

# Financial Protection of Public Assets Master Class

## Session 2

Data (End-to-End Systems  
and Valuation)

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Disaster Risk Financing  
& Insurance Program



SUPPORTED BY  
**WORLD BANK GROUP**



# Objectives



What is an end-to-end system?



Purpose and value



Potential Capabilities



Enabling Requirements



Development Approaches



# Meeting the Challenge



Vulnerability and exposure of assets and communities is increasing



Growth in hazardous locations without adequate controls



Government balance sheets attract undefined liabilities



Climate-related impacts are growing

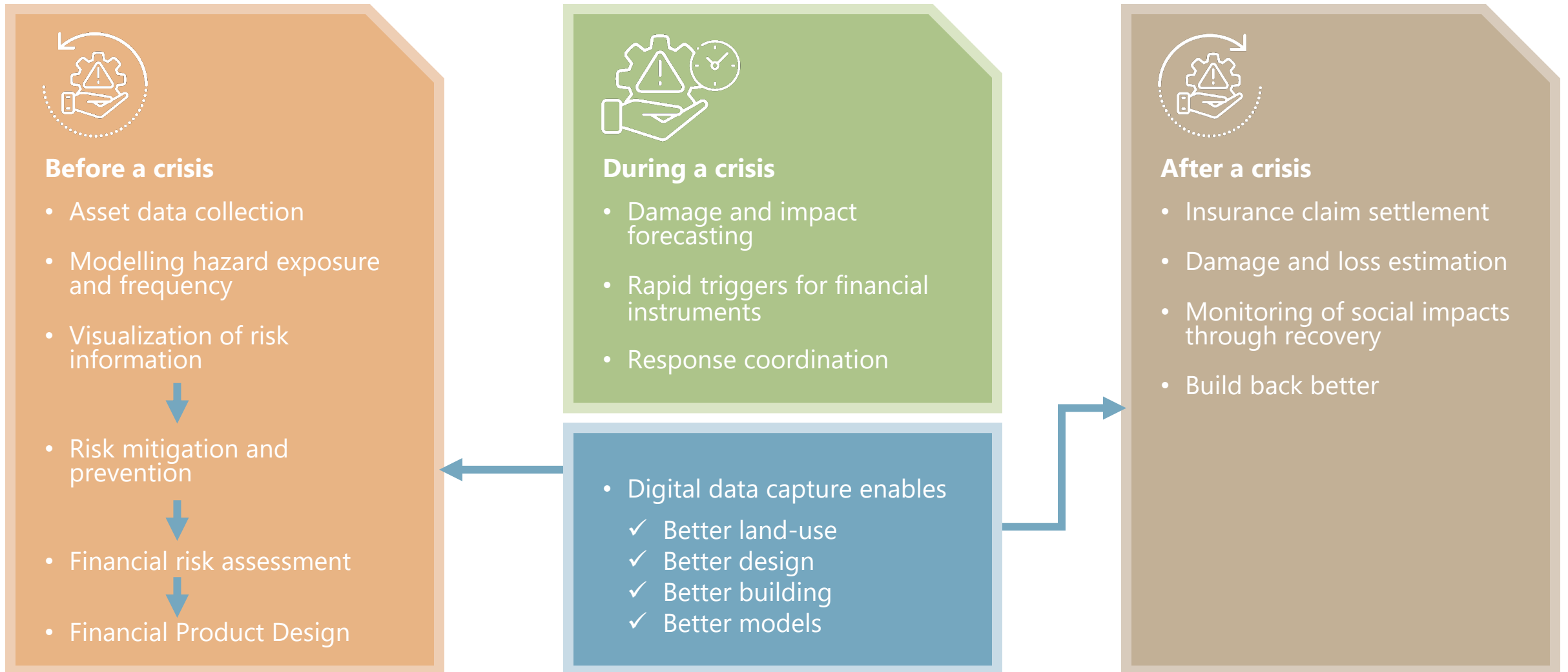


Insurance markets are moving to more granular risk-based pricing

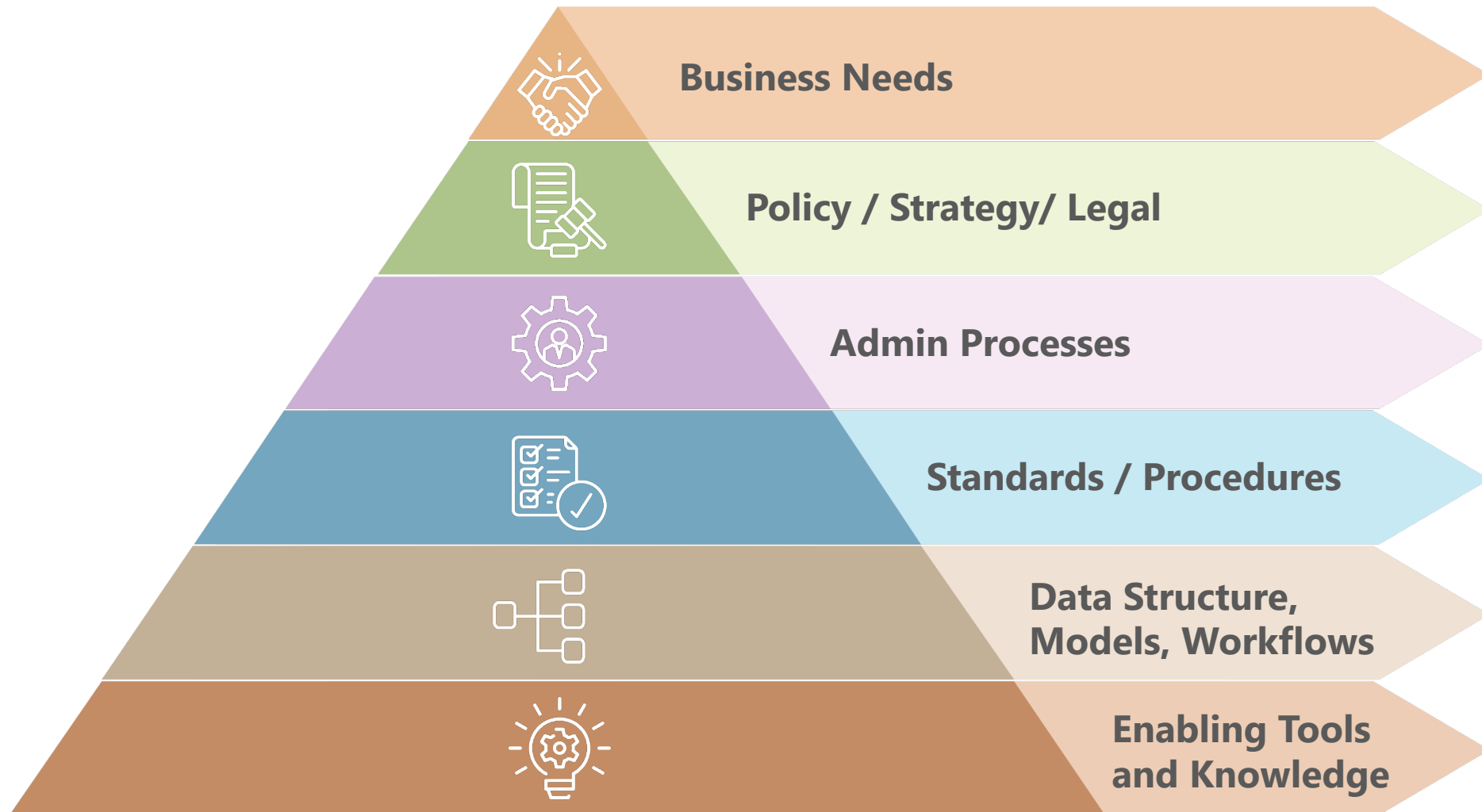


Reinsurance capacity is constrained

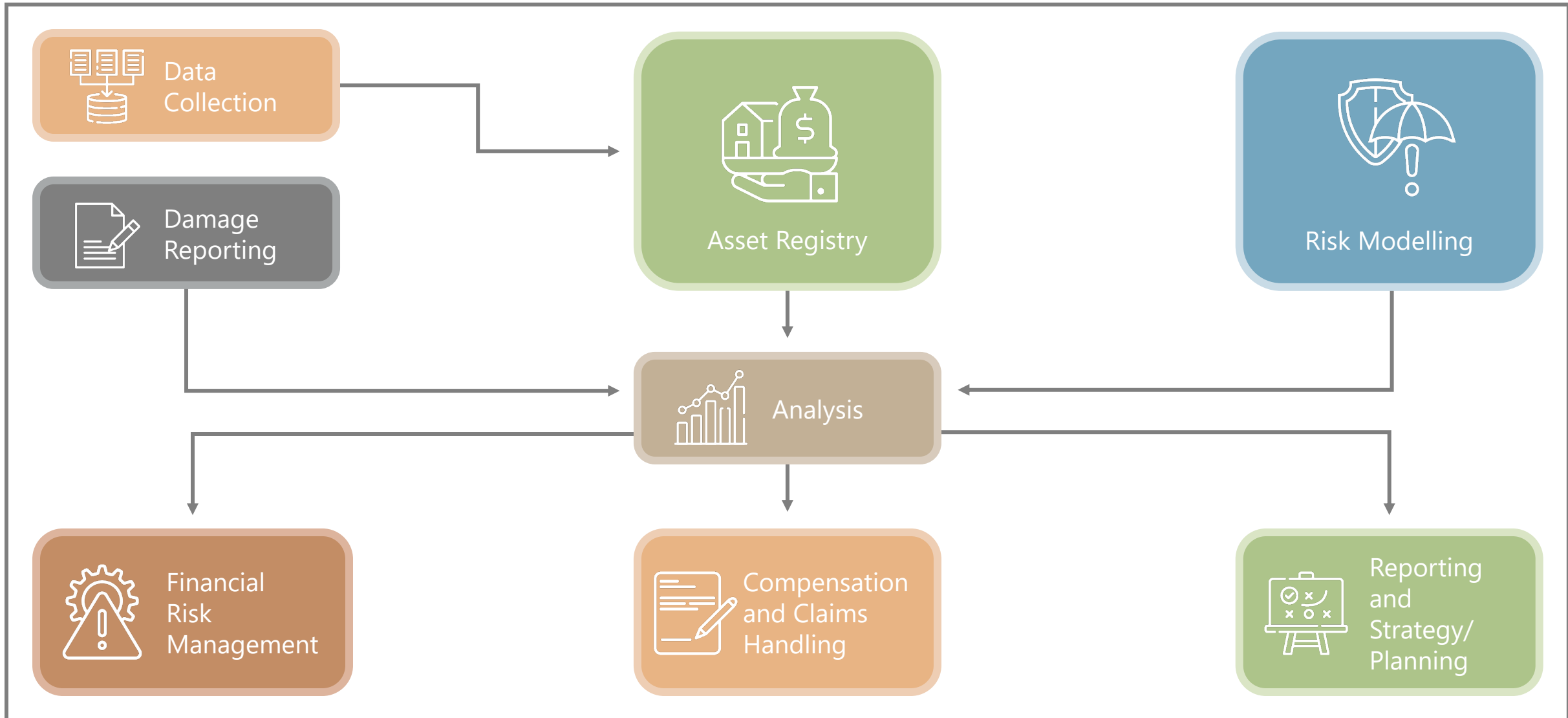
# Data Systems Support Key Decisions



# Data Systems Support Business Needs



# Common System Components



# Some Questions

**01**

- Is it one risk factor or many?
- How likely are these events?
- How could they interact?

**02**

How much uncertainty do we tolerate?

**03**

What kind of investment should we make?

**04**

How much risk do we want to manage ahead of time?

**05**

When do we have to pay?

Now, or in the future?

**06**

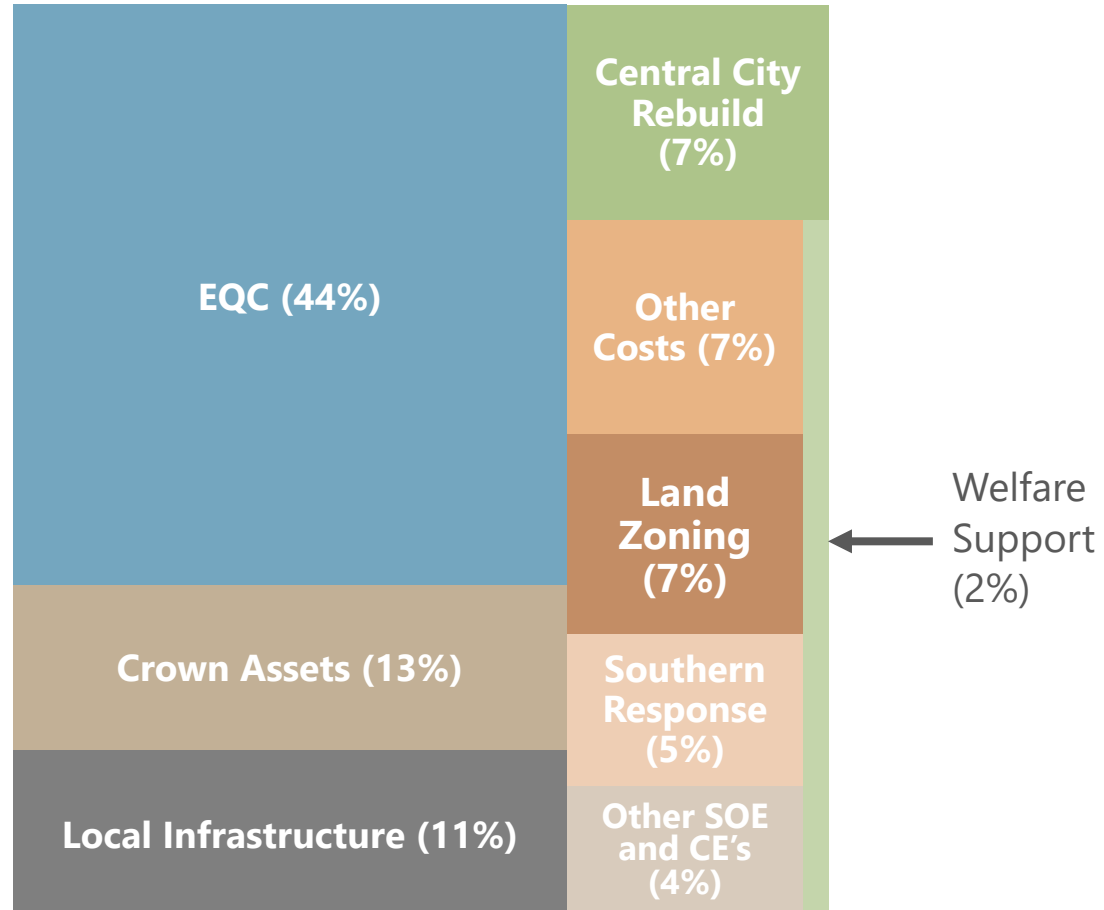
How much risk are we prepared to manage after an event?

**07**

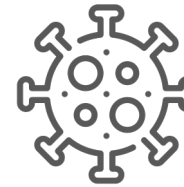
If we can't afford to treat a risk comprehensively now, can we agree on a post crisis action plan with adaptation options?

# Financial Risks

## New Zealand Earthquake Government Liabilities



Governments' financial risks can be highly correlated for natural hazards



Governments also face risks from non-correlated events, e.g., pandemic, global instability



Risk financing mechanisms protect capital and support community recovery

Source: The Treasury, adapted from the 2015 Budget



# Use System Knowledge to Guide Risk Treatment



**A**VOID  
Reduce exposure



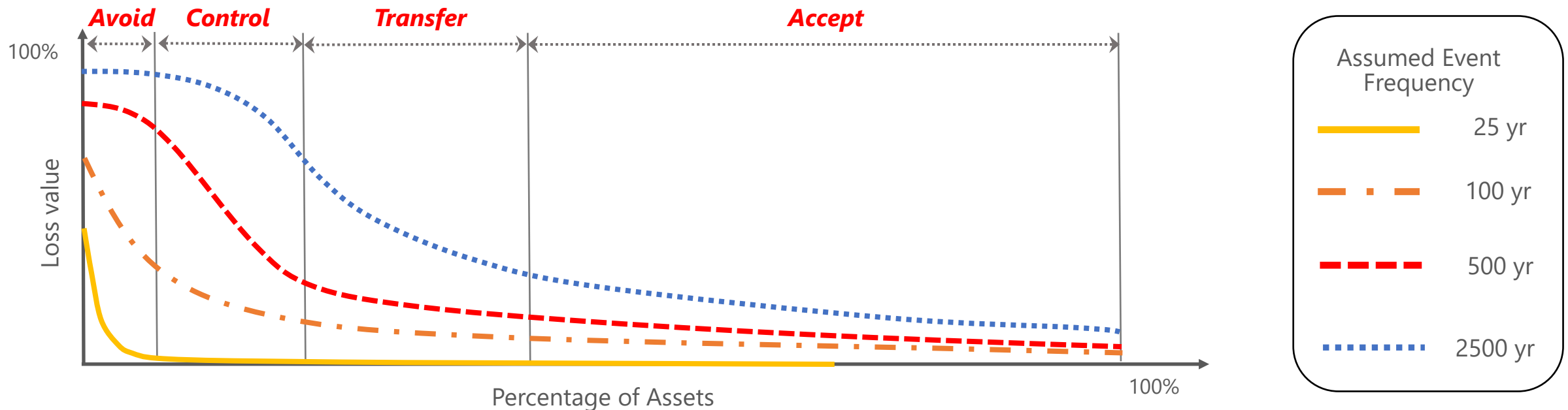
**C**ONTROL  
Mitigate physical impact



**T**RANSFER  
Limit financial loss and aid recovery

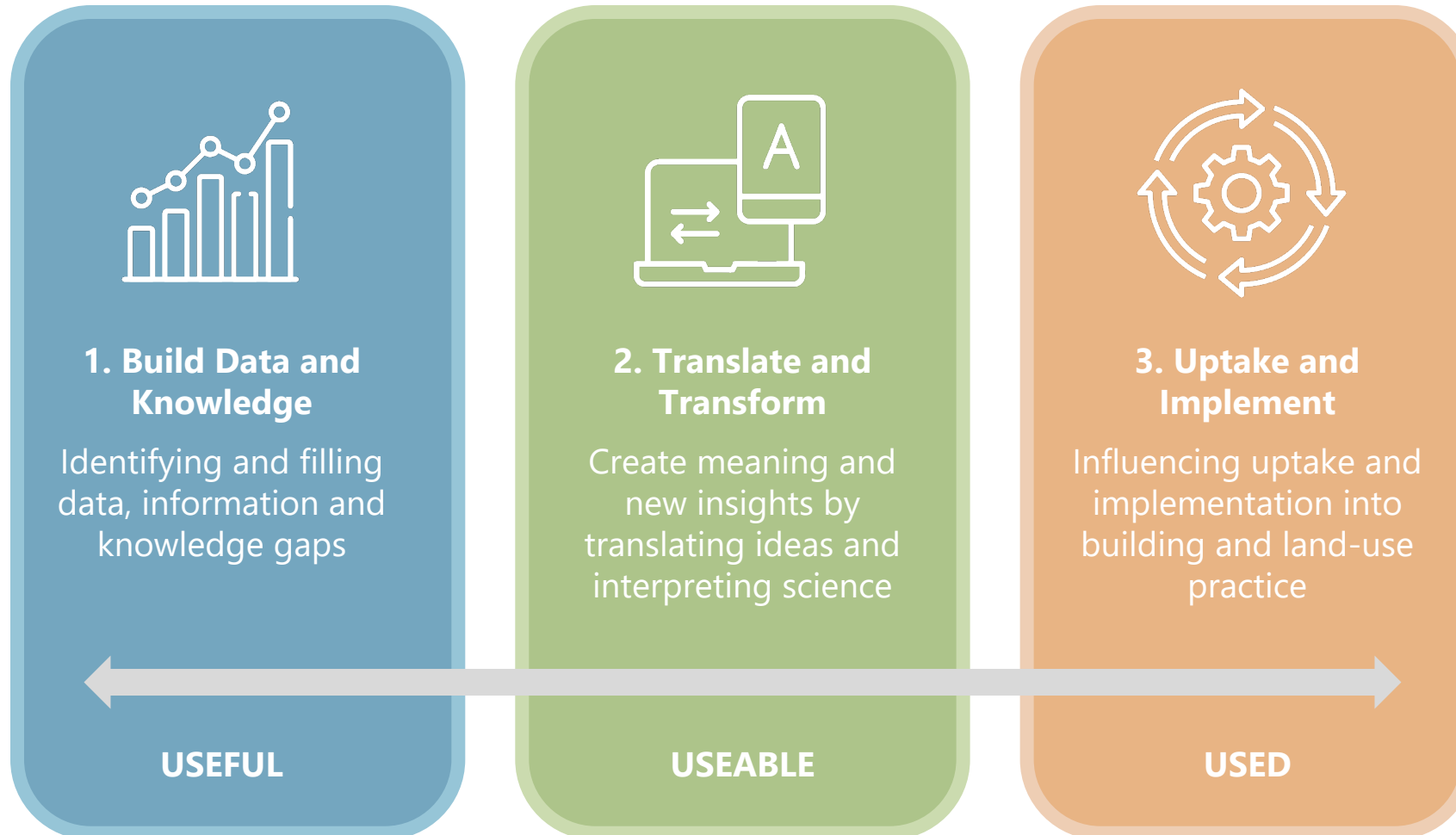


**A**CEPT  
Adaptive response arrangements



Consider multiple possible futures, where risk(s) change with time

# Make Each Step Count!



# Getting Started



**Clarify the status** of current systems used to support crisis risk assessment and decision making



**Establish expectations** of a future information system



**Identify whose support is** needed to align improvements



**Clarify roles and responsibilities** and sources of technical expertise



**Secure necessary authorizations and budgets** to calibrate the scope of the Project or initial phase



**Agree on the language of the enterprise** among all with whom you work



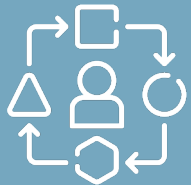
# Thinking Ahead



How will the performance of the system be judged?



Ensure some gains can be delivered on short timeframes as well as longer term



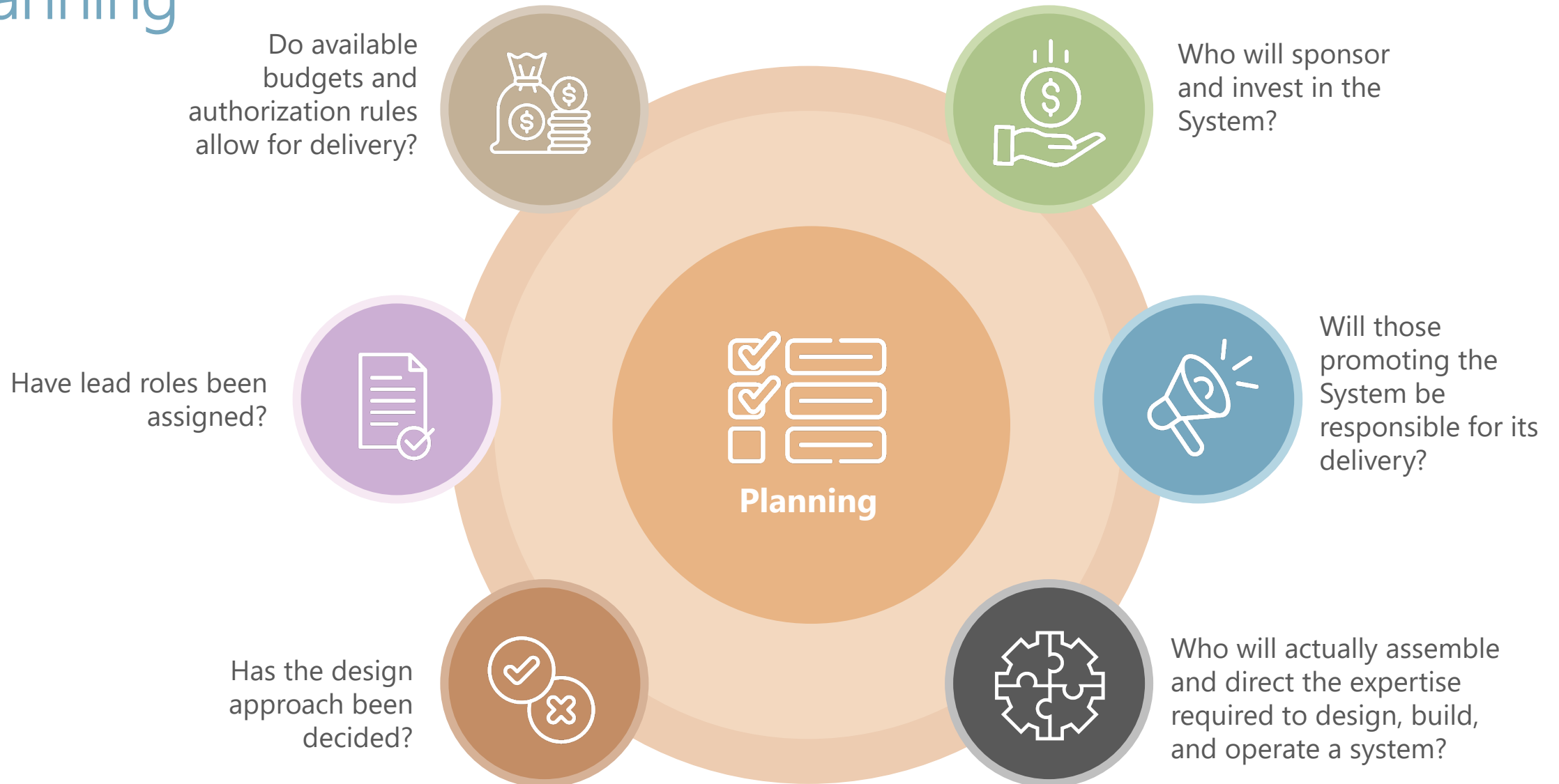
Is your plan adaptable? What if new needs or priorities emerge? What if expected benefits are slower to realise, more difficult to measure, or too remote from individual accountabilities to ensure delivery?



What level of readiness describes those who will be needed to help build and operate an end-to-end system?



# Planning



# A Staged Approach



Sequencing the design of a system will allow different elements to be piloted before expanding the scope



Modularize development to reduce complexity. This approach will help make updates possible as knowledge grows or new needs emerge



Be realistic about the investment or time that may be needed to enhance the system, so that priorities can be set



# Fit for Purpose



Ensure that changes to work practices, governance rules, values and assumptions can be addressed collaboratively by those affected. People generally support what they create



If data for certain purposes are lacking, focus on what is available to understand the key gains in decision quality desired. This will encourage creativity and reduce preoccupation with obstacles that can stifle progress



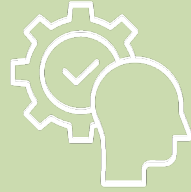
Try to differentiate the information sets that affect Precision from those which affect Accuracy. Most decisions will benefit more from accuracy than precision



# Useful, Useable and Used



When considering automation and real-time processes, consider how much faster tools will improve decision quality



Differentiate the capabilities needed for fast outputs from those requiring periodic, but reliable extracts of information. For example, resilience planning may require detailed data and knowledge, but rarely at short notice. Some insurance products, and emergency management may require rapid alerts from earth sensing networks and damage reports from affected areas



An end-to-end system can support both Urgent and Important needs, but development pathways and their operational frameworks may differ

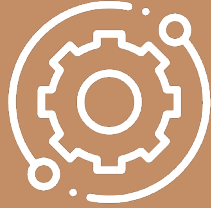




# Plan for Special Needs



Where Earth sensing and mapping are intrinsic to the system, access to specialist knowledge, underpinned by data and science will be needed

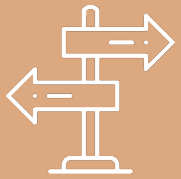


Clarify the capability requirements for technical support as part of imagining the operation of the data system, especially the relationships needed to sustain it



Early discussion of the necessary skill-sets will help anticipate resource constraints, ways to manage around them, and opportunities to collaborate productively

# Success Indicators



**Decision Quality:** Where will decisions benefit most from a System?



**Leading Change:** What will the introduction of a System mean for existing work practices and coordination. How will this play out?



**Trust and Confidence:** The quality of the information available to System users is more important than whether it is served at the 'click of a button'. How will this be known?



**Agile and Flexible:** Not everything has to be available simultaneously to be useful. Emerging issues may reveal new demands



**Modular and Sustainable:** Agree on a framework to administer the System, which allows for improvements and maintains the confidence of users

# Where to Begin?

