SESSION 1

Cycle de formation

RISQUES & STRATEGIES CONTRACTUELS

Project Risk Management

Gaëtan AUVRAY

Content

- Intro
- Purpose, Context and Definitions
- Risk Management Process
- Advice to get started

DeMorgen.

IN HET NIEUWS | MENINGEN | POLITIEK | BETER LEVEN

Coronavirus

De Block liet miljoenen mondmaskers vernietigen zonder te controleren of ze nog bruikbaar waren

Beeld Getty Images

Voormalig minister van Volksgezondheid Maggie De Block (Open Vld) heeft miljoenen mondmaskers laten vernietigen, zonder te controleren of ze nog goed waren. Dat blijkt uit onderzoek in het VRT-magazine *Pano*.

La Libre

Abonnez-vous

Maggie De Block a fait détruire des masques "de manière irréfléchie", ils auraient pu sauver des vies lors de la première vague de coronavirus

© Reporters / QUINET

Belga

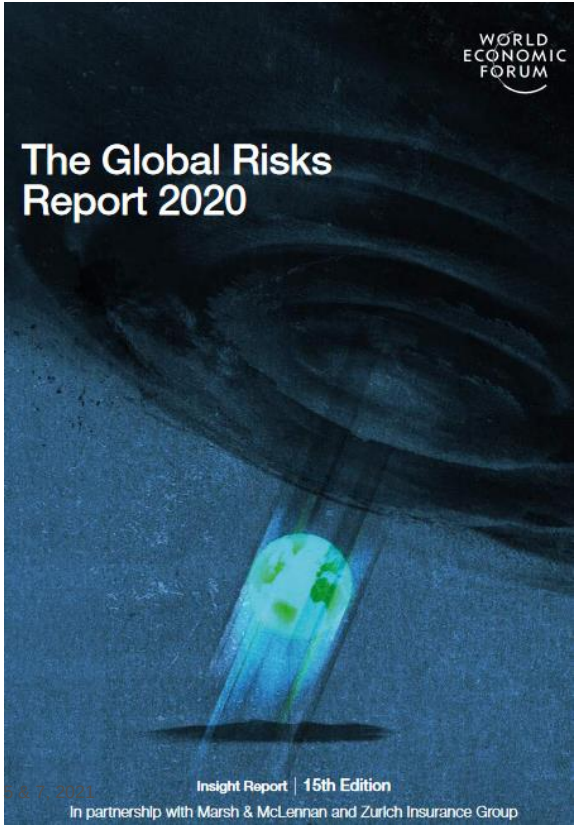
Publié le 07-10-2020 à 17h43 - Mis à jour le 09-10-2020 à 10h01

L'ancienne ministre de la santé Maggie De Block (Open Vld) a fait détruire des millions de masques buccaux sans vérifier s'ils étaient encore bons, selon une enquête du magazine Pano (VRT) diffusée mercredi qui révèle que les restes de ce stock sont toujours en excellent état. D'après les experts, les masques ainsi détruits auraient pu sauver des vies lors de la première vague de l'épidémie de coronavirus. En 2006, le gouvernement

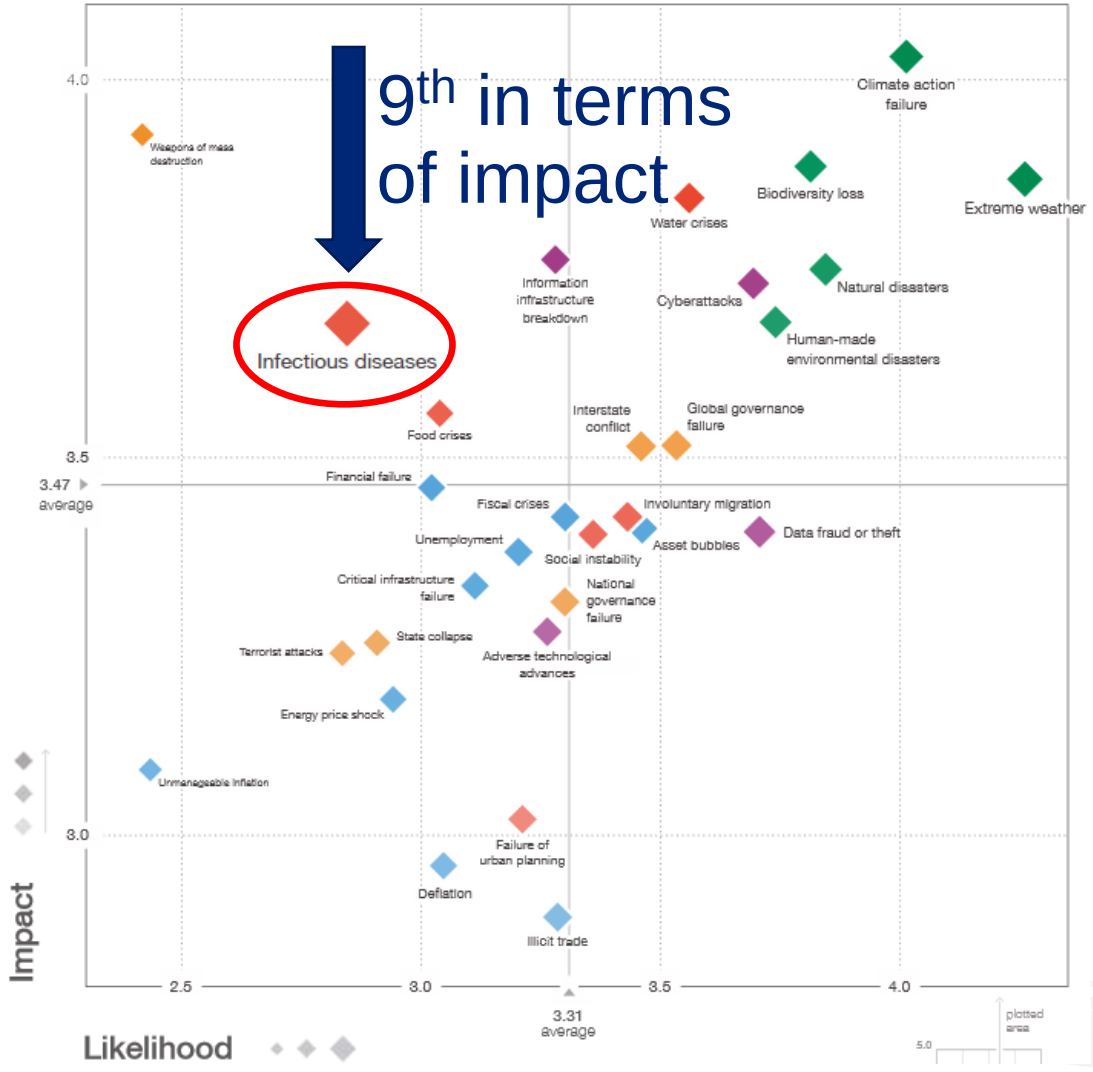
Poll

- Would you have taken the same decision?

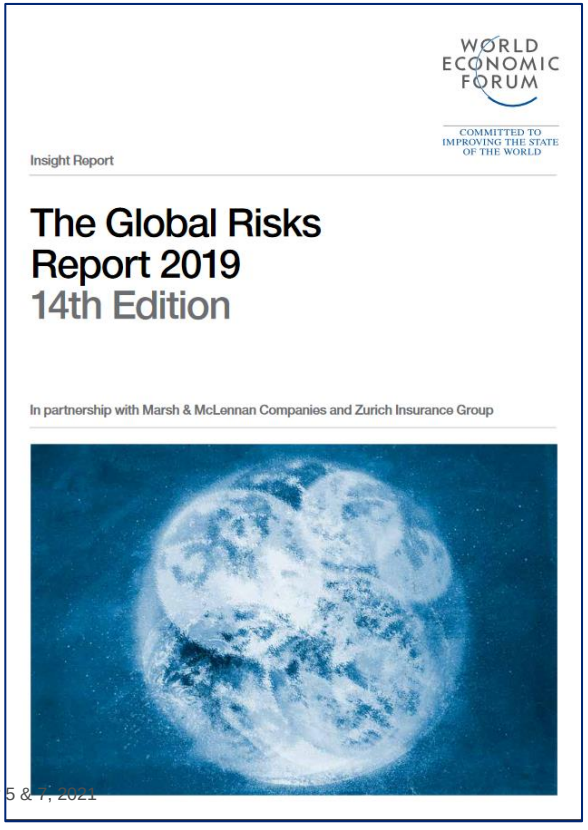
Global Risk report 2020
World economic forum
Publication date: 15 January **2020**

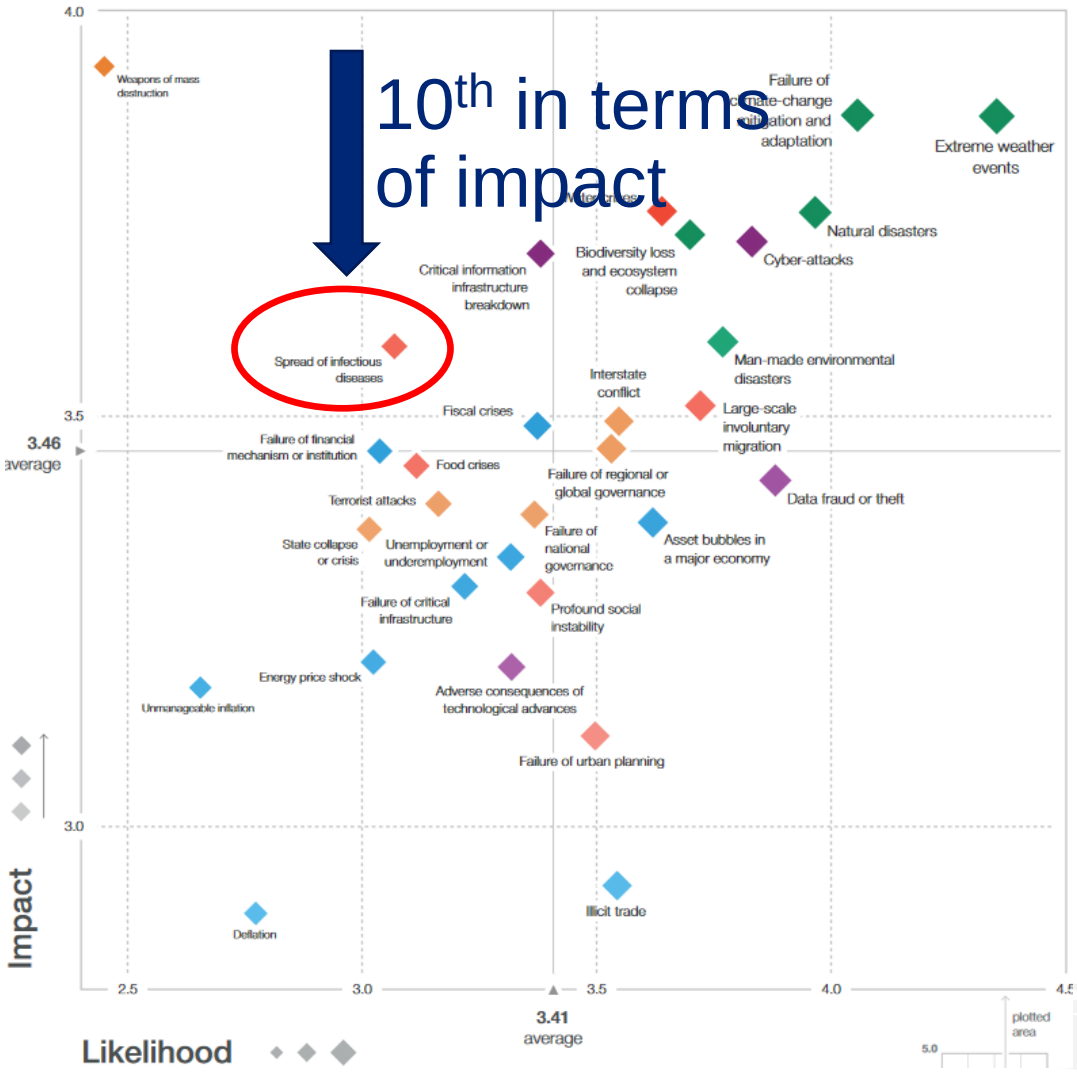


9th in terms of impact



Global Risk report 2019
World economic forum
Publication date: 15 January 2019

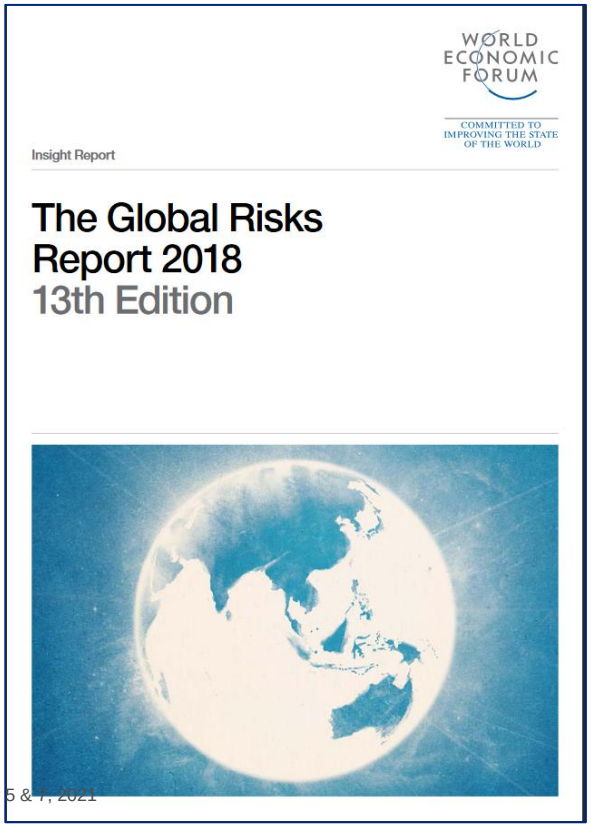


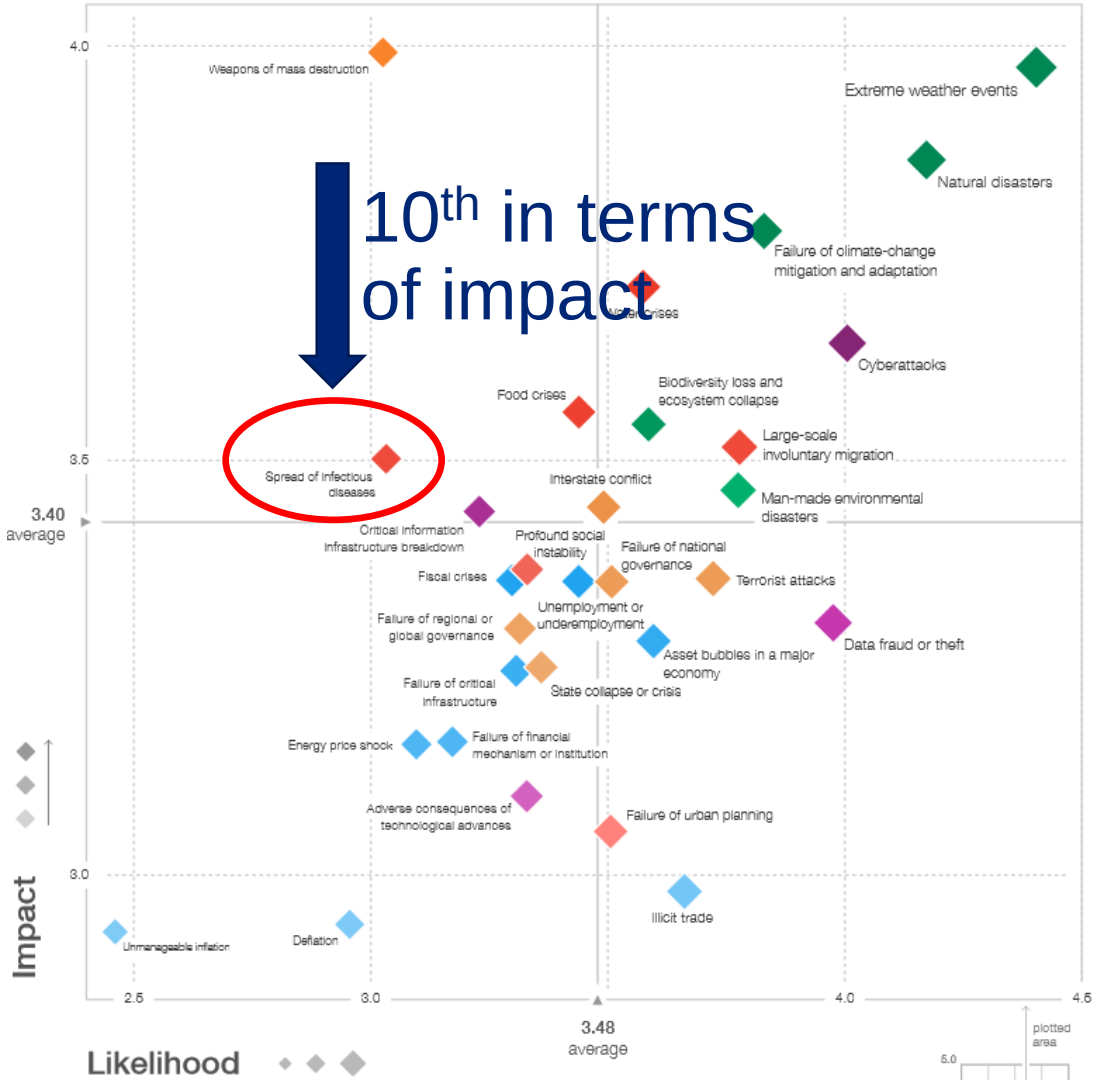


Global Risk report 2018

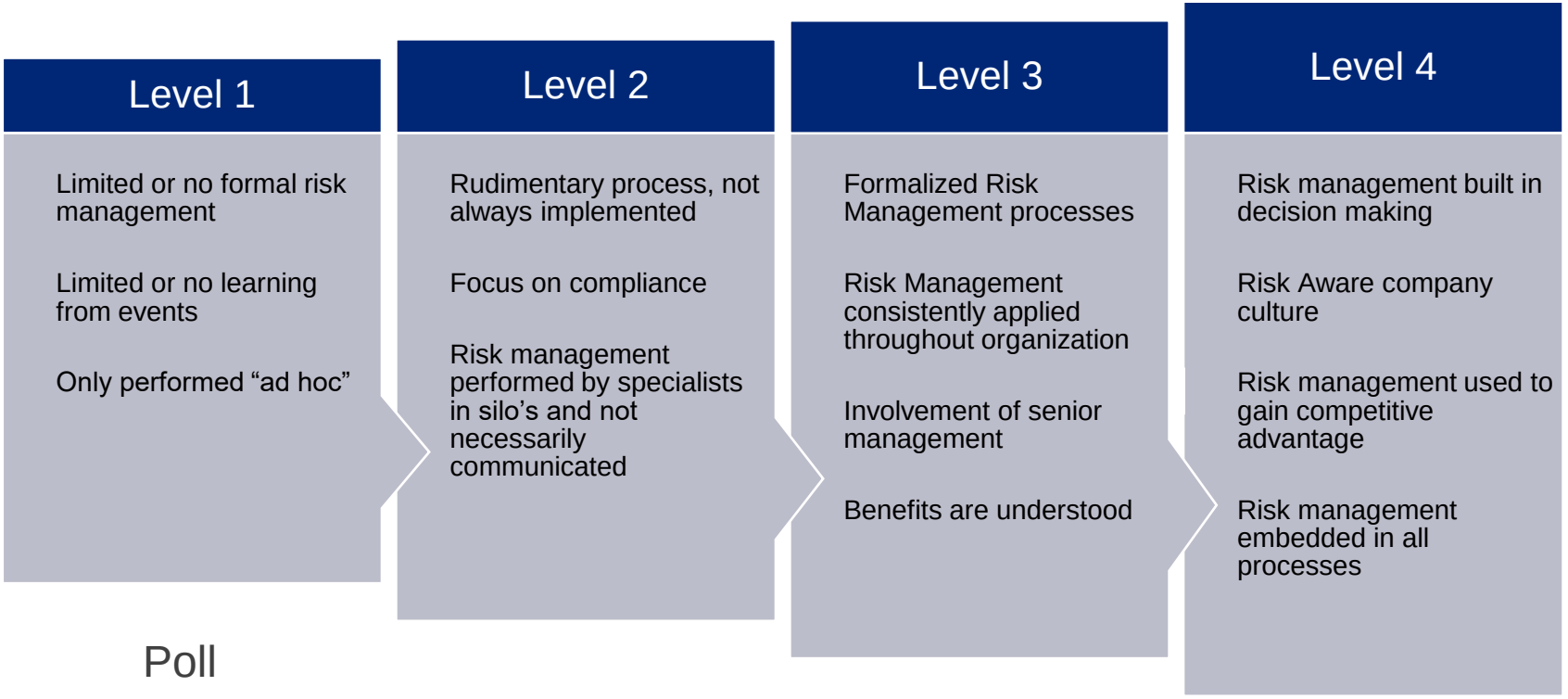
World economic forum

Publication date: 17 January 2018





What is the Risk Management maturity in your company?



Poll

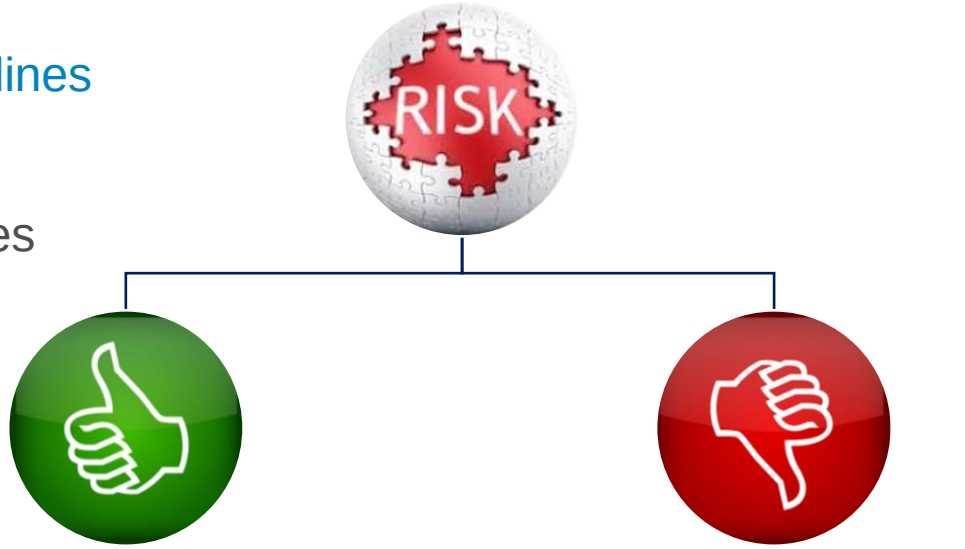
Purpose, Context and Definitions

Definitions

ISO 31000: Risk Management - Guidelines

Risk: effect of uncertainty on objectives

Effect: deviation from the expected



Opportunity
(Positive Risk)

Threat or Risk
(Negative Risk)

Risk Management: Coordinated activities to direct and control an organization with regard to risk

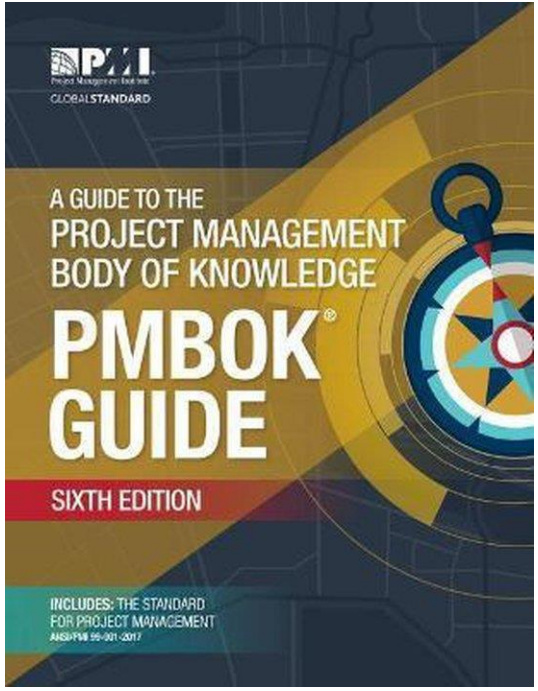
Why Risk Management?

Poll

Why Risk Management?

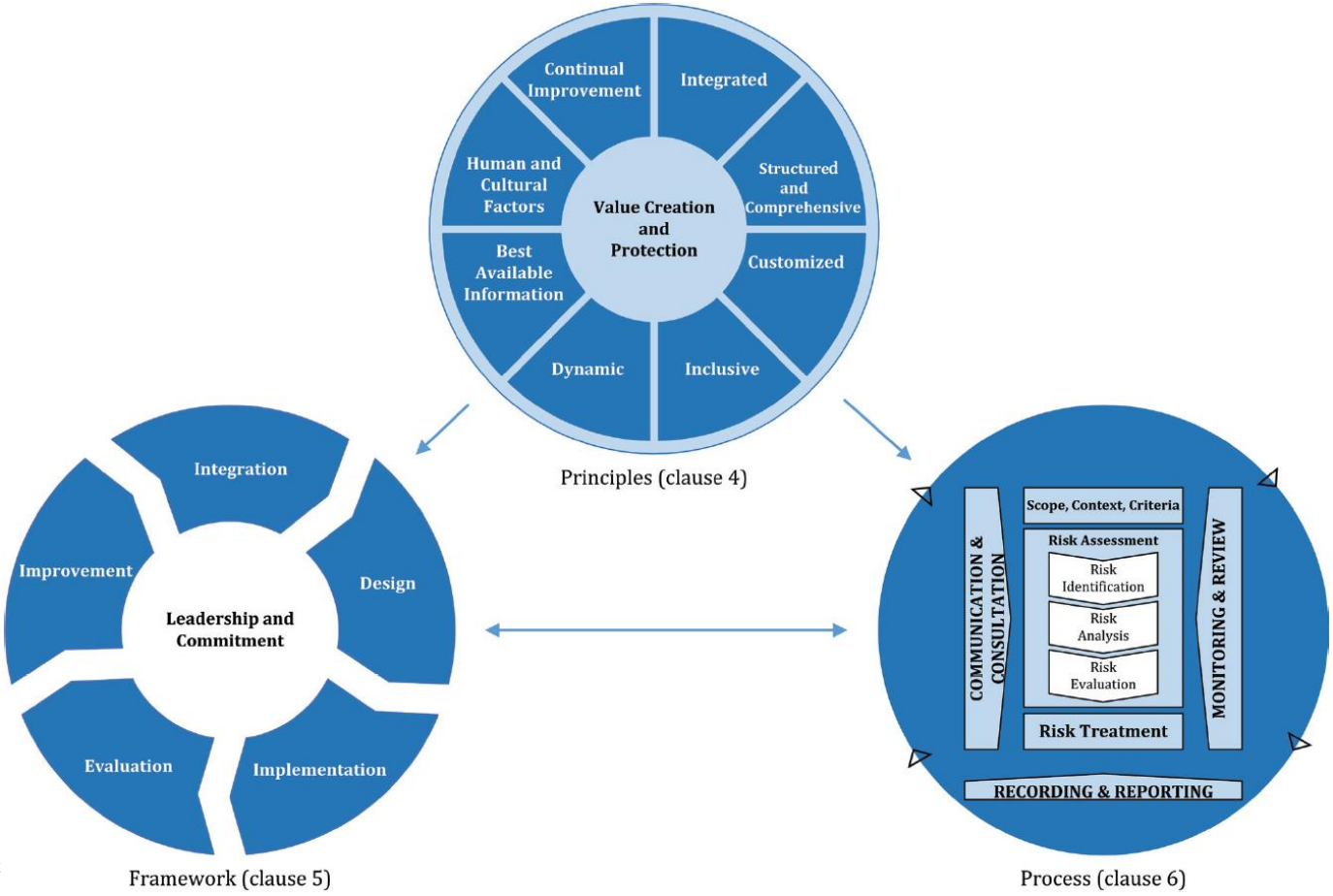
Project Risk Management

The PMBOK's 10 Knowledge areas by the Project Management Institute



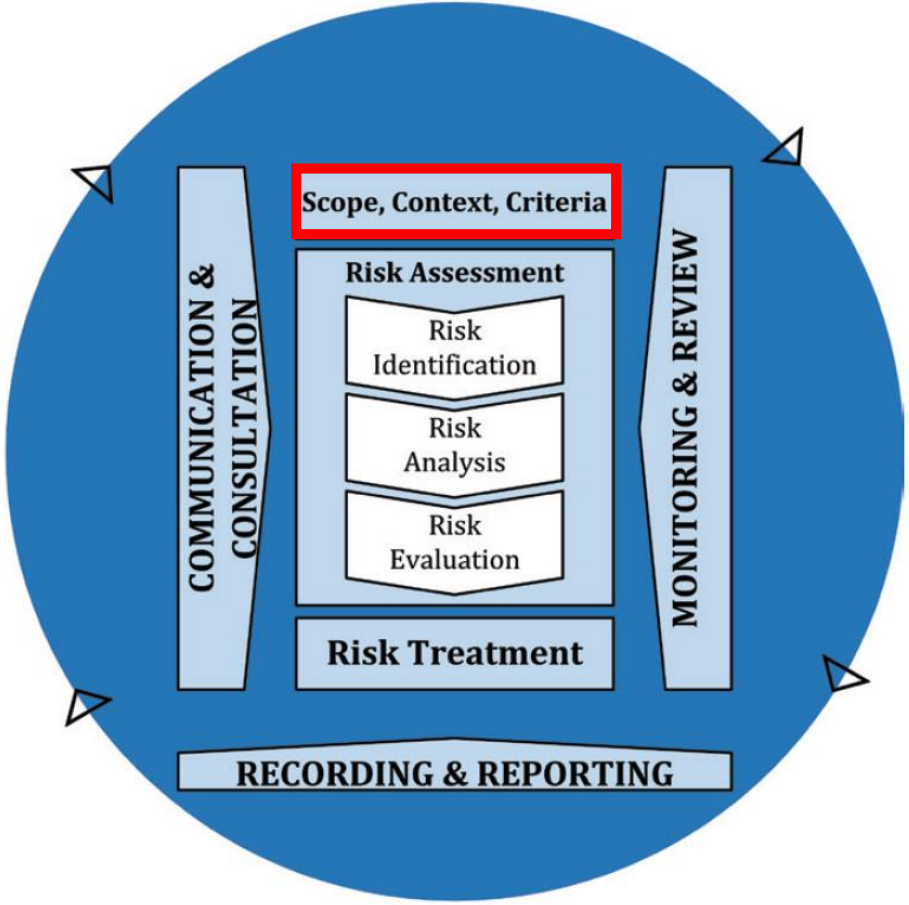
Time Management	Cost Management	Scope Management
Quality Management	Stakeholder Management	HR Management
Risk Management	Communication Management	Procurement Management
Integration Management		

ISO 31000: Risk Management - Guidelines



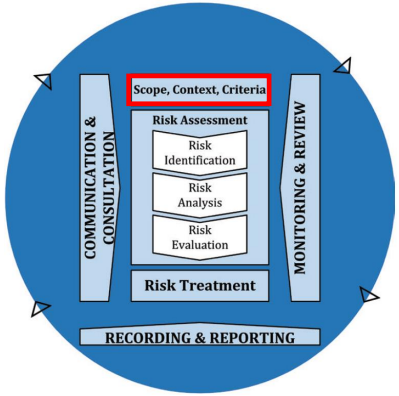
Project Risk Management

Risk Management Process



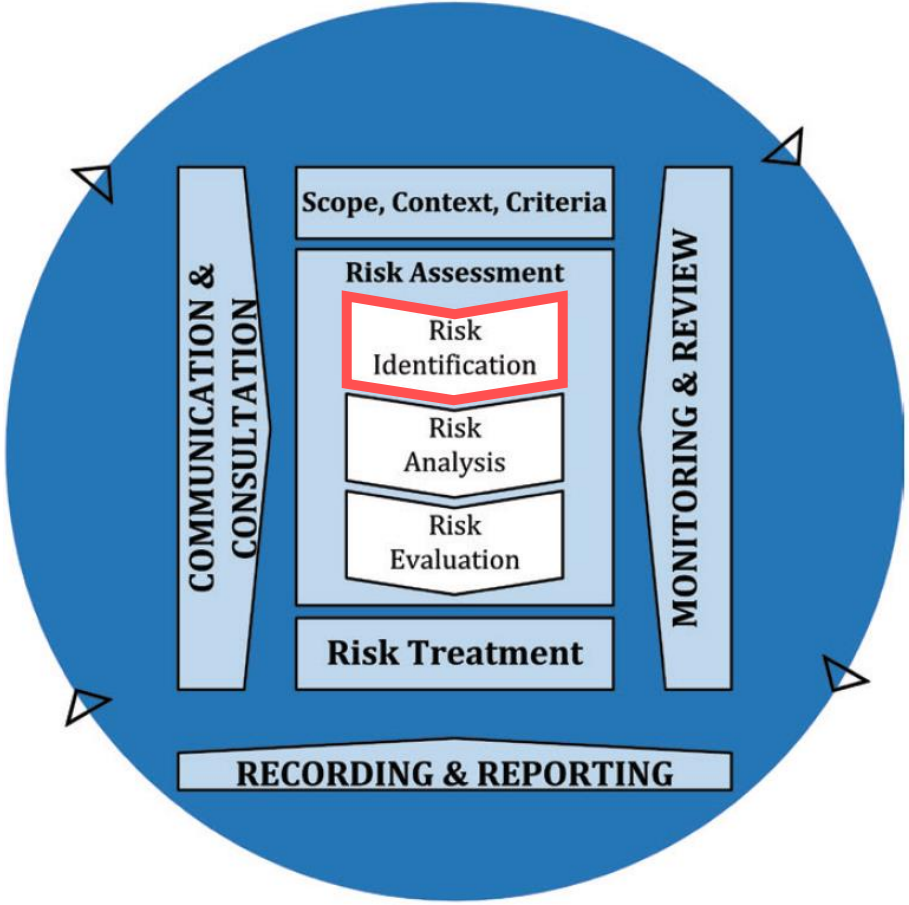
Risk Management Process

Scope, Context, Criteria



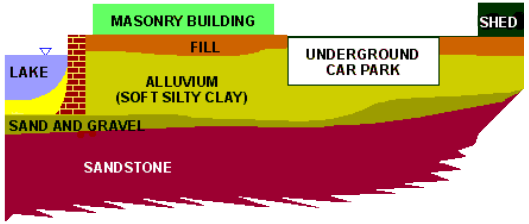
- Who are the stakeholders?
- What are their interests and objectives?
- What is the scope?
- What do we want to reach with the risk management?

Risk Management Process

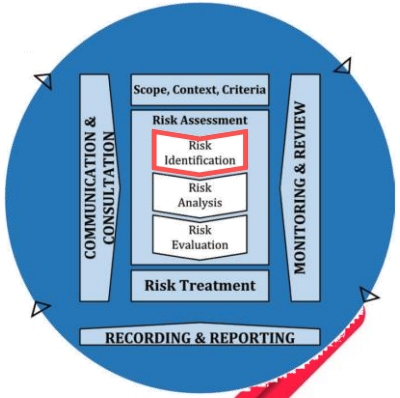


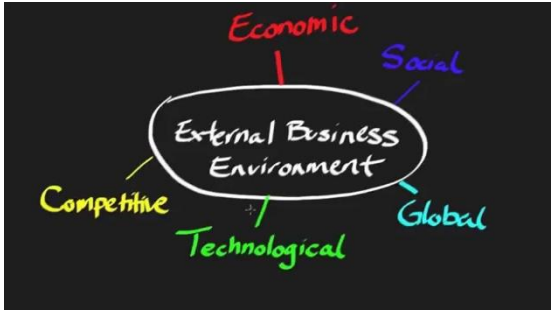
Risk Management Process

Risk Identification



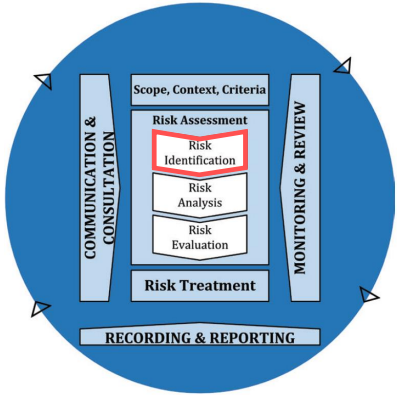
Ground Conditions





Risk Management Process

Risk Identification

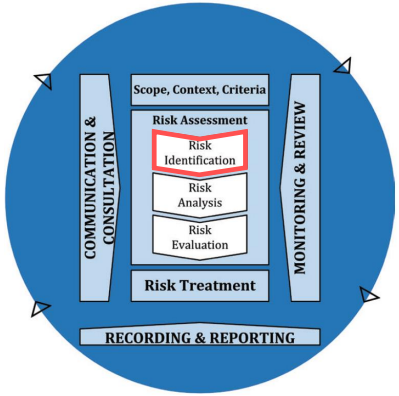


- Process of **finding**, **recognizing** and **describing** the risk

- Because of **cause X**, it may that **risk Y** occurs, and have an **impact Z** on the objectives
- Example:
  - Cause: We are contractually responsible to treat polluted soil at a fixed price. The site hosted industrial activity in the past. A non-exhaustive soil survey was shared by the client.
  - Risk: Encounter more or other soil pollution than budgeted and planned.
  - Consequence: Cost & Time for additional soil treatment. Hazard for workers.

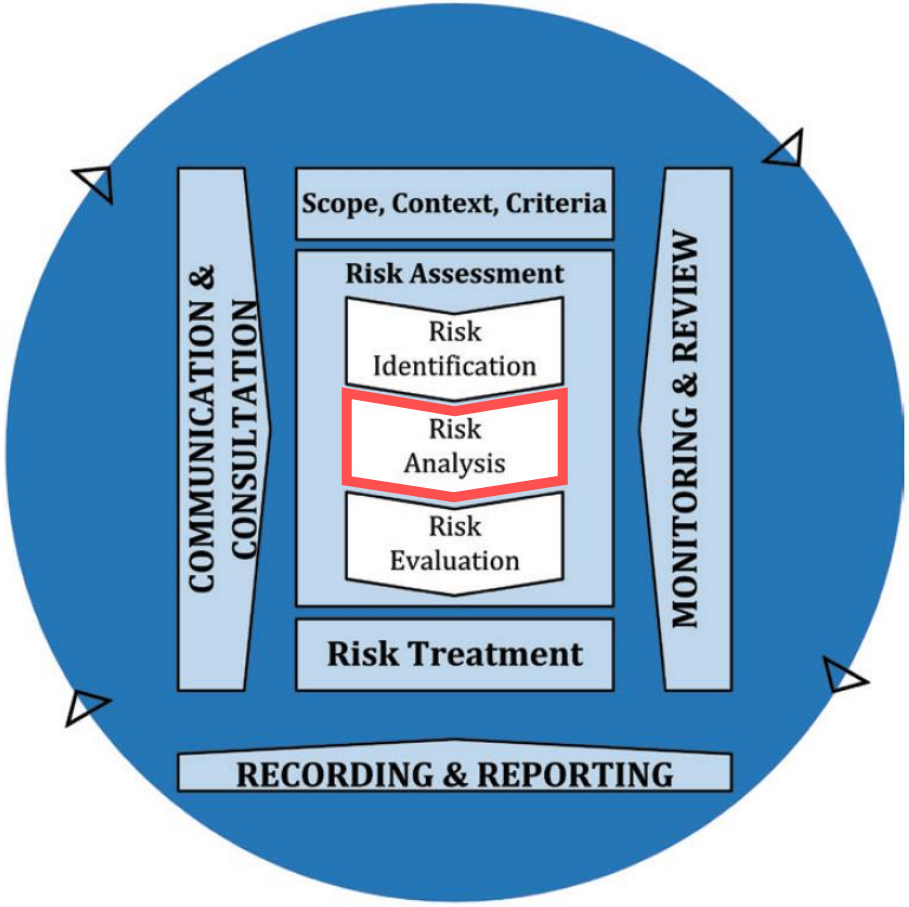
Risk Management Process

Risk Identification



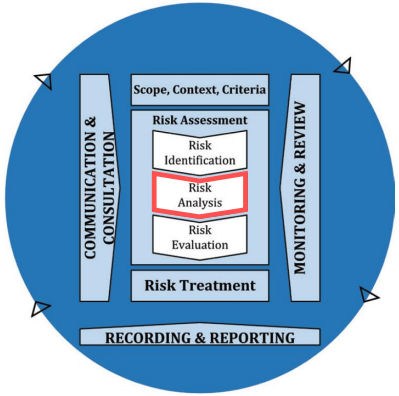
- **How** risks can be identified:
  - General **brainstorming** session with tender/project team
  - **Checklist(s)** used as support for risk identification
  - **Interviews** with **specialists**
  - **Lessons learned** from past projects

Risk Management Process



Risk Management Process

Risk Analysis



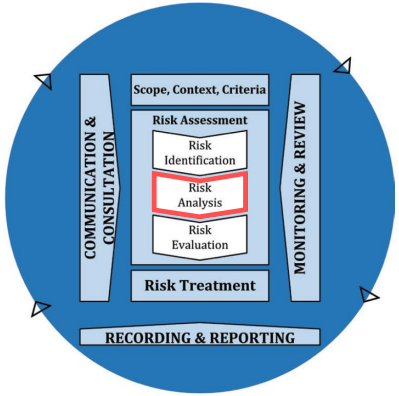
- **Purpose**: Prioritize the risks

  ➔ High risks deserve more attention

- **Several** risk analysis **methods exist:**
  - **Qualitative** risk analysis
  - **Quantitative** risk analysis

Risk Management Process

Qualitative Analysis



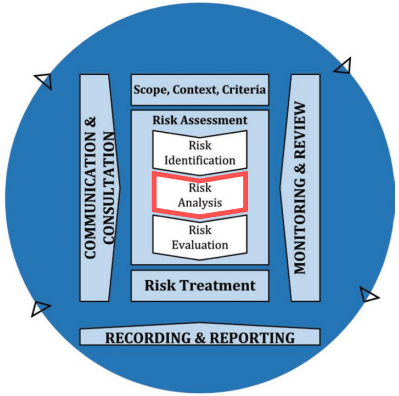
- The risks are analysed on their **likelihood** of occurring and possible **impact** in case of occurrence:

  ➔ Level of Risk = Combination of Likelihood and Impact

- Typical impact types :
  - Economic
  - Time
  - Quality & Conformity
  - Health & Safety
  - Reputation
  - …

Risk Management Process

Qualitative Analysis



- **Likelihood Criteria** example:

Illustrative Likelihood Scale

Rating	Probability Descriptor	Definition
5	Almost certain	90% or greater chance of occurrence over life of asset or project
4	Likely	65% up to 90% chance of occurrence over life of asset or project
3	Possible	35% up to 65% chance of occurrence over life of asset or project
2	Unlikely	10% up to 35% chance of occurrence over life of asset or project
1	Rare	<10% chance of occurrence over life of asset or project

Source: https://www.coso.org/Documents/COSO-ERM-Risk-Assessment-in-Practice-Thought-Paper-October-2012.pdf

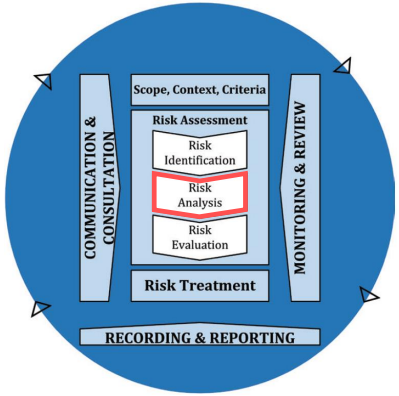
Risk Management Process

Qualitative Analysis

- **Impact Criteria** example:

Illustrative Impact Scale

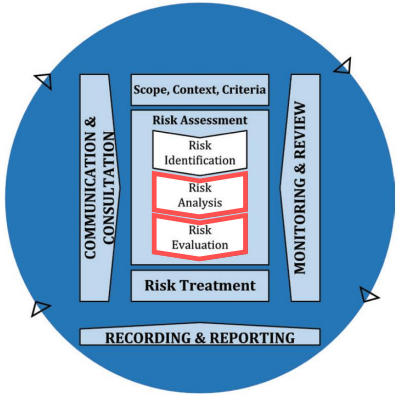
Rating	Descriptor	Definition
5	Extreme	• Financial loss of $X million or more[3] • International long-term negative media coverage; game-changing loss of market share • Significant prosecution and fines, litigation including class actions, incarceration of leadership • Significant injuries or fatalities to employees or third parties, such as customers or vendors • Multiple senior leaders leave
4	Major	• Financial loss of $X million up to $X million • National long-term negative media coverage; significant loss of market share • Report to regulator requiring major project for corrective action • Limited in-patient care required for employees or third parties, such as customers or vendors • Some senior managers leave, high turnover of experienced staff, not perceived as employer of choice
3	Moderate	• Financial loss of $X million up to $X million • National short-term negative media coverage • Report of breach to regulator with immediate correction to be implemented • Out-patient medical treatment required for employees or third parties, such as customers or vendors • Widespread staff morale problems and high turnover
2	Minor	• Financial loss of $X million up to $X million • Local reputational damage • Reportable incident to regulator, no follow up • No or minor injuries to employees or third parties, such as customers or vendors • General staff morale problems and increase in turnover
1	Incidental	• Financial loss up to $X million • Local media attention quickly remedied • Not reportable to regulator • No injuries to employees or third parties, such as customers or vendors • Isolated staff dissatisfaction



Source: https://www.coso.org/Documents/COSO-ERM-Risk-Assessment-in-Practice-Thought-Paper-October-2012.pdf

Risk Management Process

Qualitative Analysis - Evaluation

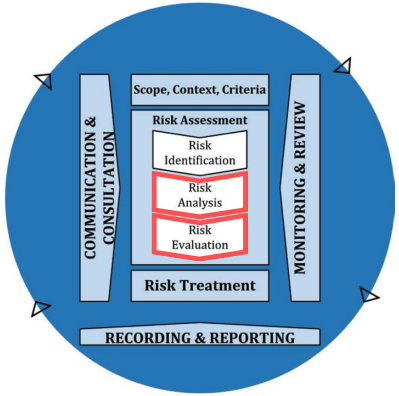


Risk Matrix Scoring		Impact				
		Insignificant	Minor	Moderate	Major	Huge
		1	2	3	4	5
Likelihood	Almost Certain 5					
	Likely 4					
	Possible 3					
	Unlikely 2					
	Rare 1					

Risk Management Process

Risk Management Process

Qualitative Analysis - Evaluation



Risk Matrix Scoring		Impact				
		Insignificant	Minor	Moderate	Major	Huge
		1	2	3	4	5
Likelihood	Almost Certain 5					
	Likely 4					
	Possible 3					
	Unlikely 2					
	Rare 1					

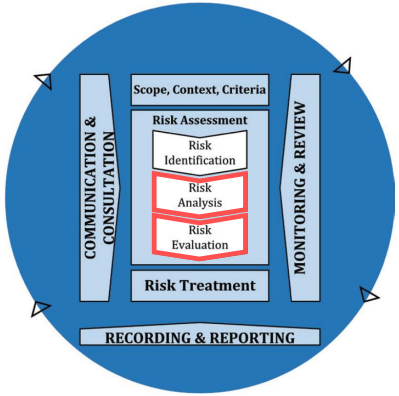
Adjusted contractual condition

Soil pollution

Additional surveys

Risk Management Process

Quantitative Analysis



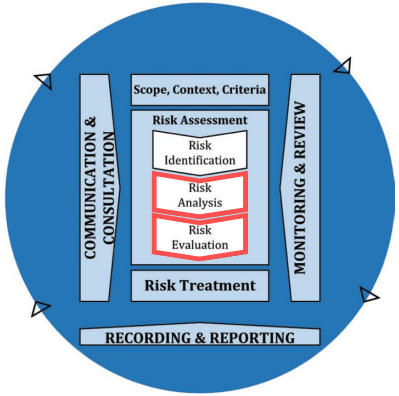
- **Purpose**:
  - Prioritize the risks

    ➔ High risks deserve more attention

  - Numerically analyse the effect of the risks
    - To calculate the risk budget or time contingency
    - To track the evolution of the risk exposure throughout the project

Risk Management Process

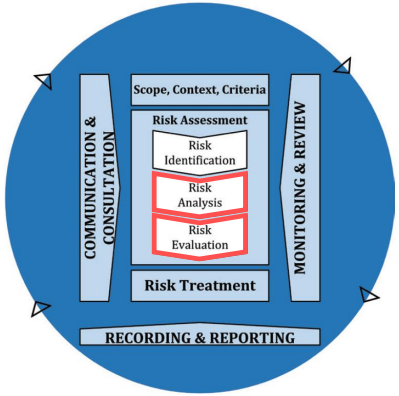
Quantitative Analysis



- **Several techniques / tools:**
  - **Three Point Estimate / Scenario analysis** – a technique that uses the optimistic, most likely, and pessimistic values to determine the best estimate.
  - **Decision Tree Analysis** – a diagram that shows the implications of choosing one or other alternatives.
  - **Expected Monetary Value (EMV)** – a method used to establish the contingency reserves for a project budget and schedule.
  - **Monte Carlo Analysis** – a technique that uses probability and optimistic, most likely, and pessimistic estimates to determine the total project cost and project completion dates. For example, we could estimate the probability of completing a project at a cost of $20M. Or what is a company wanted to have an 80% probability of achieving its cost objectives. What is the cost to achieve 80%?
  - **Sensitivity Analysis** – a technique used to determine which risks have the greatest impact on a project.
  - …

Risk Management Process

Quantitative Analysis

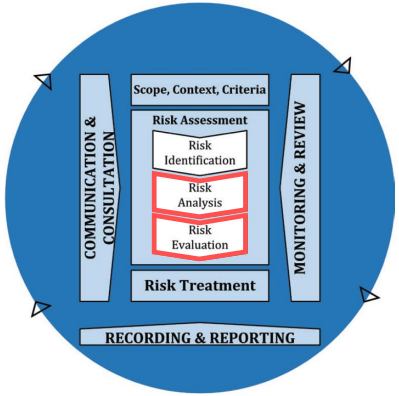


- **Expected Monetary Value**

Risk	Probability		Cost Impact		EMV
Risk 1	15%		€ 75 000		€ 11 250
Risk 2	30%	X	€150 000	=	€ 45 000
Opportunity 3	25%		€ -55 000		€-13 750
Total EMV					€ 42 500

Risk Management Process

Quantitative Cost Risk Analysis

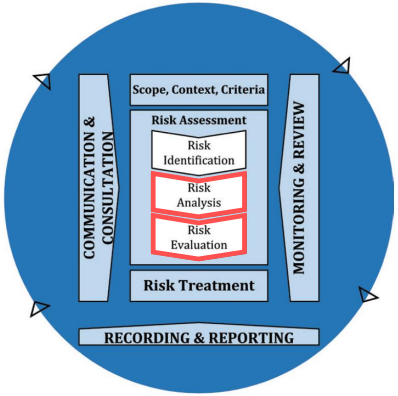


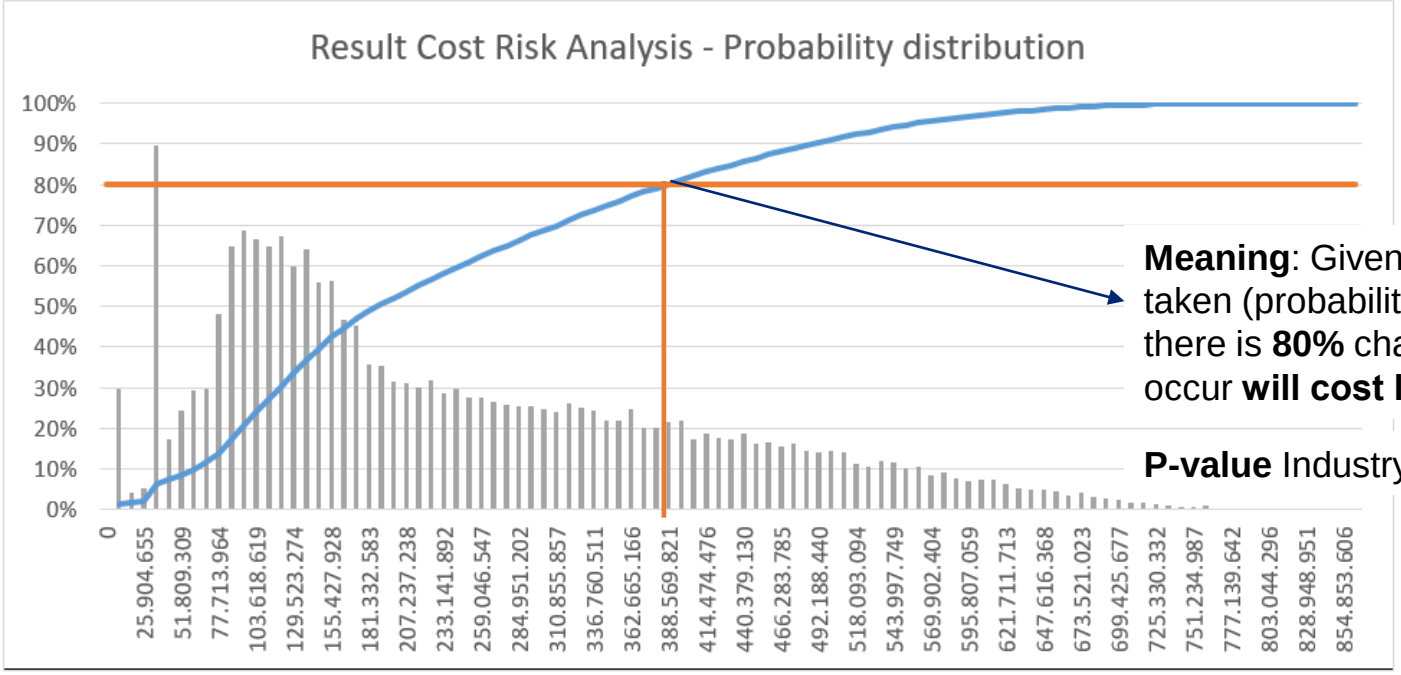
- **Monte Carlo analysis**

Risk	Probability	Optimistic Cost Impact	Most likely Cost Impact	Pessimistic Cost Impact
Risk 1	15%	€ 50 000	€ 75 000	€ 150 000
Risk 2	50%	€ 0	€ 150 000	€ 600 000
Risk 3	25%	€ 5 000	€ 55 000	€ 60 000
Risk 4	75%	€ 35 000	€ 50 000	€ 150 000
Risk 5	75%	€ 25 000	€ 30 000	€ 35 000
Risk 6	30%	€ 0	€ 10 000	€ 50 000

Risk Management Process

Quantitative Cost Risk Analysis



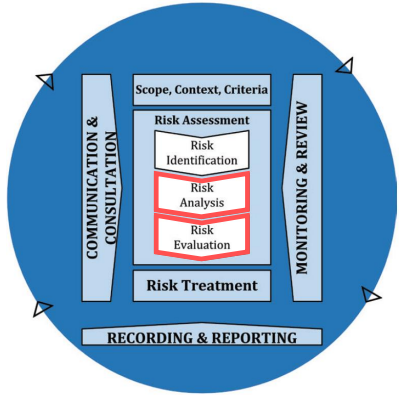


Meaning: Given the **assumptions** taken (probability, impact, distribution), there is **80%** chance that the risks that occur **will cost less than € 387 000**

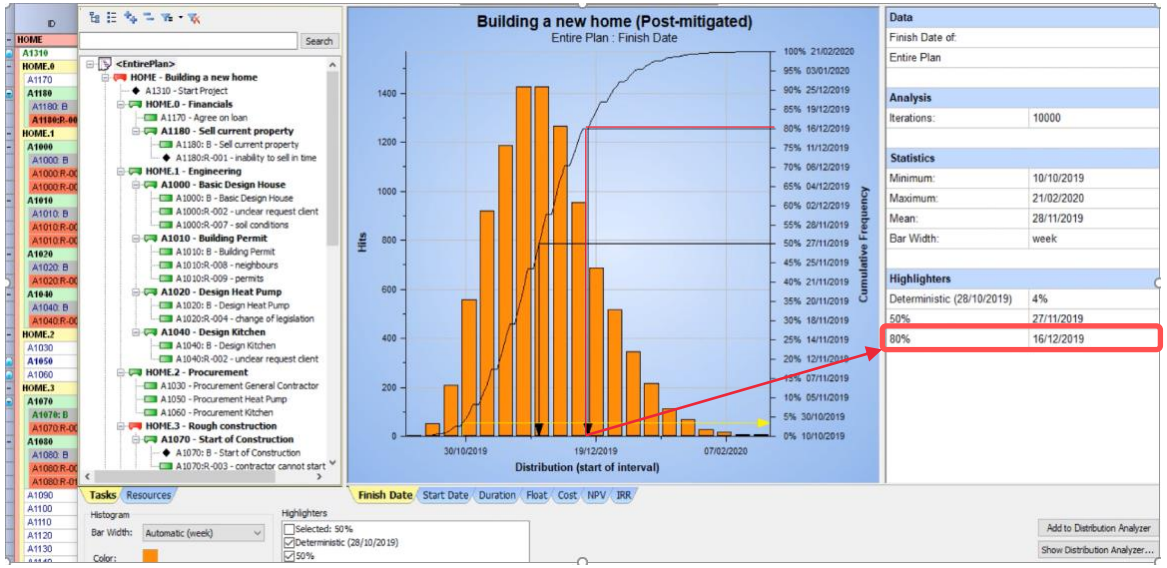
P-value Industry practice: P75 ➔ P85

Risk Management Process

Quantitative Schedule Risk Analysis



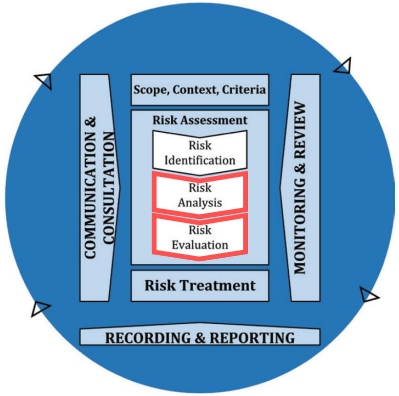
- **Monte Carlo analysis on schedule**



Meaning: Given the **assumptions** taken (probability, impact, distribution), there is **80%** chance that the project will be finished before 16/12/2019

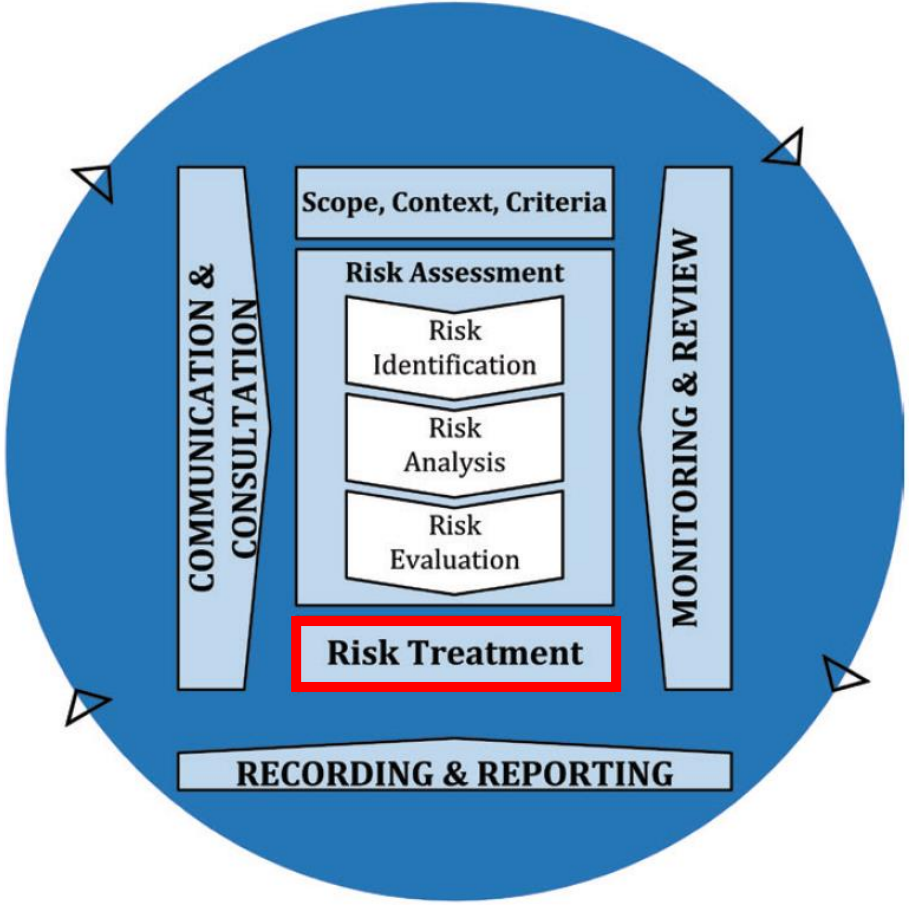
Risk Management Process

Qualitative vs. Quantitative Analysis



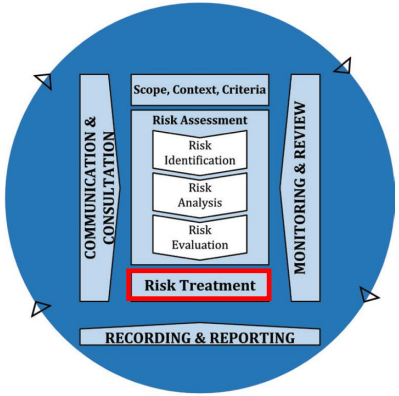
Qualitative	Quantitative
Faster and easier to understand	More complex
Simple tooling	Advanced tooling
More subjective outcome	Outcome more precise and accurate
	but garbage in, garbage out

Risk Management Process

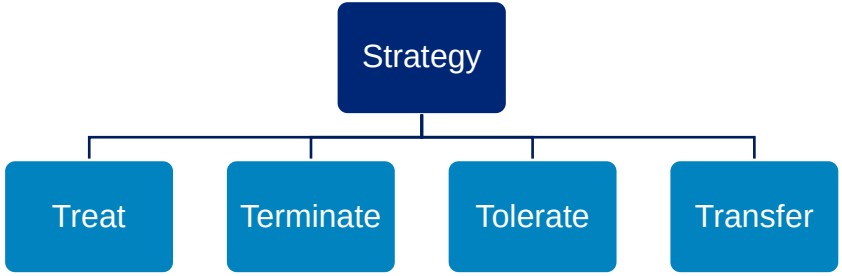


Risk Management Process

Treatment - Response Strategies



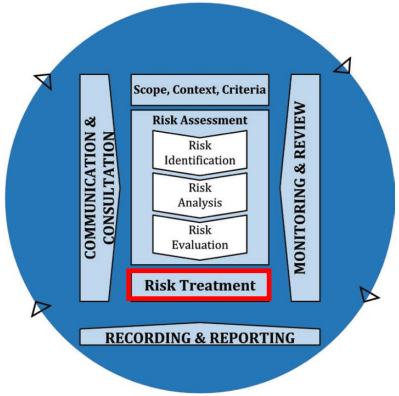
- Determination of the best **attitude to adopt** for each risk



- **Treat / Reduce**: we accept to take the risk as a part of our **responsibility as a contractor,** and decide to proactively **foresee treatment measures** in order to lower the risk
- **Terminate / Avoid**: we **refuse** to take the **ownership** of the threat ➔ **qualification in our offer / negotiation**
- **Tolerate / Accept**: we accept to take the risk as a part of our **responsibility as a contractor,** but we do not foresee treatment measures as we judge the risk as being acceptable ➔ for low to very low risks
- **Transfer**: we **re-allocate** the risk to **someone else** typically insurance, subcontractor, …

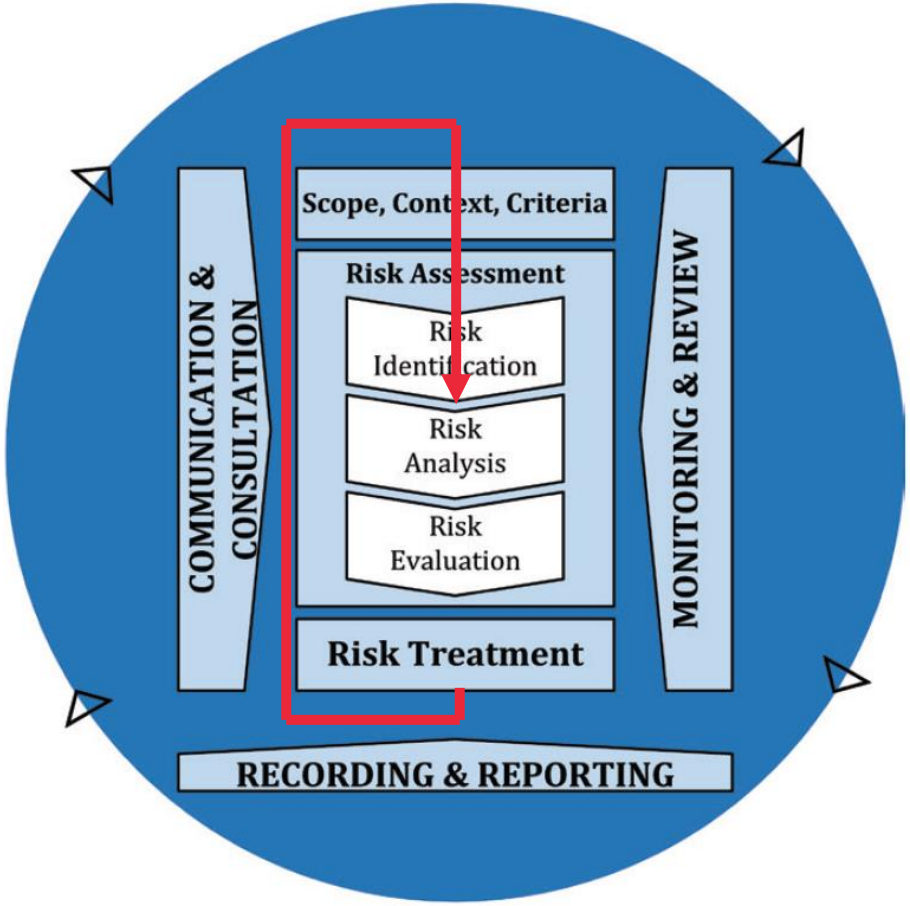
Risk Management Process

Treatment Plan

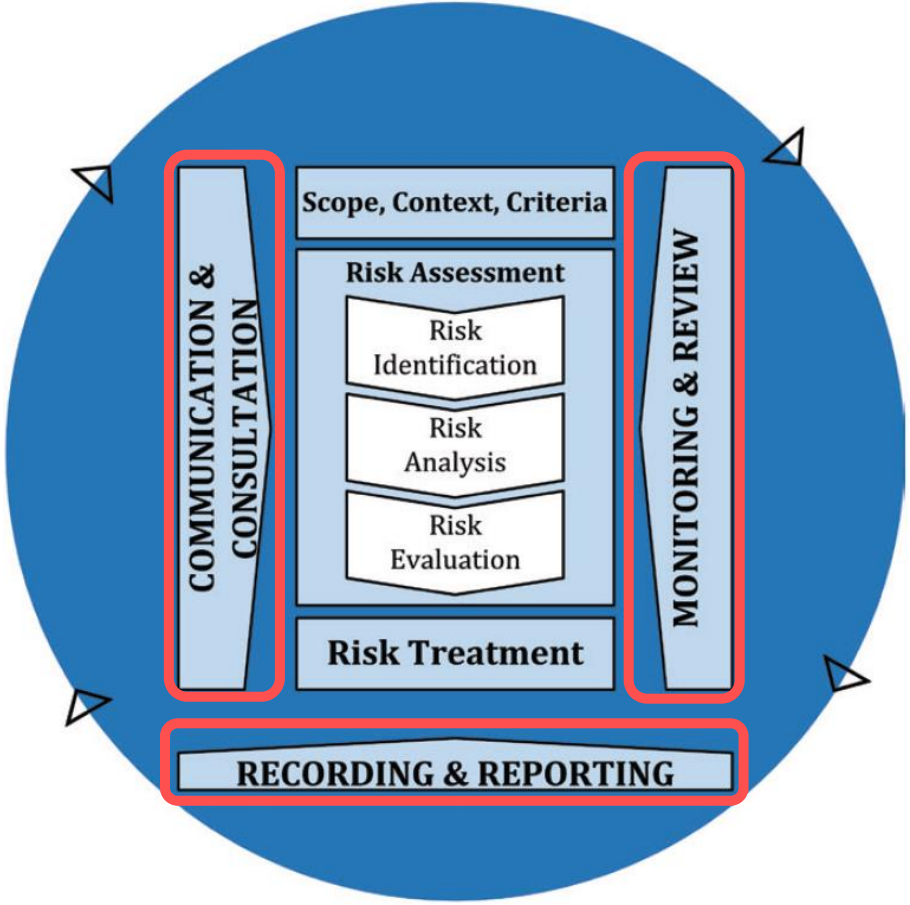


- Define a **risk owner** ➔ person within project team with responsibility to manage the risk
- Define **preventive** and/or **mitigation** measures to lower the likelihood and/or impact
- Define the **action owner** and **target date**➔ person/company responsible to perform the measure
- Analyse the effectiveness of the measure by evaluating the **expected residual risk**

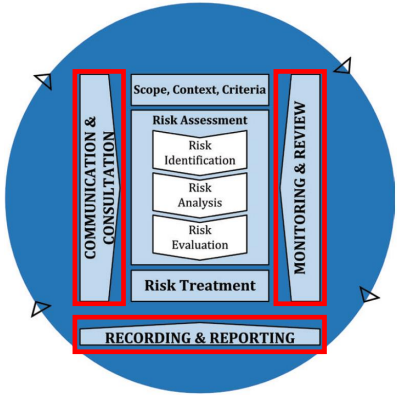
Risk Management Process



Risk Management Process

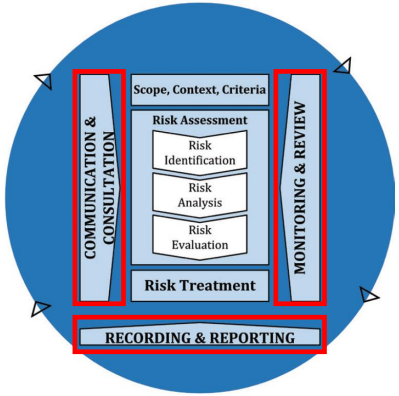


Risk Management Process



- Communication and consultation:
  - Promote awareness of risk analysis
  - Seek for feedback and information in decision making
- Monitoring and review:
  - Is the risk management effective?
  - When do we plan risk review activities?
  - At tender stage? And during project execution?
  - Who should be involved?

Risk Management Process



- Recording and reporting:
  - Record the risks management ➔ typically in a risk register
  - Periodically report the risks
    - Top risks, new risks, closed risks
    - Are the foreseen measures taken on time?
    - Are the measures as effective as intended?
    - How does the overall risk exposure evolves?
    - Do some risks need to be escalated?
    - Internally? Externally?

Risk Register Example

	1. RISK IDENTIFICATION					2. QUALITATIVE RISK ANALYSIS BEFORE TREATMENT												
Risk Breakdown Structure (R.B.S.)	RISK ID	[T]HREAT or [O]PPORTUNITY	PARTICULAR RISK EVENT Description of the particular unwanted event	POSSIBLE CAUSES Description of the causes leading to the unexpected event	CONSEQUENCES Consequences of the particular risk event	LIKELIHOOD		ECONOMIC			TIME			QUALITY CONFORMITY			HSE - REPUTATION			RISK MATRIX
RiskCategory													ZA					ZA	
METHODS & SITE	MET03.02	T	The actual infrastructure (roads/bridges/...) are damaged by the excessive use by rock trucks	Actual roads from quarries to site are in bad shape or not designed for the intended excessive rock trips; no proper (joint) insurvey with authorities	Repairs to the infrastructure= costs	Likely	4	Major	4	19		-	-		-	-		-	-	19
PROCUREMENT & SUPPLY CHAIN	PRO04.01	T	-The selected rock supplier cannot produce the required quantities of materials to specs	-structural undercapacity of rock supplier/quarries; -high demand (simultaneous civil work projects); -no technical screening of supplier prior to contracting;	-delays; -extra costs for remediation (e.g. alternative a/o complementary supplier,...)	Possible	3	Huge	5	18	Minor	2	7		-	-		-	-	18
METHODS & SITE	MET06.01	T	Backfill platform is eroding during the waiting time - before the completion of the rock revetment - Loss of material	-No temporary protection of the backfill platform foreseen	-costs	Possible	3	Moderate	3	11	Minor	2	7	Minor	2	7		-	-	11

Risk Register Example

	1. RISK IDENTIFICATION			3. RESPONSE STRATEGY			4. TREATMENT PLAN		5. QUALITATIVE RISK ANALYSIS AFTER TREATMENT																
Risk Breakdown Structure (R.B.S.)	RISK ID	[T]HREAT or [O]PPORTUNITY	PARTICULAR RISK EVENT Description of the particular unwanted event	STRATEGY	RISK ALLOCATION Party carrying the risk	OWNER BESIX Agent in charge of the particular risk	PREVENTIVE / MITIGATION MEASURES Measures to be implemented in order to reduce Likelihood or Impact	RESIDUAL RISK	LIKELIHOOD		ECONOMIC			TIME			QUALITY CONFORMITY			HSE - REPUTATION			RISK MATRIX
METHODS & SITE	MET03.02	T	The actual infrastructure (roads/bridges/...) are damaged by the excessive use by rock trucks	Tolerate	JV	Frédéric Kennes	Foresee residual risk contingency for repairs	Remains	Likely	4	Major	4	19	-	-		-	-		-	-		19
PROCUREMENT & SUPPLY CHAIN	PRO04.01	T	-The selected rock supplier cannot produce the required quantities of materials to specs	Treat	JV	Frédéric Kennes	-Include SRA result (penalties/IC/acceleration/...); -investigate option for stockpiling; -investigate option for hydraulic fill.	-hydraulic fill, usin Client's sand concession might not be available a/o suitable.	Unlikely	2	Huge	5	17	Moderate	3	8		-	-		-	-		17
METHODS & SITE	MET06.01	T	Backfill platform is eroding during the waiting time - before the completion of the rock revetment - Loss of material	Tolerate	JV	Frédéric Kennes	Additional m3 + plant 1-2wk		Possible	3	Moderate	3	11	Minor	2	7	Minor	2	7		-	-		11

What’s in it for me?

- At tender stage:
  - Better and faster **understanding** of the **major risks** of the project
  - Opening of discussion with the different stakeholders about **risk allocation** at an early stage
  - **Correct pricing and scheduling** of the risk treatment measures and the residual risk

- During project execution:
  - Better **awareness** of risk through the entire **project team** ➔ better decisions
  - More **pro-active and preventive approach**, less ‘firefighting’
  - Reduce the **failure costs** and **deliver on time**

Tips to get started

- **Start simple** and further develop as the risk maturity of your company grows
  - E.g. start by listing top risks for every tender / project
- **Appoint someone** to formalize and implement the risks management process
- **Customize the process** to the type of project / activity
- **Focus** on risks that matter ➔ 10 well managed top risks are better than 100 unmanaged ones
- Foresee **key moments** to reflect on risks. E.g.:
  - at tender stage: when starting the tender, at 50% progress and before submitting binding offer
  - during execution: foresee a monthly risk review meeting with key project members

La Libre

Abonnez-vous

Planète › Santé

Un rapport de l'OMS, auquel Maggie De Block a participé, met en garde sur une "nouvelle pandémie"

Il y a environ un an, un groupe d'experts de la santé avait été formé par l'OMS afin d'analyser la gestion de la pandémie de coronavirus par les différents gouvernements européens. L'objectif était de tirer des leçons afin d'éviter les mêmes erreurs que par le passé. Ce vendredi, Het Laatste Nieuws révèle leurs conclusions dans un rapport catégorique: "il n'y avait aucune excuse pour ces échecs."

La Rédaction avec Belga

Publié le 10-09-2021 à 10h15 - Mis à jour le 10-09-2021 à 11h59

De Standaard

HOME > NIEUWS > BINNENLAND

Maggie De Block schreef mee aan nieuw WHO-rapport: 'Dat er een nieuwe pandemie komt, is zeker'

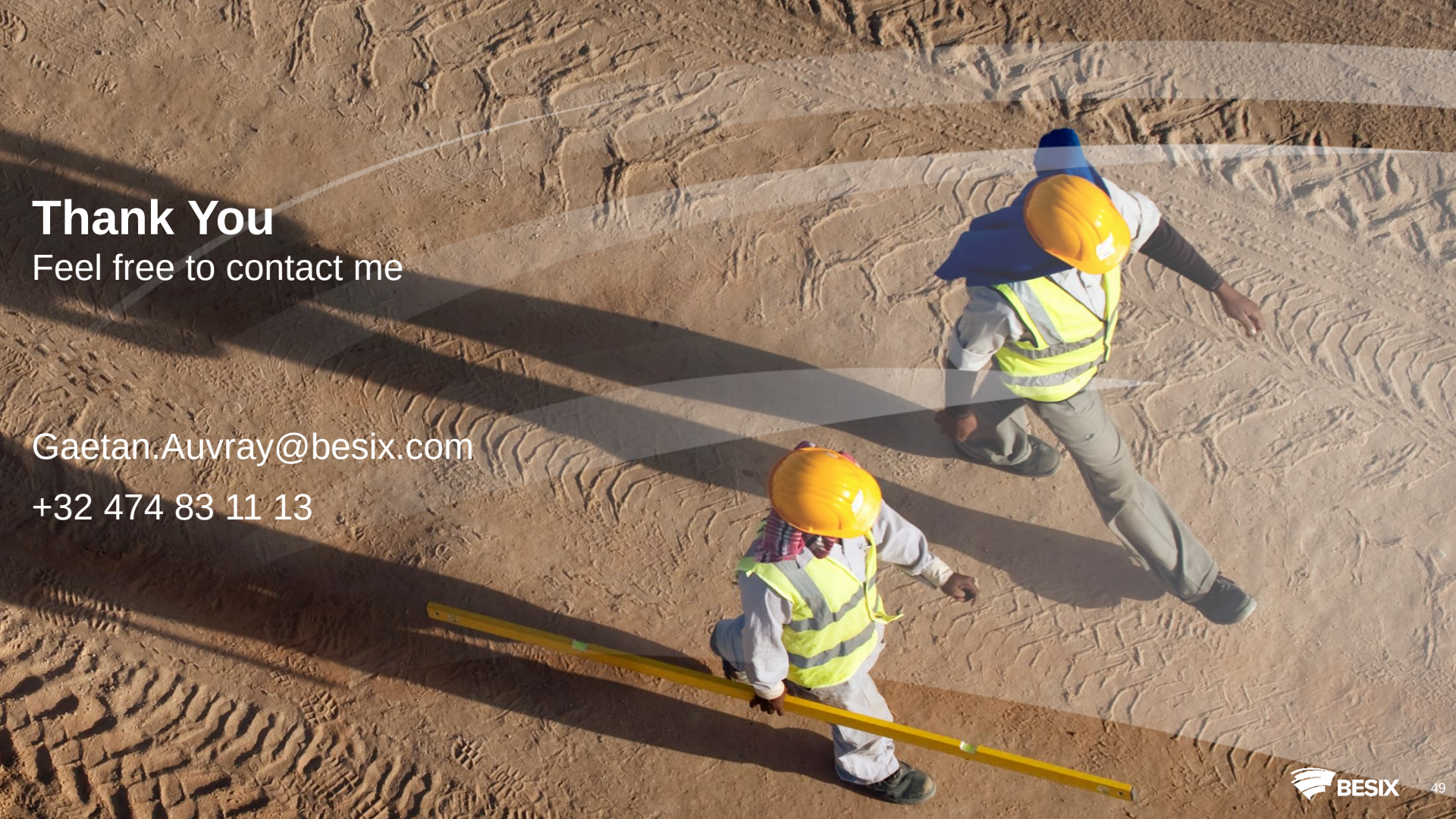
Vandaag om 12:06 door jvh | Bron: Radio 1, Belga

Foto: BELGA

Een werkgroep van de WHO heeft een rapport geschreven over de lessen die de wereld moet trekken uit de coronapandemie. Voor ons land nam voormalig minister van Volksgezondheid Maggie De Block deel. Zij vindt dat er – zowel op Europees als Belgisch niveau – beter samengewerkt moet worden, al viel het met die fouten tijdens het afgelopen anderhalf jaar volgens De Block best mee.

“If you don’t invest in risk management,
it doesn’t matter what business you’re in,
it’s a risky business.”

- Gary Cohn -



Thank You

Feel free to contact me

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