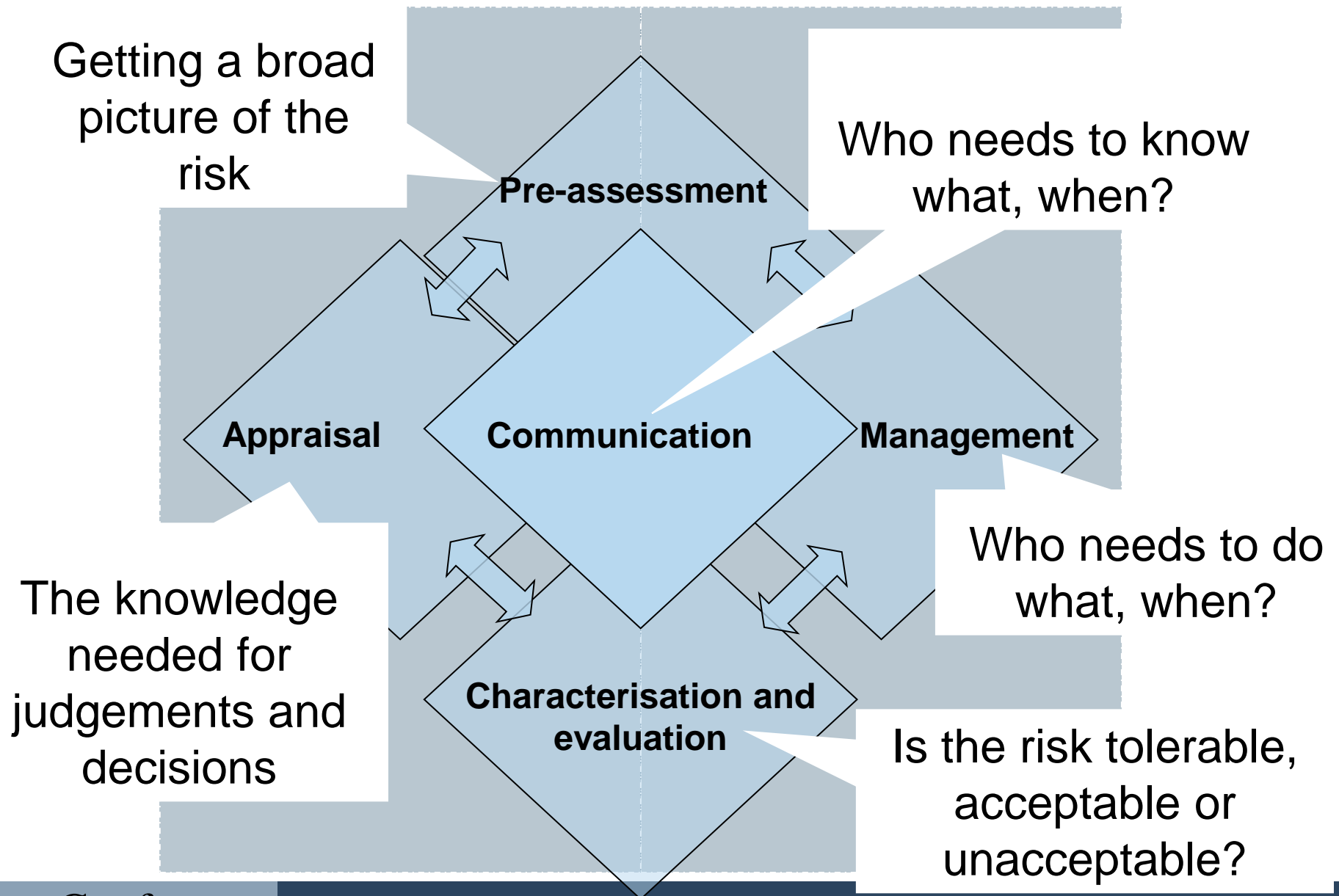# Anticipating Crisis:
A Risk Governance Approach
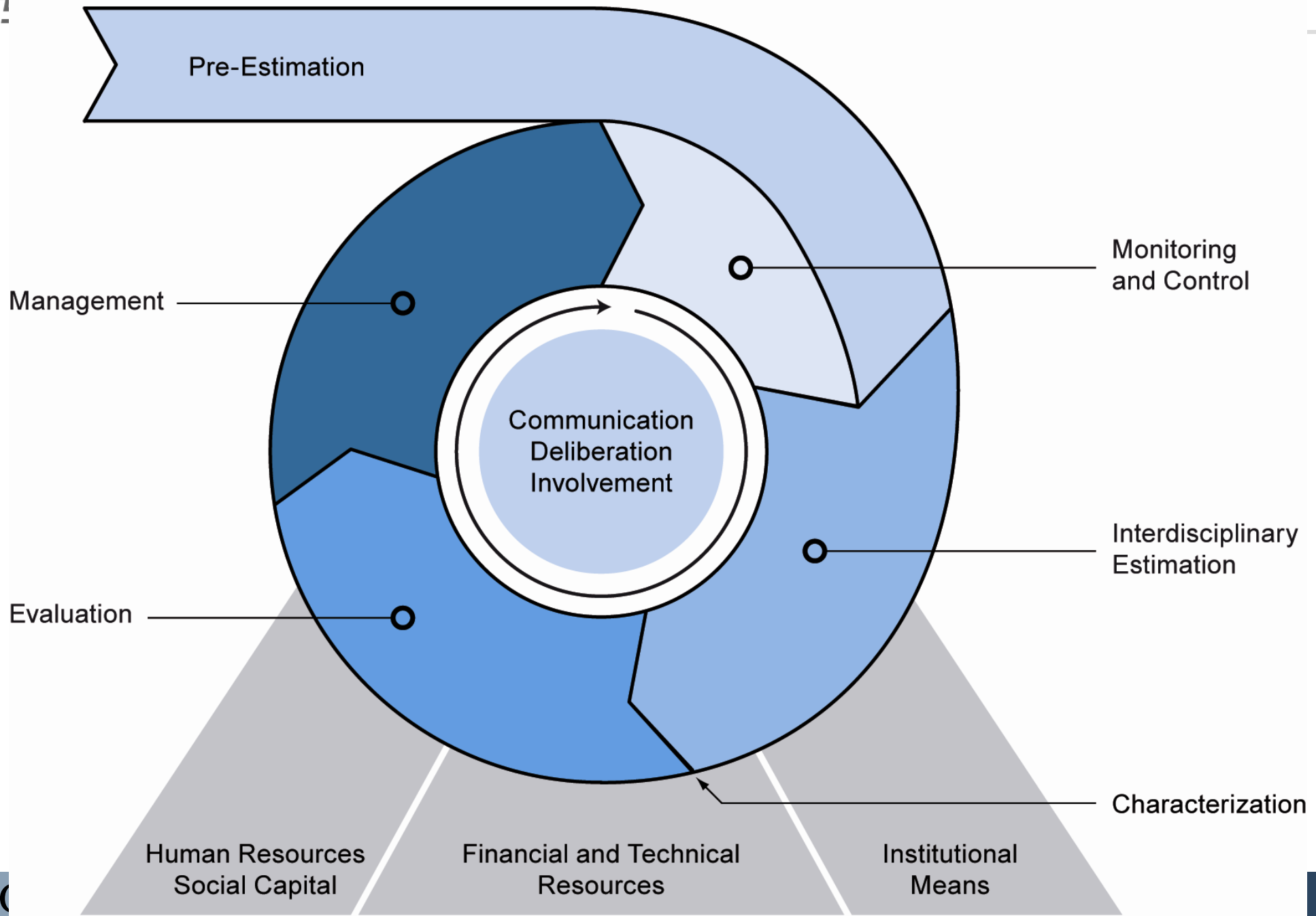
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Getting a broad picture of the risk

Who needs to know what, when?

Pre-assessment

Appraisal

Communication

Management

The knowledge needed for judgements and decisions

Who needs to do what, when?

Characterisation and evaluation

Is the risk tolerable, acceptable or unacceptable?

Governance Institution

Pre-Estimation

Management

Evaluation

Communication
Deliberation
Involvement

Monitoring
and Control

Interdisciplinary
Estimation

Characterization

Human Resources
Social Capital

Financial and Technical
Resources

Institutional
Means

An Extra Loop for Preparing for Crisis
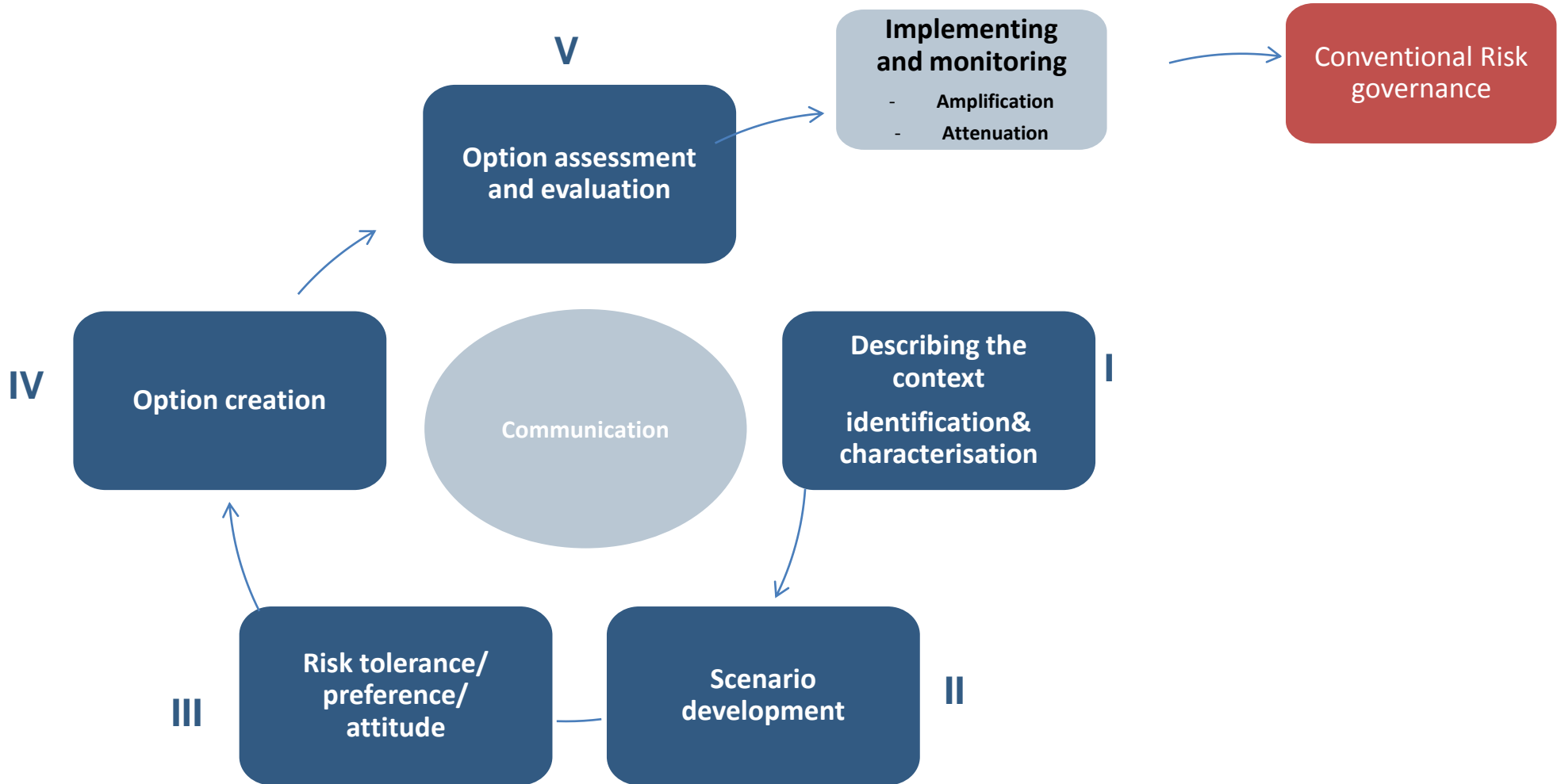
Signals of emerging threats or potential crisis need to be monitored; once they are clearly visible, it may be too late to initiate appropriate actions. With respect to crisis anticipation, the following context dimensions need to be screened continuously

- Technological changes, but also diffusion of known technologies into new areas

- Changes in the natural environment, including climate and natural hazards

- Changes in vulnerability of risk absorbing systems

- Organizational preparedness (contingency plans, resources, skills)

- Behavioral factors that influence crisis responsiveness, including risk perception, risk avoidance and denial, protective behavior, etc.

Policy makers (public and private) need to develop context-related narratives about the potential causes of emerging crisis

- Scenarios should include best and worst cases but also a backcasting approach of defining a desirable crisis management outcome and determining the steps to reach such an outcome

- Scenarios should be accompanied by a thorough sensitivity analysis (what can go wrong if one of assumptions is wrong?)

- Risk managers should simulate responses to each of the scenarios in order to be prepared

Methodological innovations necessary for scenario development:

- Integrated Impact Analysis (technical, economic, social, cultural)
- Dynamic monitoring (time-dependency)
- Inclusive Modelling and simulation (co-creation with stakeholders, experts and policy makers)
- Virtual simulation (computer-based and experimental)
- Continuous updating…

- Scenarios give rise to pre-crisis and post-crisis intervention points for either prevention, mitigation or adaptation with respect to the threats (time-dependent)
- Crisis managers need to agree in advance at which point in the timeline of potential events an intervention is crucial and which level of pre-crisis condition is still tolerable (stakeholder input beneficial)
- This exercise needs to be performed for each scenario in advance so that one is prepared for critical situations
- A close monitoring system is necessary to understand which scenario is likely to occur and when intervention points are likely to pop up

There exist 4 broad *strategies*:

1. **Influence the contributing factors (change context)**

    - *Place special emphasis on interactions of contributing factors.*

2. **Change the risk tolerance level (raise it);**

    - *focus on the risk absorbing system; increase robustness*

3. **Improve the resilience of the system;**

    - *that is be prepared for shocks or unexpected surprises.*

4. **Do more monitoring, seek more signals from early-warning systems.**
    that is to be on alert the further you move on the timeline

+ Pro-active communication strategy

If different scenarios are played out and there is much uncertainty about the extent and probability of a crisis, the IRGC framework suggests a management strategy based on resilience. This implies:

–Being prepared for the worst scenario to occur and have strategies at hand if they do occur

–Investing in reducing vulnerabilities (beyond the expected value of return)

–Trying to contain risk in space and time (avoiding irreversibility)

–Being ready to intervene instantaneously if things turn out to be worse than expected (crisis preparedness)

Interventions should be tested against:

– Effectiveness (risk reduction potential)

– Efficiency (resource consumption)

– Unwanted side effects (nested risks)

– Effects on sustainability (economic, ecological, social)

– Socio-political acceptance (for example protest movements, outrage)

– Ethical standards: acceptability (for example, environmental justice)

Organizational handling of intervention method selection:

– Analyse the costs and benefits of prevention versus mitigation versus adaptation. Try to find the optimal mix

– Identify a "risk owner" in advance: who will be responsible for managing it?

– Work on the specific case of "moral hazard", when no one owns the risk (often the case with emerging risk to the environment, but also as we have seen in the financial systems or in food safety)

- In the early phases of risk governance, *internal* communication is crucial (early warning system and crisis management must be well established in organisational hierarchy)

- For developing scenarios, identifying intervention opportunities and designing intervention options, the inclusion of *external experts and stakeholders* is crucial for success (inclusive assessment and behavioral factors)

- In the late phases of risk governance *external communication* is central for gaining organizational and public support for necessary policy measures and for initiating public preparedness programs (training)

Communicating emerging risks faces specific challenges that go beyond traditional risk communication problems:

- Disbelief in the existence of a threat (discarded as undue pessimism)
- Blame-the-messenger attitude when potential risks or vulnerabilities are reported to decision makers
- Messages about potential crisis are likely to get little attention when organization is performing with great success
- Language barriers (decision makers not familiar with multiple scenarios and simulations)
- Dominance of a "wait and see" attitude if decision makers are faced with multiple uncertainties
- Decision makers have often little sensitivity to amplification processes when crucial intervention points have been missed

Preparing for future energy transition risks requires special institutional structures and procedures:

- Organisations need departments or units that perform early warning functions and have direct access to key decision makers within the company, agency or planning unit.
- Staff in these departments need to be trained to understand the drivers of crisis, the context conditions (modifiers), and the vulnerabilities of the risk absorbing targets
- Computer simulation helps to illustrate emerging crisis scenarios and make them more plausible to those who need to prepare interventions.
- For developing scenarios and identifying options for each intervention point, staff members should be trained to use the appropriate communication tools,
- Once a potential crisis development is identified, there needs to be an action and contingency plan prepared in advance and tested

1. Situations that could lead to crisis are hard to assess and manage because of many interactions with other systems (lots of noise)

2. Risk Governance for crisis management requires a more dynamic governance model that provides a dynamic timeline for various scenarios of developments (with and without cumulating into crisis)

3. Risk assessment methods need to be augmented with integrative and inclusive scenario techniques (physical, technological, organizational and behavioral factors)

4. Prudent management includes the identification of potential intervention points and pre-set tolerance levels for justifying interventions or non-action

5. Depending on the phase in the timeline different time-sensitive measures need to be designed in advance and, if possible, tested

6. Much of what is needed is common sense yet, without institutional and organizational structures and procedures in place, routines will be dominating the process and ignorance is likely to win over vigilance