

# Bridging the gap between science and practice: What kind of climate research do companies need?

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**SITRA**

## Hiilineutraali teollisuus

### Mitä:

Käynnistää teollisuuden muutosprosessin kohti hiilineutraalia yhteiskuntaa. Tämä kehitys tukee ekologisen ja taloudellisen kestävyuden rakentamista. Samalla vienti ja työpaikkojen määrä kasvavat.

### Miten:

- Tuottamalla teollisuuden käyttöön työkaluja ja rakennuspalikoita, jotka auttavat yrityksiä laatimaan pitkän tähtäimen tiekartan muuntumiseen hiilineutraaliutta kohti.
- Käynnistämällä kansainvälisen tason cleantech-referenssialueen
- Tekemällä suosituksia elinkeinopolitiikan kehittämiseksi hiilineutraaliutta edistäväksi.

## Tavoitellut tulokset

### Muutokseen aktivoiminen

on vauhdittanut koko yhteiskunnan energiamurrosta ja suuryritykset näyttävät suuntaa.

### Teollisuuden muuntuminen

Yrityshankkeiden kokemuksista kootaan esimerkkejä tukemaan teollisuuden siirtymistä kohti hiilineutraaleja tuotteita, ratkaisuja ja liiketoimintaa.

### Lisää kilpailukykyä, vientiä ja työpaikkoja

on syntynyt yritysten varautuessa muutokseen liiketoimintalähtöisesti.

### Suosituksset

auttavat edistämään hiilineutraalin yhteiskunnan kehittämistä pitkällä aikavälillä.

# Climate Leadership Council

## Vision 2030

Forerunner companies are leading other companies and organisations with their example to move towards operations that lead to carbon-neutrality and sustainable use of natural resources, both in Finland and abroad. They have succeeded in creating competitive solutions to global environmental challenges.

## Strategy

The members of the Council are systematically developing their operations / actions, thereby encouraging other organisations, communities and decision-makers to join. The Council is also collecting best practices and sharing information.

Each year, the Council selects a few significant common projects to develop and promote.



## Board

Pertti Korhonen, Chairman of the Board, Outotec Oyj  
Mikko Kosonen, Vice-Chairman of the Board, Sitra  
Antti Herlin, KONE Oyj  
Tapio Kuula, Fortum Corporation  
Matti Lievonen, Neste Oil Plc  
Mika Anttonen, St1  
Henrik Ehrnrooth, Caverion Corporation

J Keronen, Climate Leadership Council

# Climate Leadership Council: Focus areas in 2015

## Main focus areas in 2015:

- Supporting the development of the capital area into a global cleantech reference area
- Supporting World Bank Carbon Price initiative and development of global carbon pricing mechanisms
- Development and piloting climate and carbon risk analysis tools and methods
- Reducing organizations' carbon foot print
- Developing low-carbon transport- and building solutions
- Developing renewable energy, energy storage and demand-side management solutions

# Mobilizing people to climate action

Key question: How can science encourage people towards low-carbon behaviour?

- From scientific accuracy to fast and lean trials and initiatives
- Reaching to policy-makers and large masses in addition to academic journals
- Randomized control trials aiming to policy-relevant outcomes about human behavior with regards to climate issues
- Developing new information about what seems to work – fast!
  - Incentives and dis-incentives
  - Human behavior in groups and individually
  - The influence of observations, thoughts, attitudes, beliefs, emotional reactions, habitual behavior, unconscious behavior and heuristics

# Ilmastokysymykset vaativat monialaista tutkimusta

Esimerkkejä mahdollisista tutkimusalueista:

- 1) Tulevaisuuden energiajärjestelmän toiminnallisten periaatteiden kuvaus ja "arkkitehtuuri".
- 2) Uusiutuvaa energiajärjestelmää ei voi fyysisesti tuhota. Tai ainakin se on vaikeaa. Mutta yhdellä "madolla" sen voi lamauttaa? Toinen aihepiiri on "Tulevaisuuden energiajärjestelmän kyberturvallisuus – mahdollisuudet ja uhat".
- 3) Mitä uusiutuvan energian järjestelmän eteneminen tarkoittaisi kansainvälisissä suhteissa ja seuraukset globaaleille voimasuhteille. Siis suomeksi: geopoliittiset vaikutukset ja niistä edun saaminen.

# Climate Change Risk Assessment Framework

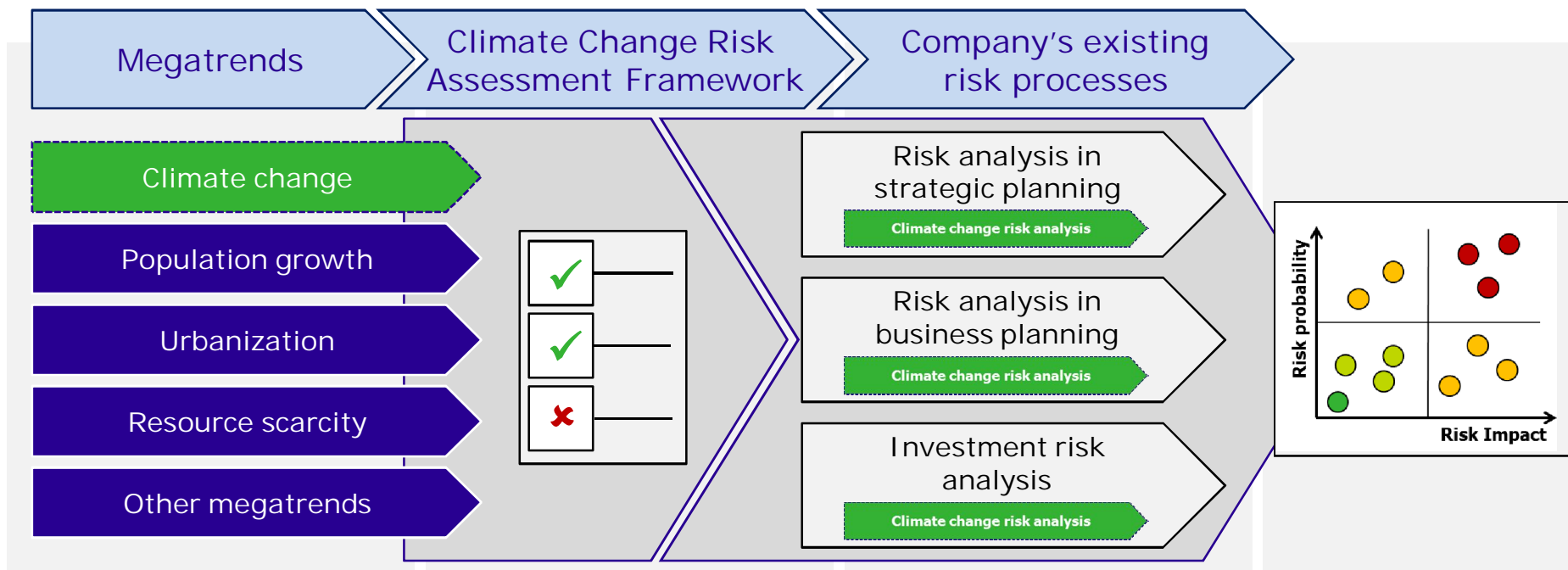
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# Climate Change Risk Assessment Process Framework Overview

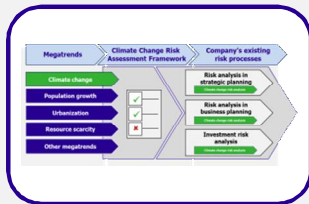
- The scope of the climate change risk assessment is to support the **business risk analysis** in terms of **climate change risks** among the other megatrends by **integrating** the assessment to company's **existing risk processes**
- This is a framework to **support adaptation** to climate change risks and impacts, **not to manage** the climate change itself



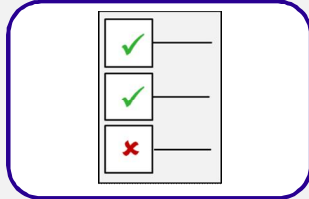


# Climate Change Risk Assessment Process

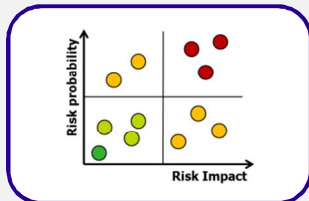
## Process Background



The idea is of the check-list is to integrate the climate change risk assessment to company's existing risk processes to support adaptation to climate change risks and impacts.



The objective is to concentrate the analysis to the aspects that can be impacted by the Corporates and supports the adaptation to the negative impacts and business continuity.



The risk analysis works as a check-list of the climate change impacts in the respective country. All critical items are lifted and integrated to the overall risk analysis and risk maps presented for the business plan or the project.

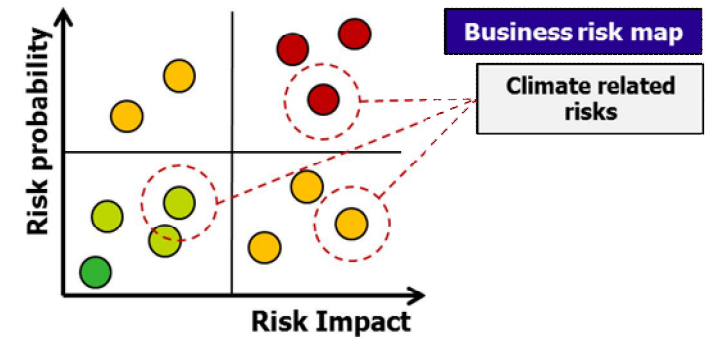
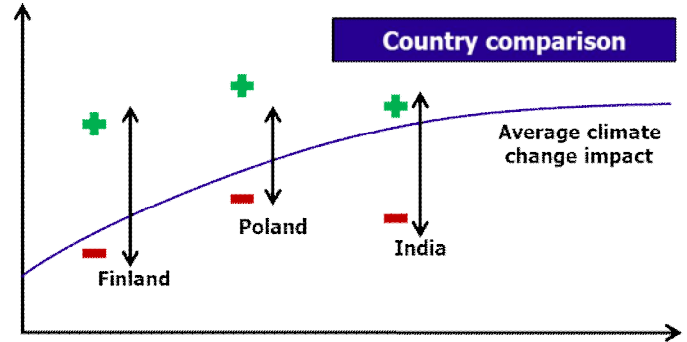
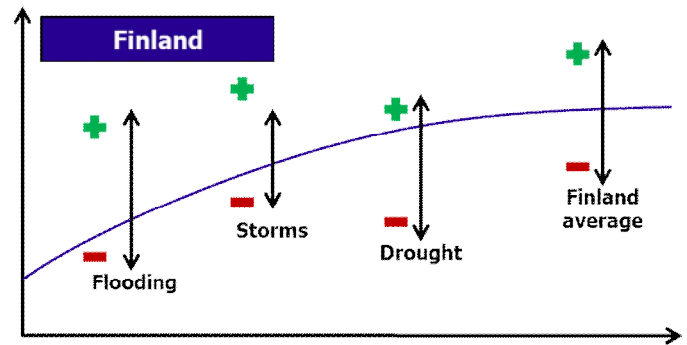
More holistic and comprehensive assessment of the risk landscape

# Climate Change Risk Management Framework

## Assessment Process

**Illustrative draft**

- Helps to identify and analyze climate related risks (negative and also positive) in different countries and regions
- The risk analysis works as a check-list of the climate change impacts in the respective country. Facilitates documentations of
  - Company specific implications
  - Materiality before actions
  - Actions
  - Criticality after actions (Red-Yellow-Green)
- The guidance is that all critical items are lifted and integrated to the overall risk analysis and risk maps presented for the business plan or the project



# Climate Change Risk Management Framework

## Tool Overview

	Climate change influence	Impact (Risk)	Consequence in 2 degree warming scenario	Consequence in 4 degree warming scenario	Business impact	Probability	Materiality before actions	Risk mitigation/ Adaptive measures or actions	Criticality after actions
Direct risks	Temperature rise	More warm days & nights							Red
	Temperature rise	Heat waves							Green
	Drought	Increased drought in large areas							Yellow
	Sea level rise	Sea level rise in coastal areas							Green
	Sea level rise	More severe storm impacts in coastal areas							Yellow
	Extreme weather effects	Infrastructure breakdown							Red
	Extreme weather effects	Increased and polarized rain							Green
Indirect risks	Regulation	Price on carbon							Red
	Food production decreases	Socioeconomic consequences							Green
	Lack of drinking water	Socioeconomic consequences							Yellow

**Illustrative draft**