

IOR Norway 2019
19-20 March, Stavanger, Norway

Risk analysis: Foundations and IOR applications

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Outline

- What is risk analysis?
- How to conceptualise risk?
 - The new PSAN definition of risk
- How to approach (environmental) risk assessment and risk management in relation to IOR solutions?

What is risk analysis?

Systematic process to comprehend the nature of risk and to express the risk, with the available knowledge.

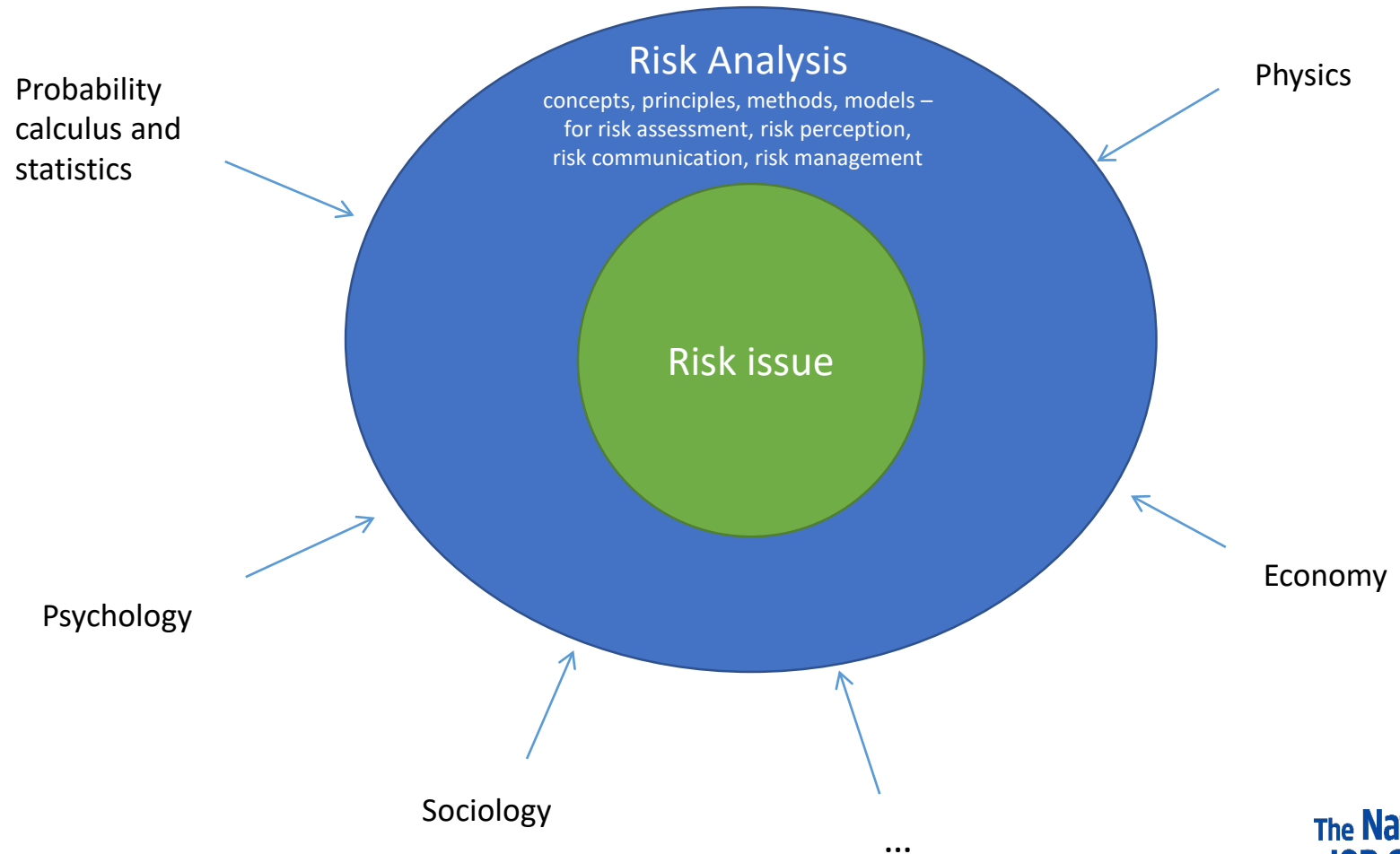
In the Society for Risk Analysis (SRA) community:

Risk analysis is broadly defined to include risk assessment, risk characterization, risk communication, risk management, and policy relating to risk, in the context of risks of concern to individuals, to public- and private-sector organizations, and to society at a local, regional, national, or global level.

Is risk analysis ...

- ☐ ... multidisciplinary?
- ☐ ... interdisciplinary?
- ☐ ... a field of its own?
- ☒ ... all of the above?

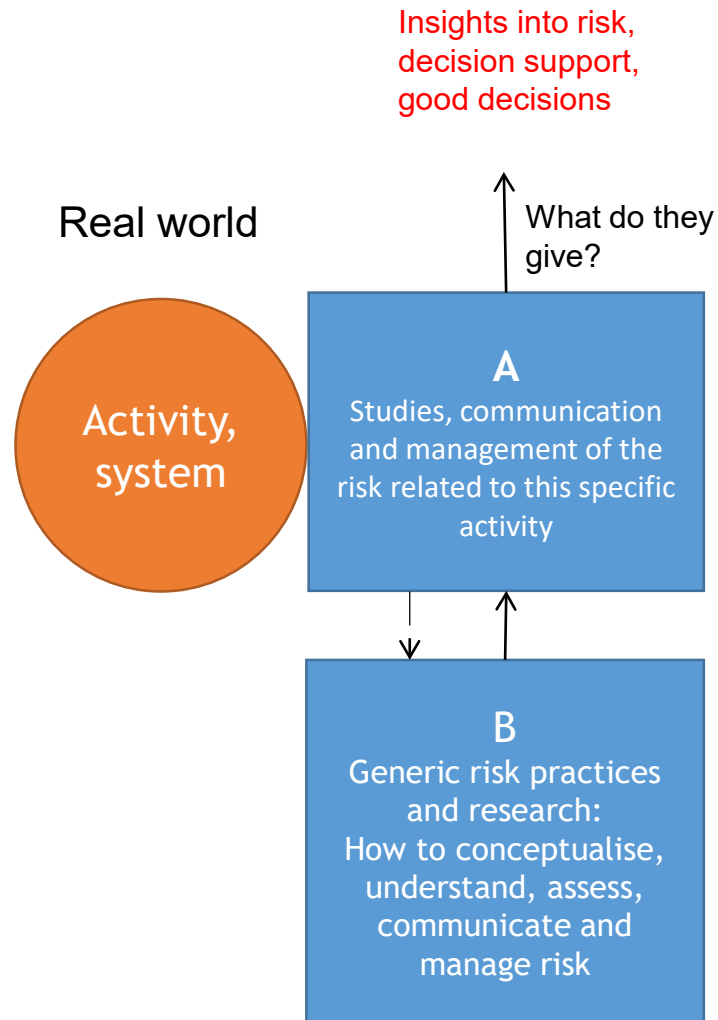
Tackling a risk issue



(Aven, 2017)

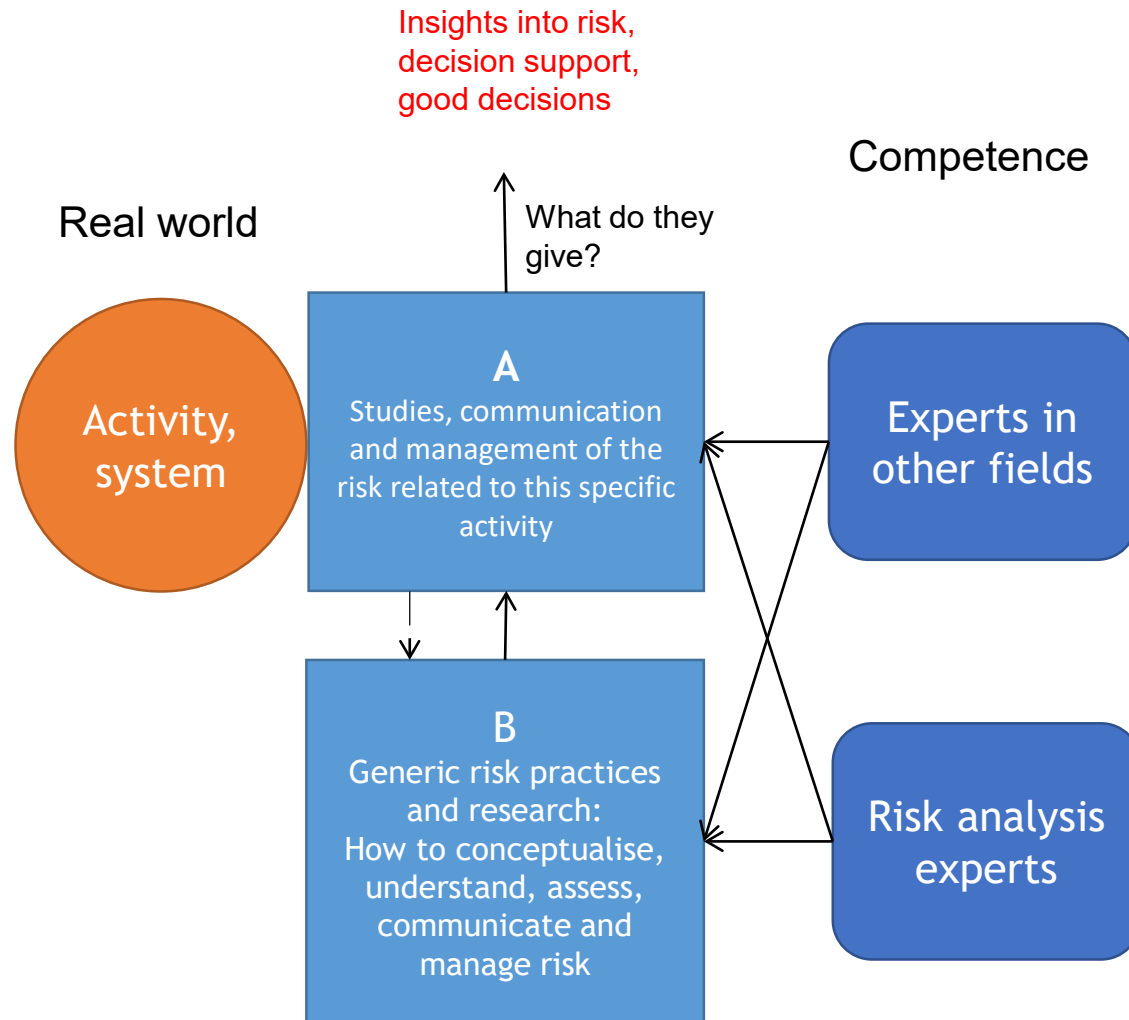
The risk analysis field

Types of knowledge generation



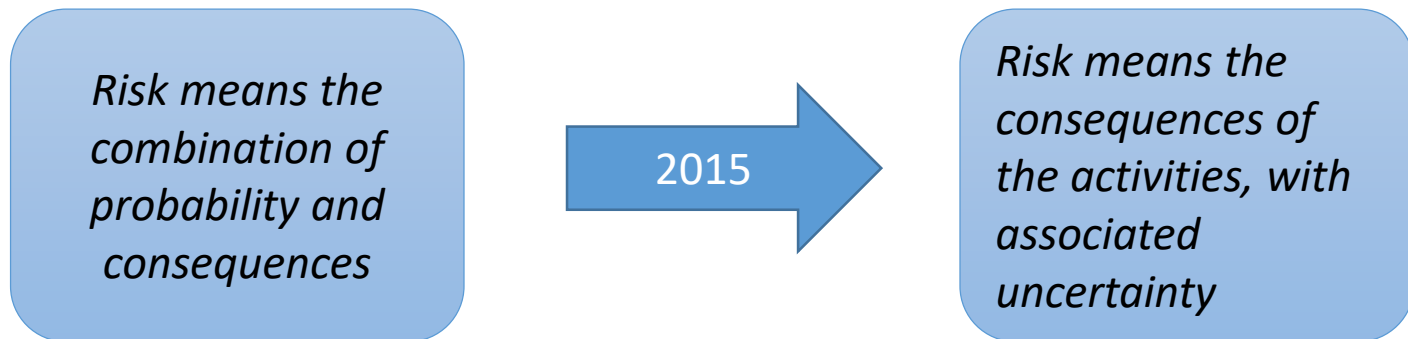
The risk analysis field

Types of competence needed



The Petroleum Safety Authority Norway (PSAN) new risk definition

Guideline to the Framework Regulations §11



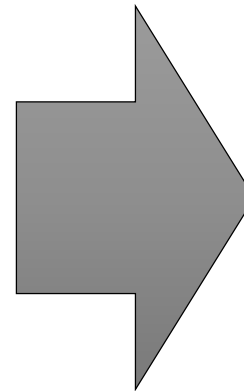
Risk analysis field trend

“the consequences of an activity with the associated uncertainty”

Petroleum
Safety Authority
Norway (2015)

e.g. *“uncertainty about and severity of the consequences of an activity with respect to something that humans value”*

Society for Risk
Analysis (2015)



Uncertainty-based
risk perspectives

ISO 31000 Risk
Management
Standard (2009;
2018)

“the effect of uncertainty on objectives”

Risk concept versus risk description

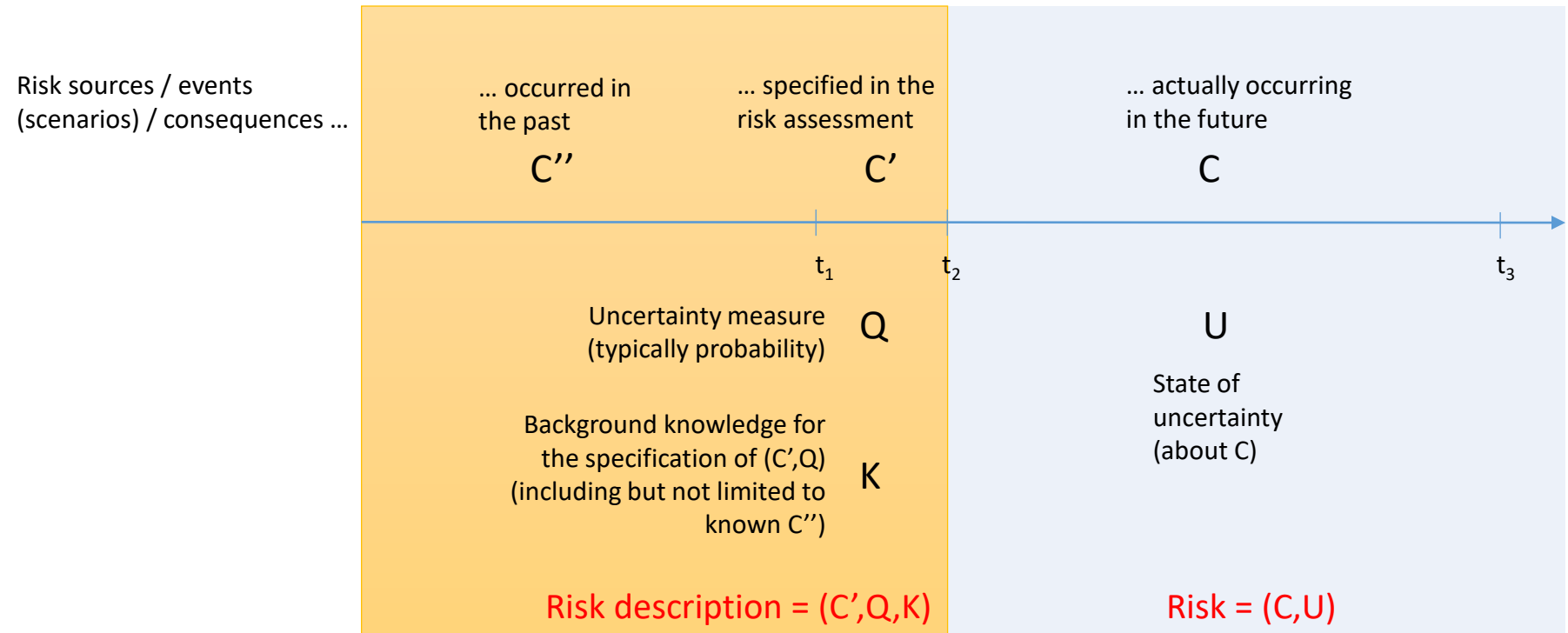
The *concept* of risk

The *description* of risk

What *is* risk?

How is risk measured
and described?

Risk concept versus risk description

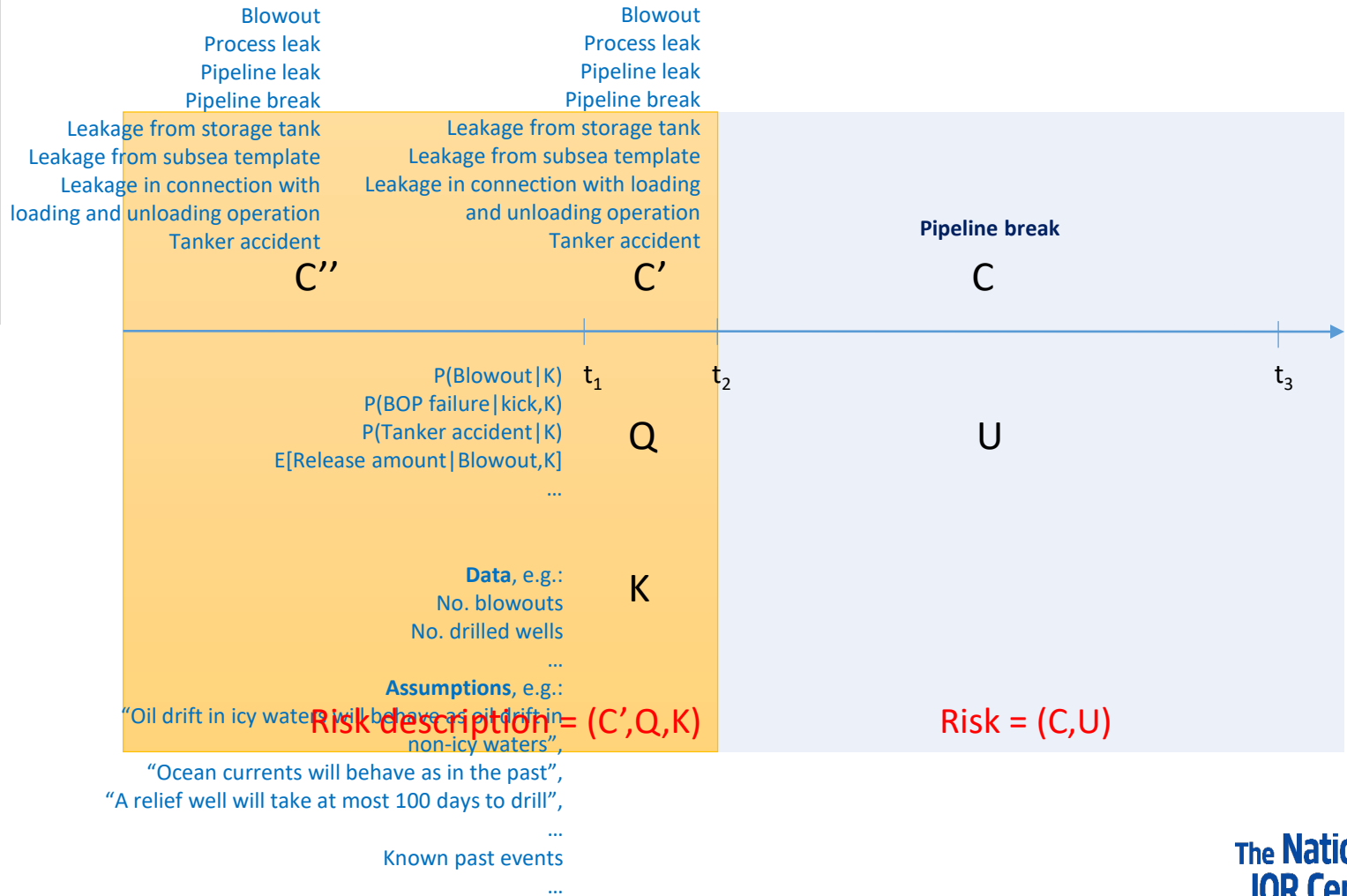


Risk concept versus risk description - Environmental risk assessment (ERA)

OLJEINDUSTRIENS
LANDSFORENING

METODE FOR MILJØRETTET RISIKOANALYSE
(MIRA) REVISION 2007

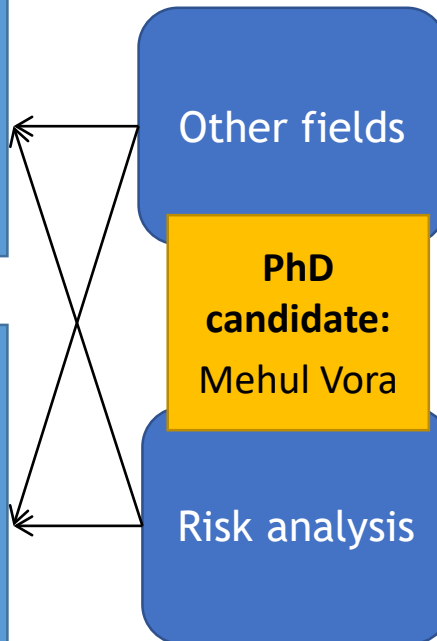
REVISION APRIL 2007



How to approach (environmental) risk assessment and risk management in relation to IOR solutions?

IOR centre project 1.4.6 Risk Management / ERA

Real world



Supervisors:

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Department of Chemistry, Bioscience and Environmental Engineering

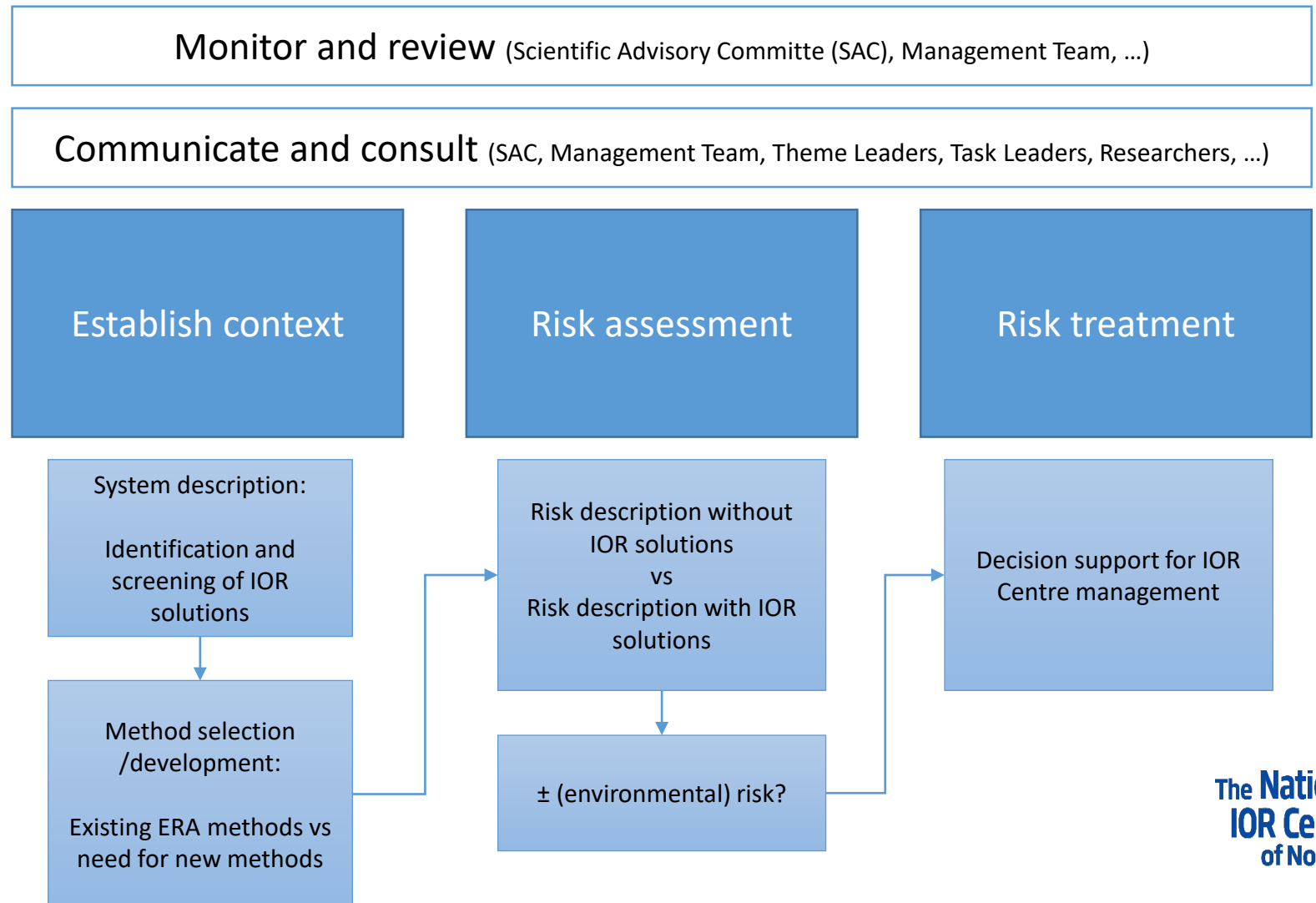
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How to approach (environmental) risk assessment and risk management in relation to IOR solutions?



Thank you for your attention