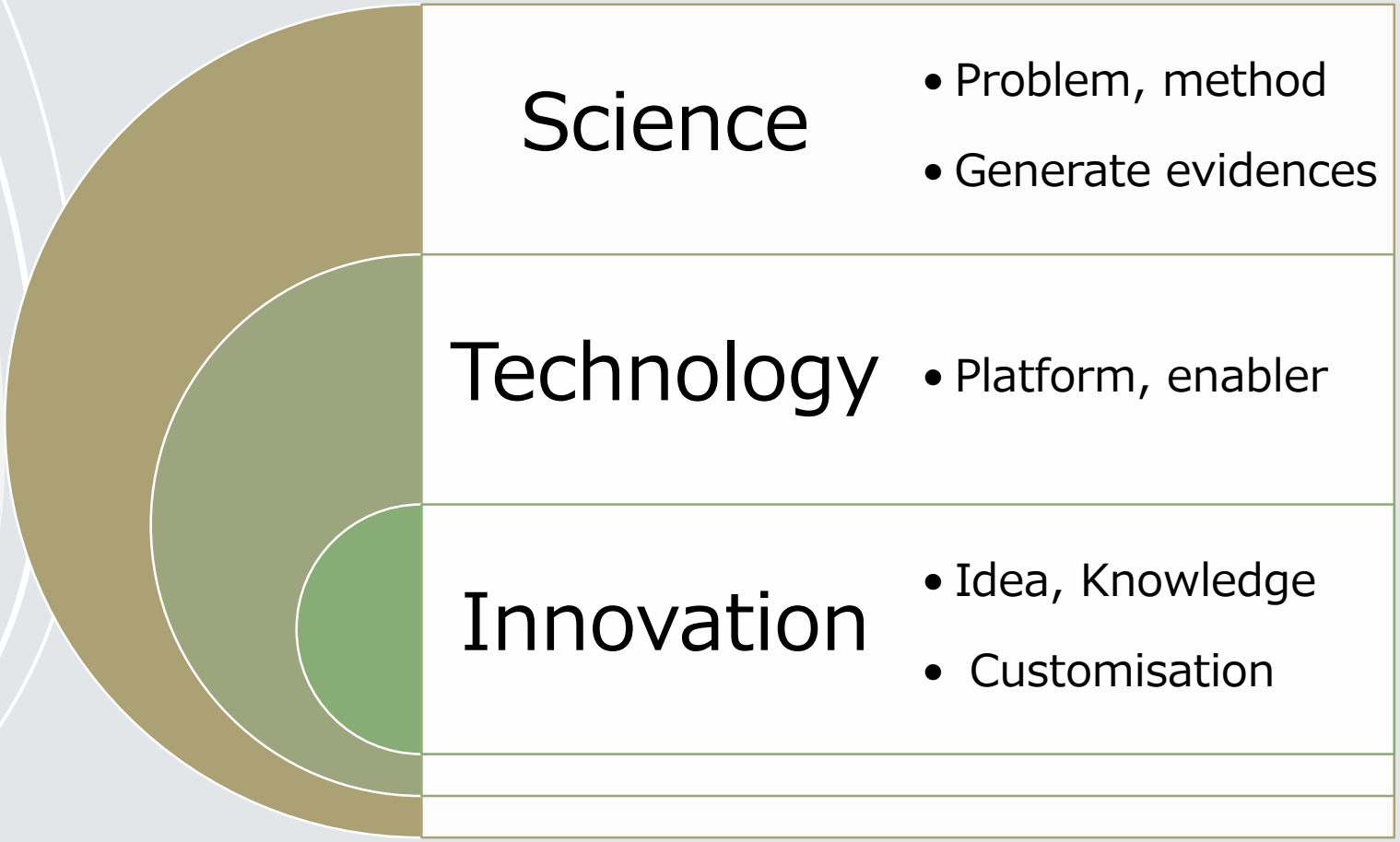
Innovation in Global Policies

- The Hyogo Framework for action 2005-2015 laid emphasis on “use of knowledge, innovation and education for building a culture of safety and resilience at all levels”

- The Sendai Framework for Disaster Risk Reduction 2015-30 further reinforces the use of innovation and S&T for better understanding of risk and addressing gaps, social challenges, disaster risks.

- Further, SFDRR calls for increased investment and enhanced access to innovation and technology

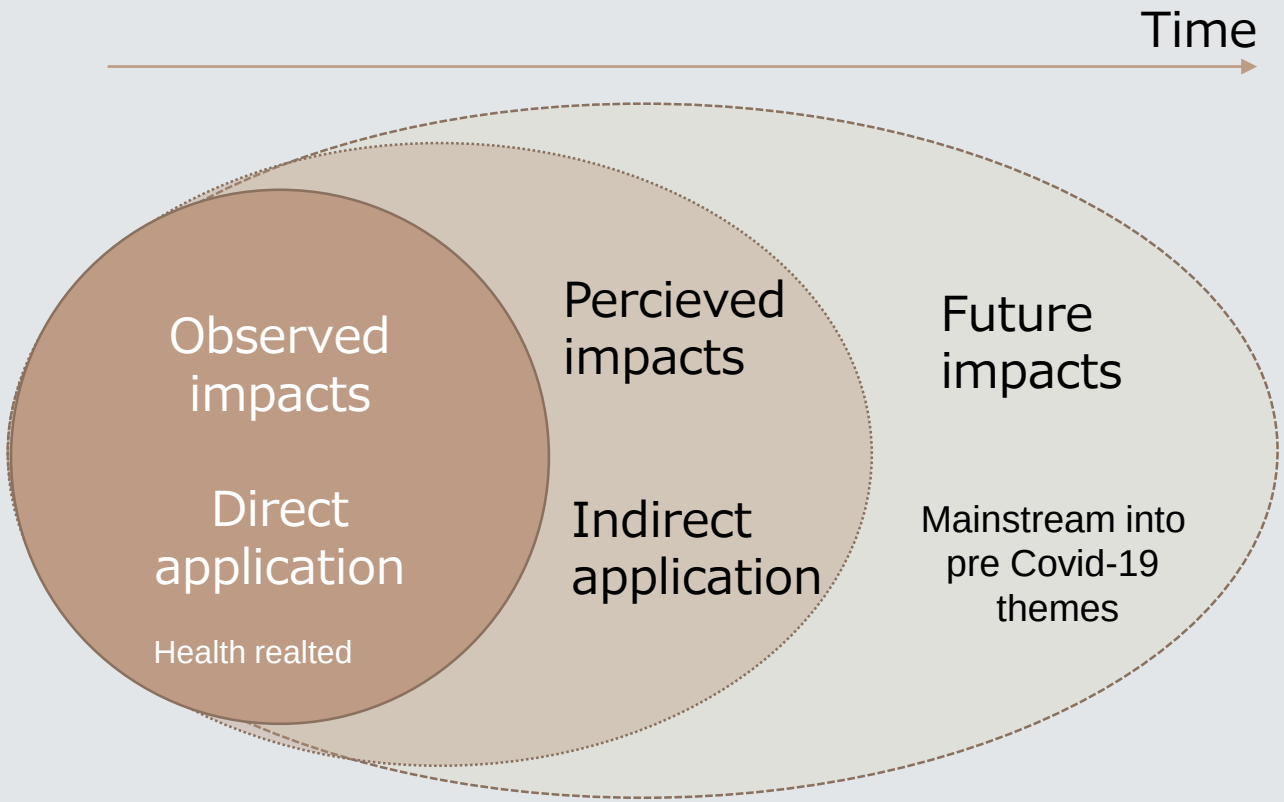
Linking Science, Technology and Innovation



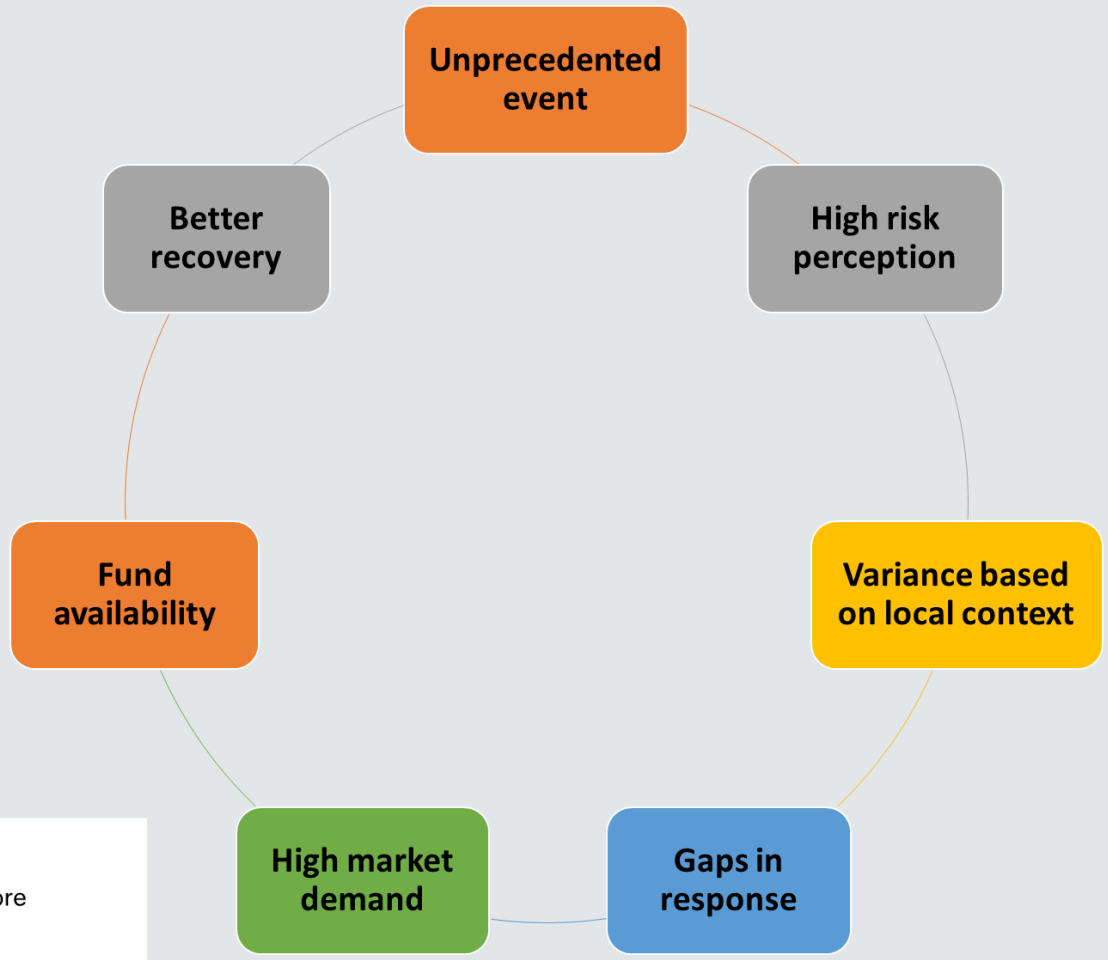
Realm of application

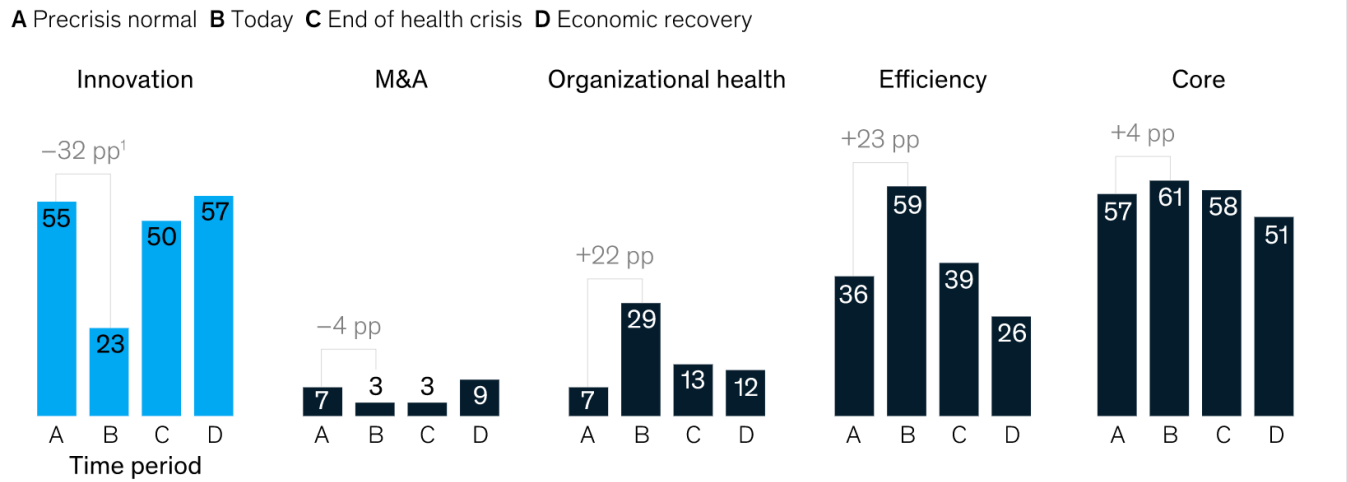
	Low	High
Long term	21 **2. EXPLOITING A MARKET CHANGE** Meeting permanent changes in customer behavior in currently served markets	36 **4. ENVISIONING A FUTURE MARKET** Building a potential for a future market based on changes in customer behavior
Short term	103 **1. RIDING OUT THE STORM** Responding to immediate changes in customer behavior in currently served markets	59 **3. EXPLOITING AN EMERGED MARKET** Switching to a market that has emerged due to emerged customer concerns

Source:Heinonen and Strandvik, 2020



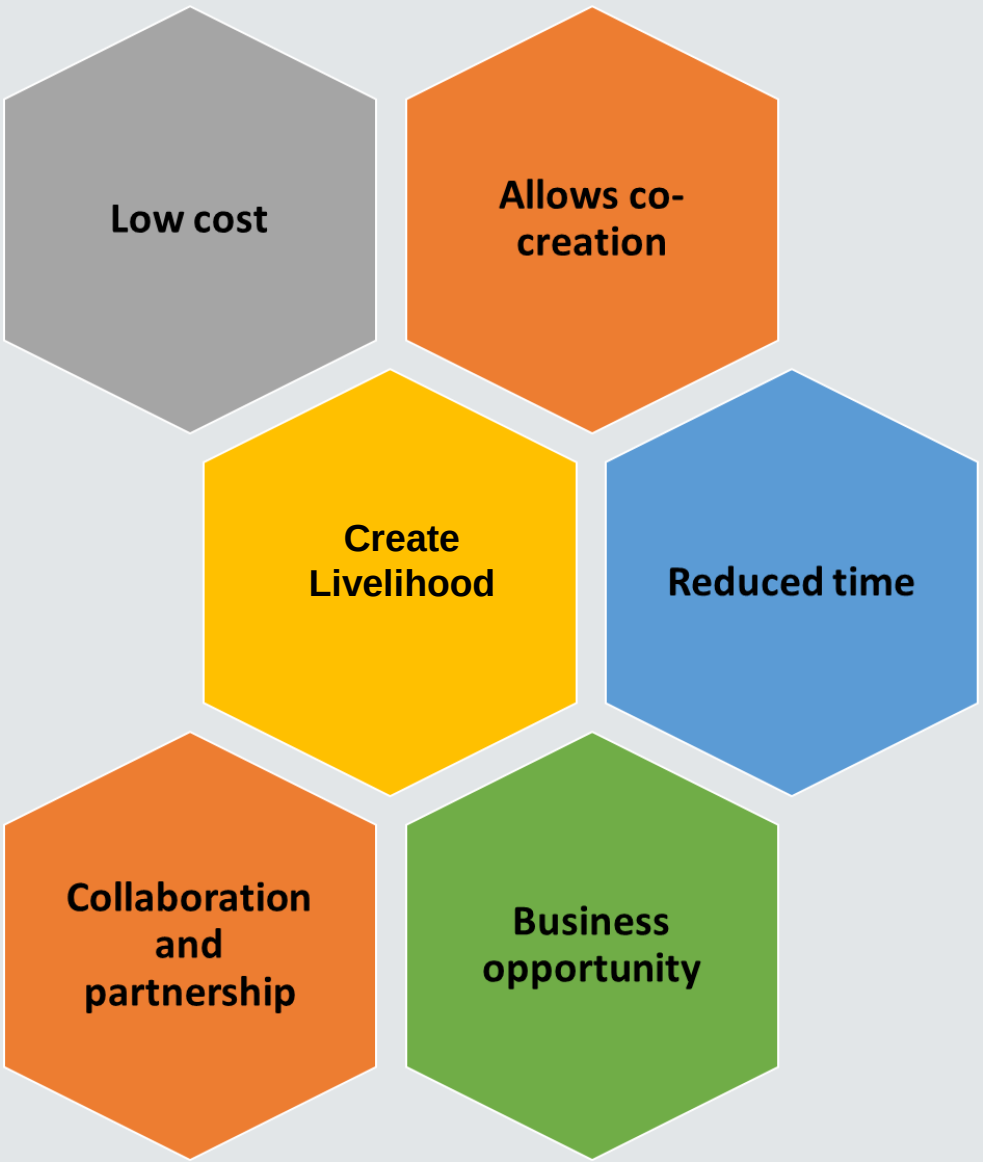
Disaster as an enabler for innovation ecosystem





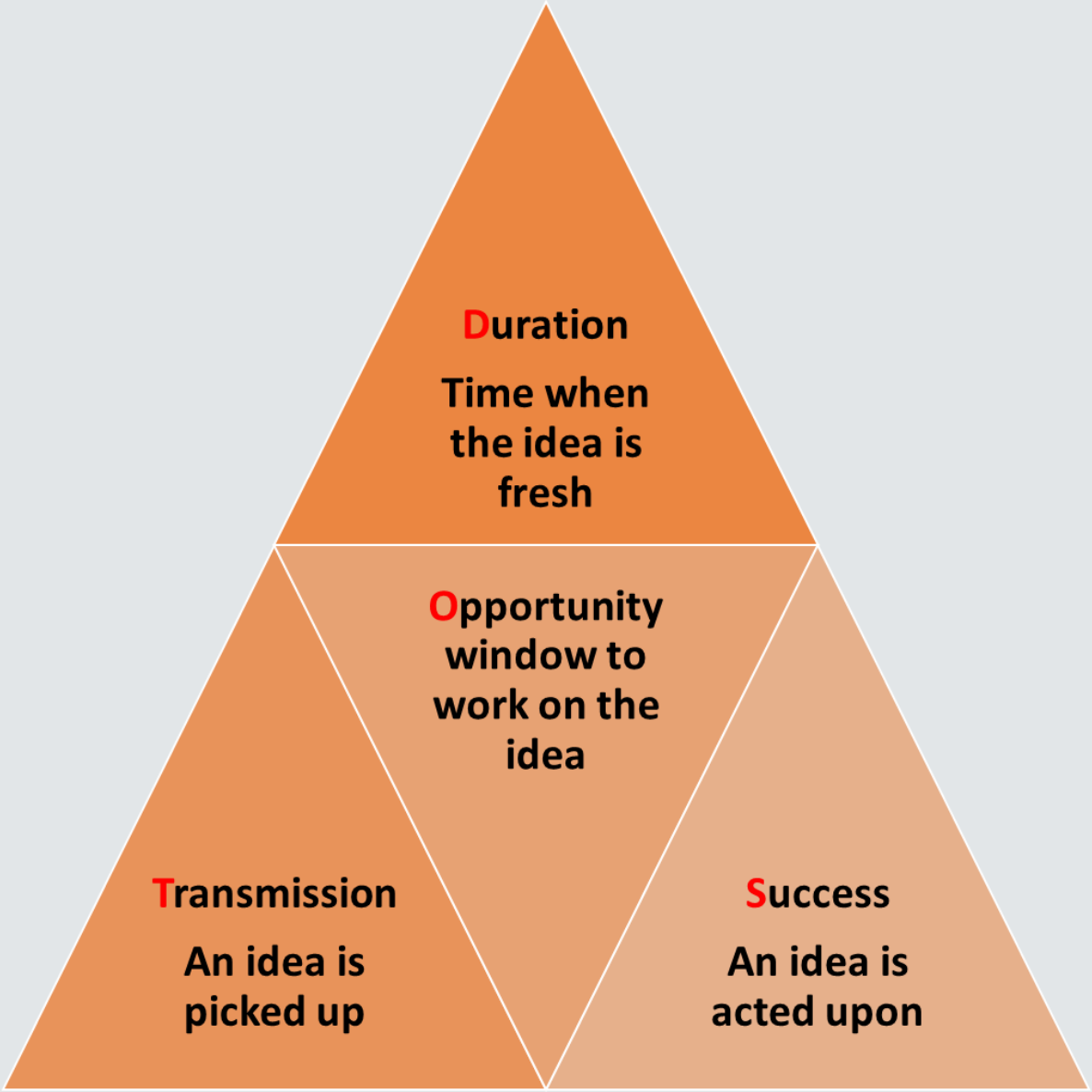
[1]Percentage points.
Source: McKinsey Innovation through Crisis Survey, April 2020

Benefits of innovation



DOST model

for innovation



Source: Adam Kucharski, Nekkei Asia, 2020

Case Study

The Problem

1. The Pandemic has huge impact on the economy
2. The SMEs are the worst affected
3. Many SMEs donot make BCPs
4. Not all BCPs include pandemic risk
5. Data gap and lack of baseline

SMEs- Small and Micro Enterprises

Need For A Comprehensive Tool

1 

Reactive to proactive approach

2 

Support decision making through evidences

3 

Communicate risk to wider audience

Design Considerations

1 Ease of Use

2 Scientific

3 Data privacy

4 Adaptable

5 Scalable

UNDRR

UN Office for Disaster Risk Reduction

COVID-19 RESPONSE

English

This tool is intended to help micro, small and medium-sized enterprises, especially in the informal sector, to develop a basic understanding of their level of risk and is meant to be one tool among many to help enterprise/business owners understand their risk levels & build their resilience.

Quick Risk Estimation (QRE) Tool

For Micro, Small and Medium-sized Enterprises (MSMEs)

About the Tool

Take me to the Tool

In parnership with

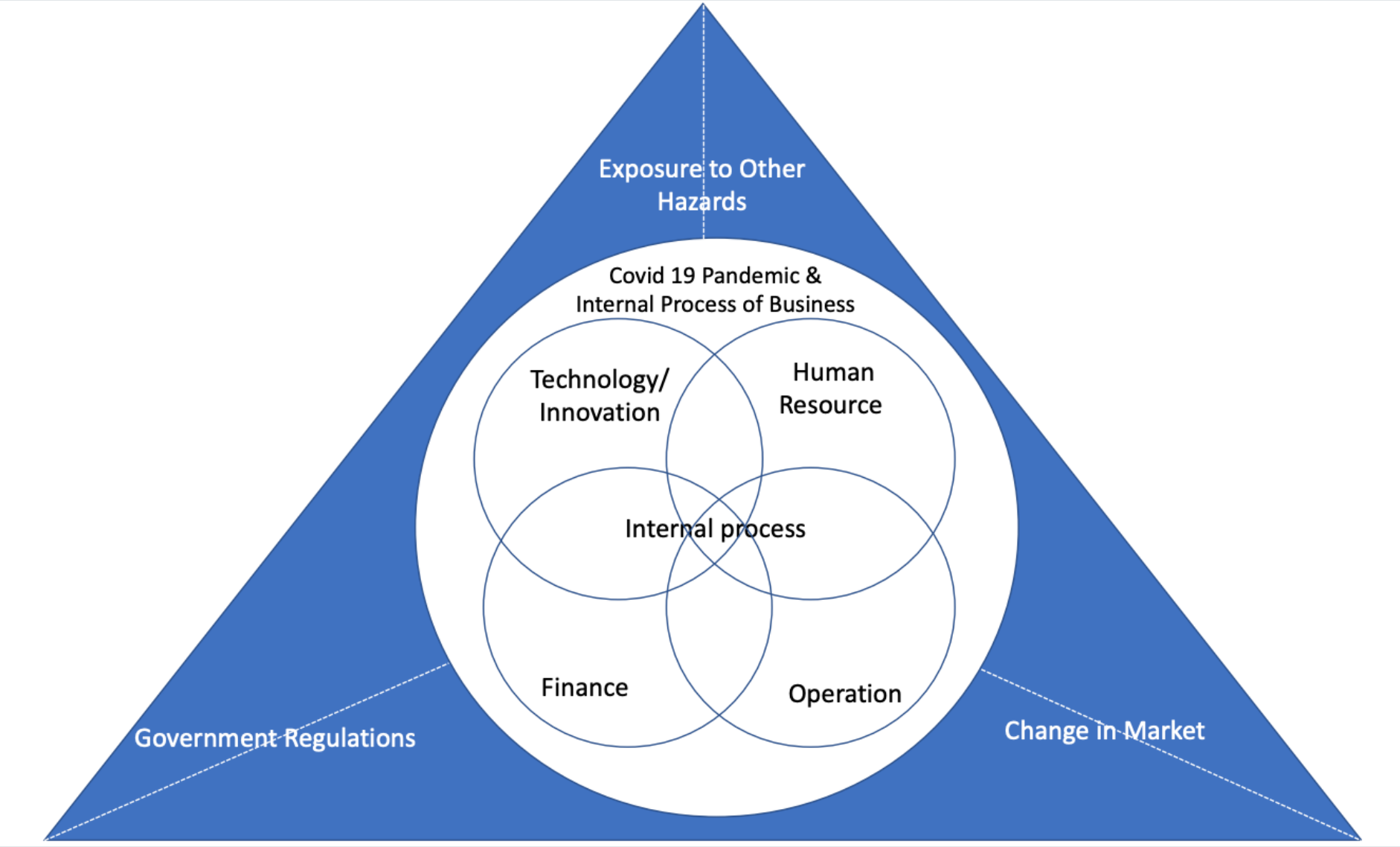
RIKA

PROFECIA LINKS

adpc Asian Disaster Preparedness Center

www.businessqre.net

Conceptual framework

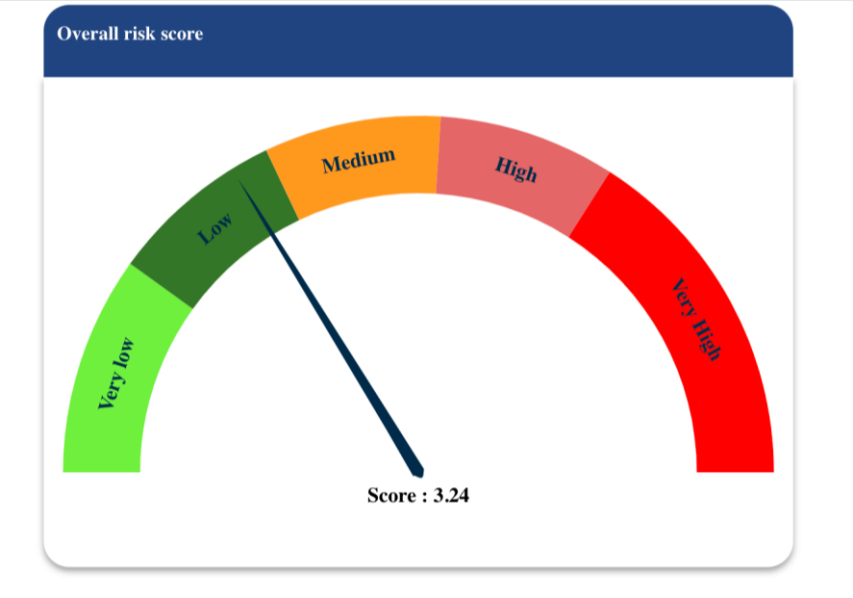


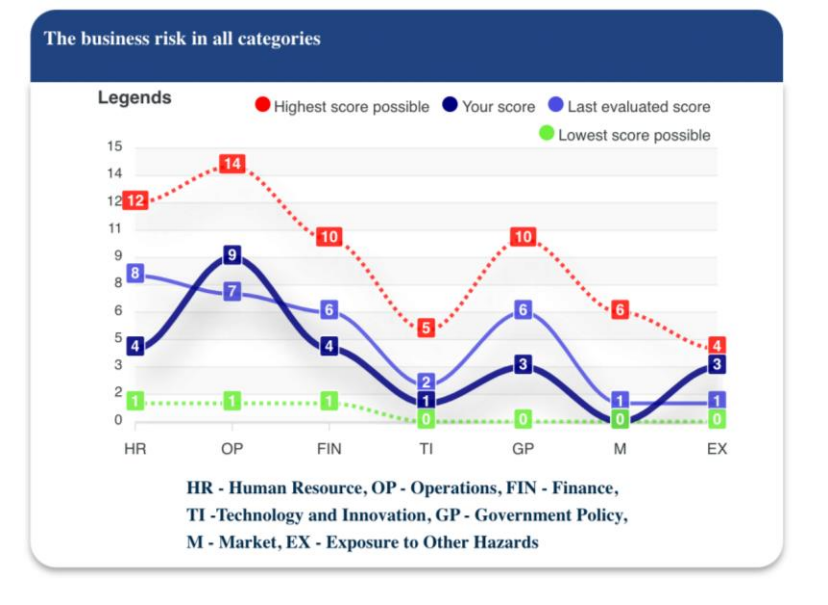
How the QRE Tool works

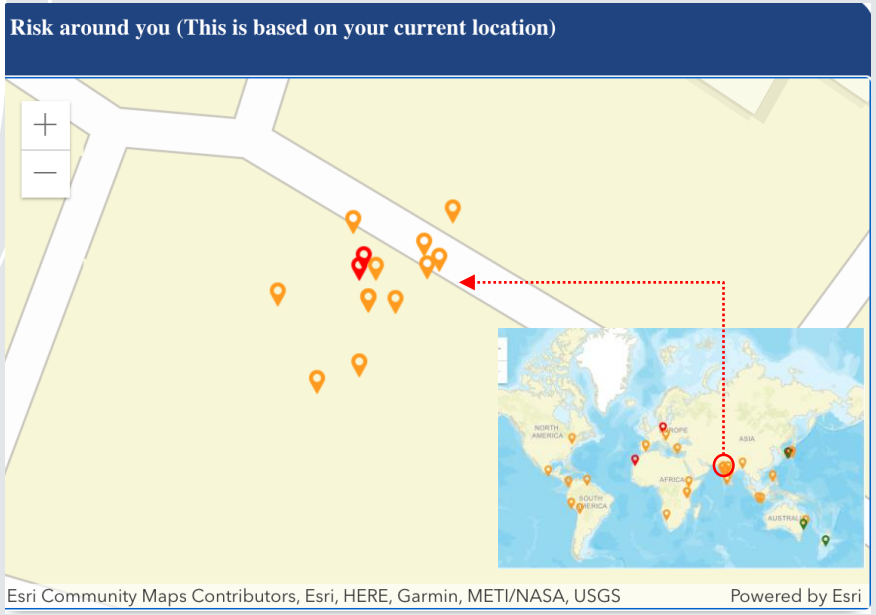
1. 30 Questions
2. Weighted Mean
3. Risk level
4. Advisory
5. Data base

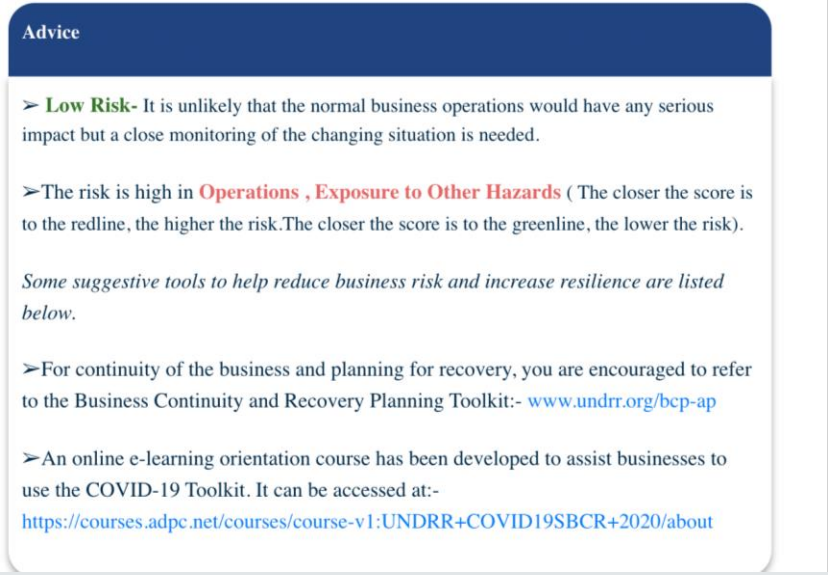
RIKA
Resilience Innovation Knowledge Academy

Result Dashboard









Advice

➢ **Low Risk-** It is unlikely that the normal business operations would have any serious impact but a close monitoring of the changing situation is needed.

➢The risk is high in **Operations , Exposure to Other Hazards** (The closer the score is to the redline, the higher the risk.The closer the score is to the greenline, the lower the risk).

Some suggestive tools to help reduce business risk and increase resilience are listed below.

➢For continuity of the business and planning for recovery, you are encouraged to refer to the Business Continuity and Recovery Planning Toolkit:- www.undrr.org/bcp-ap

➢An online e-learning orientation course has been developed to assist businesses to use the COVID-19 Toolkit. It can be accessed at:- https://courses.adpc.net/courses/course-v1:UNDRR+COVID19SBCR+2020/about

RIKA
Resilience Innovation Knowledge Academy

Thank you

E: ranit13@gmail.com

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Developing Innovative Tools and Approaches for Disaster Preparedness and Response

by
Isroil Samihardjo

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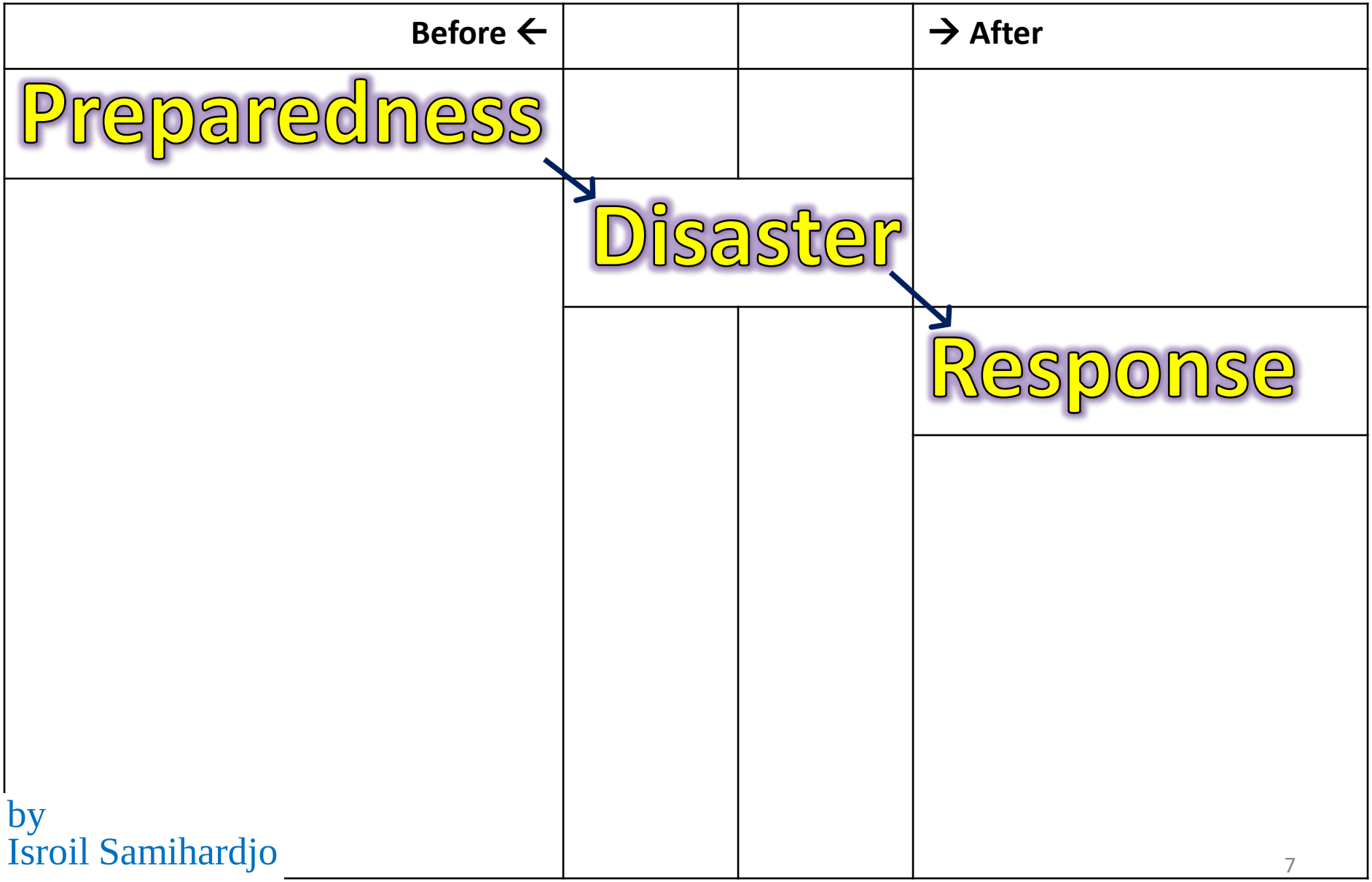

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Before ← → After

Preparedness

Disaster

Response

Need to be considered:

- Steps
- Threat and Risk Assessment (TARA)
- Organisations
- Human Resources
- Equipment and Facilities
- etc

WHO UNDRR ? Recovery Other ? Mitigation

Indonesian National Commmission on Zoonosis / Komnas Zoonosis (✝2016)

Indonesian National Commmission on Infectious, Emerging, and Reemerging Disease / Komnas Pinere (✝2016)

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A New Approach for Disaster Risk Management after COVID-19

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Steps:

- Early Detection (observation, monitoring, surveillance, recognition, reconnaissance, identification, detection, investigation)
- Early Warning
- Anticipation
- Be prepared

TARA:

- Deliberate vs Undeliberate Actions
- Source of threats (internal, external)

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- Distinguish between detection and search
- Specify subjects or objects to be detected for preparadeness

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  - Raising Awareness
- Anticipation
  - Foresight → Forecasting → Prediction → Estimation →Anticipation
- Be prepared
  - Distinguish between prevention, counter measures and protection

TARA:

- Deliberate vs Undeliberate Actions
- Source of threats (internal, external)

- Threat = I x C x O + V
- Regulation, Legislation, CoC for Scientist, Safety Culture, *etc.*

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Detection = the action or process of identifying the presence of something concealed

Search = finding, seeking or looking carefully for identified object

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Aware vs Lack of Awareness	
Wuhan	The rest ?
airborne transmitted infectious disease	droplets
Lockdown	social distancing, hand wash, mask

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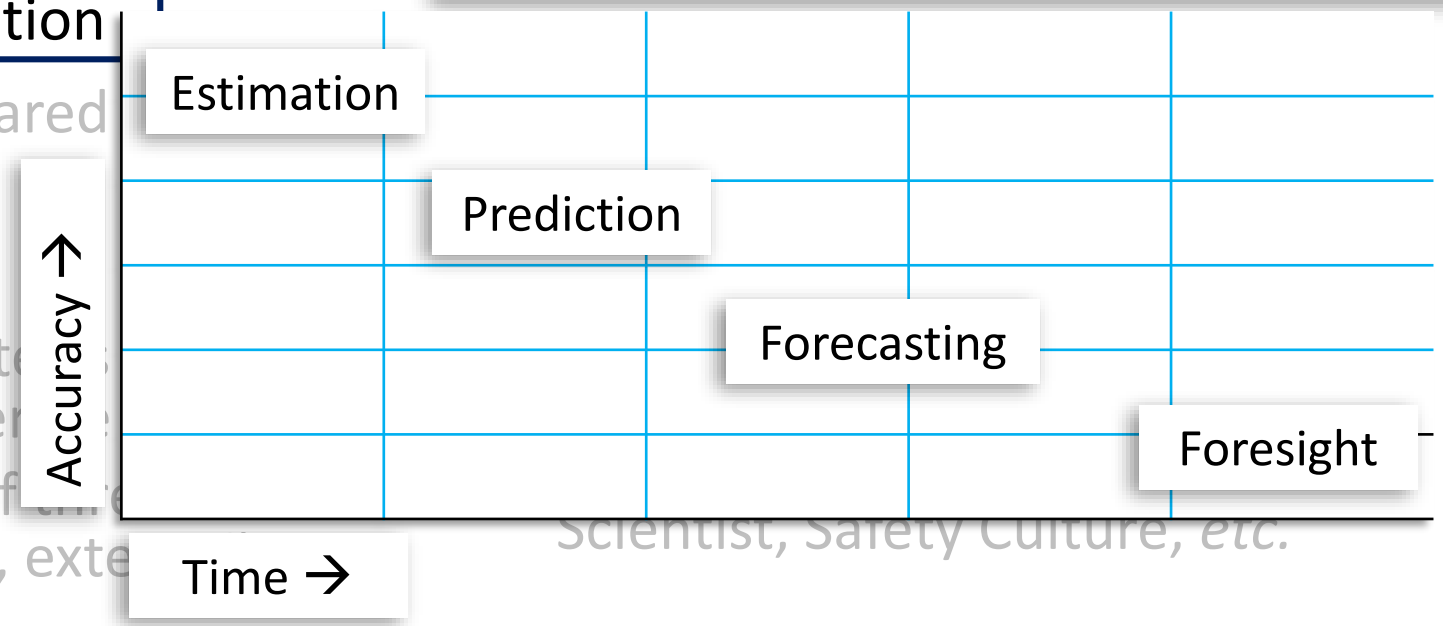

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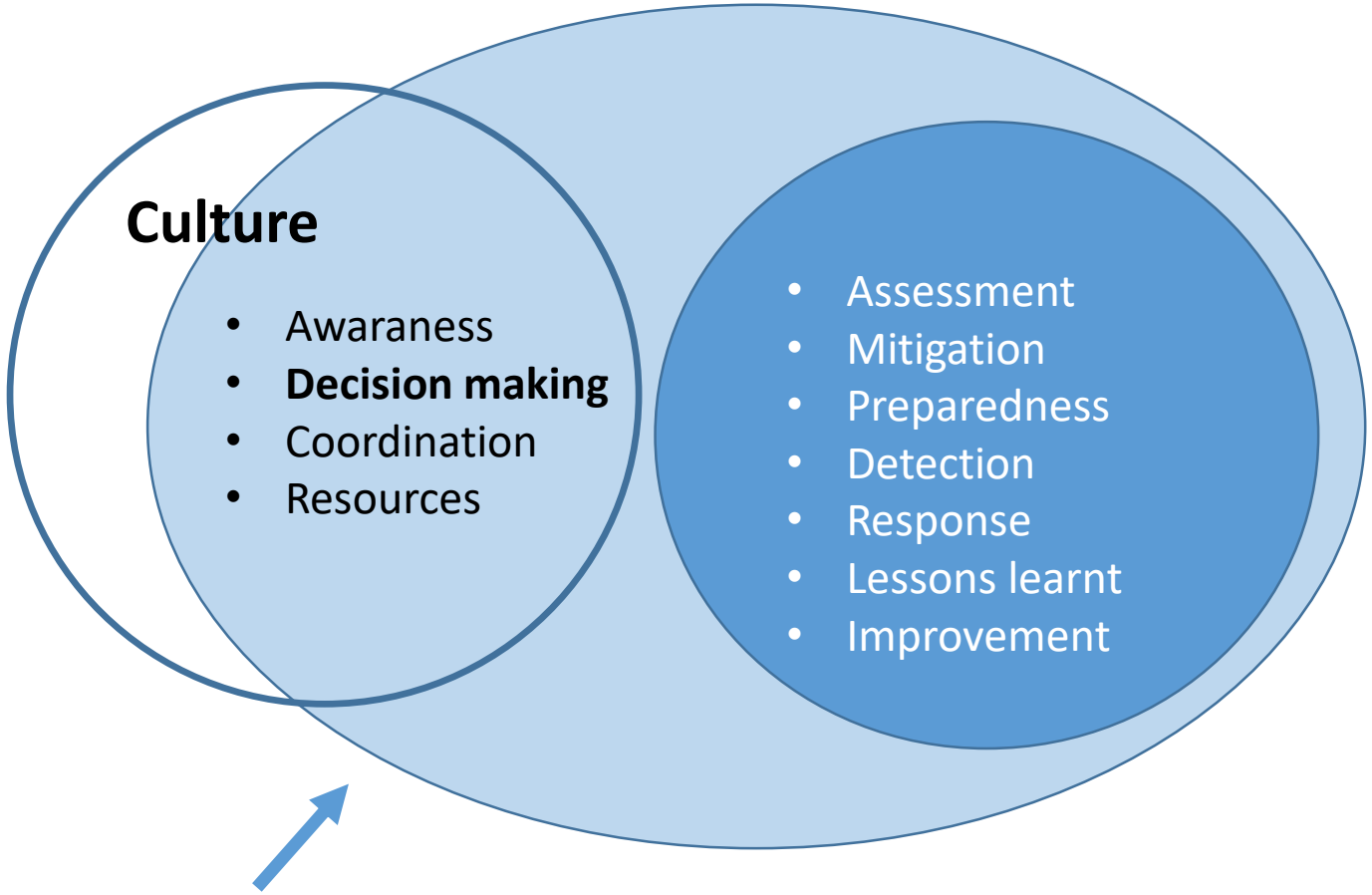
Conclusion

Preparedness can be done by defining and considering comprehensively the sequential steps, analysing risks and threats, developing coordination body, interdisciplinary human resources and maintaining the availability of facility and equipment.

Preparedness of the disaster handling should include advance system for early detection, early warning, anticipation, prevention, counter measure, and protection

Due to the dual use characteristic of CBRN, the risk and threat analyses should include the possibility of natural and unnatural disaster

Summarizing the discussion, perspective & structure



Harnessing the power of **innovation**

Jere Peltonen