



Sweden Re

SCOR Sweden Re:s Nordic Life Insurance Conference
October 11th 2019

WELCOME

Svein Børre Solvang

Translation Service



Program & list of attendees are now available online

www.beekast.live/nordic19



SCOR's new strategic plan

QUANTUM LEAP

2019/2021

Under the **QUANTUM/LEAP** plan, SCOR will stay true to the fundamental principles that have shaped its success



SCOR's four strategic cornerstones



Controlled risk appetite

- Disciplined underwriting policy
- Prudent asset management
- Permanent risk management aimed at identifying emerging risks and seizing opportunities



High diversification

- Well-balanced business model between Life and P&C reinsurance
- Optimal diversification both by geographies and lines of business
- Financial flexibility leveraging on a large panel of financial market instruments



Robust capital shield

- Efficient protection of the Group's capital
- Use of the whole range of risk transfer tools
 - Traditional retrocession
 - Alternative risk transfer solutions (ILS and collateralized retrocession)
 - Contingent capital



Strong franchise

- Proactive client relationships
- Local teams with recognized expertise in their markets
- Best-in-class services
- Product innovation
- Empowerment of management as decision makers of last resort



SCOR uses new technologies to innovate, expand its offering and increase its efficiency for the benefit of its clients throughout the world

QUANTUMLEAP

2019/2021



Robotics



Artificial
Intelligence
(A.I.)



Big data /
Advanced
analytics



E-business



Multi-cloud

Embrace new technologies to go beyond the efficiency frontier

Provide scalability and agility

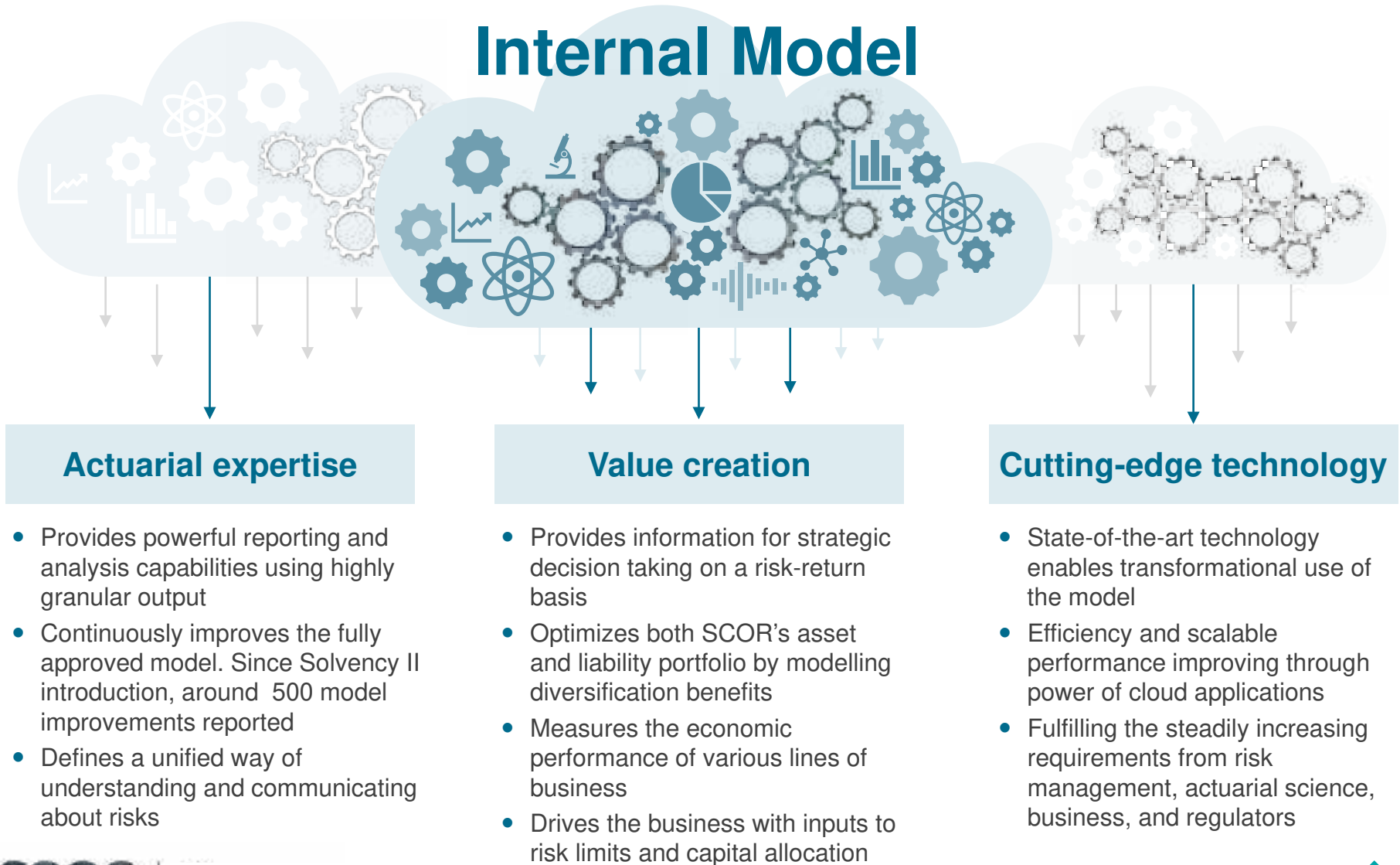
Boost innovation

Leverage new technologies to develop further SCOR's data-driven model



SCOR invests in the Internal Model to further optimize value-based decision making

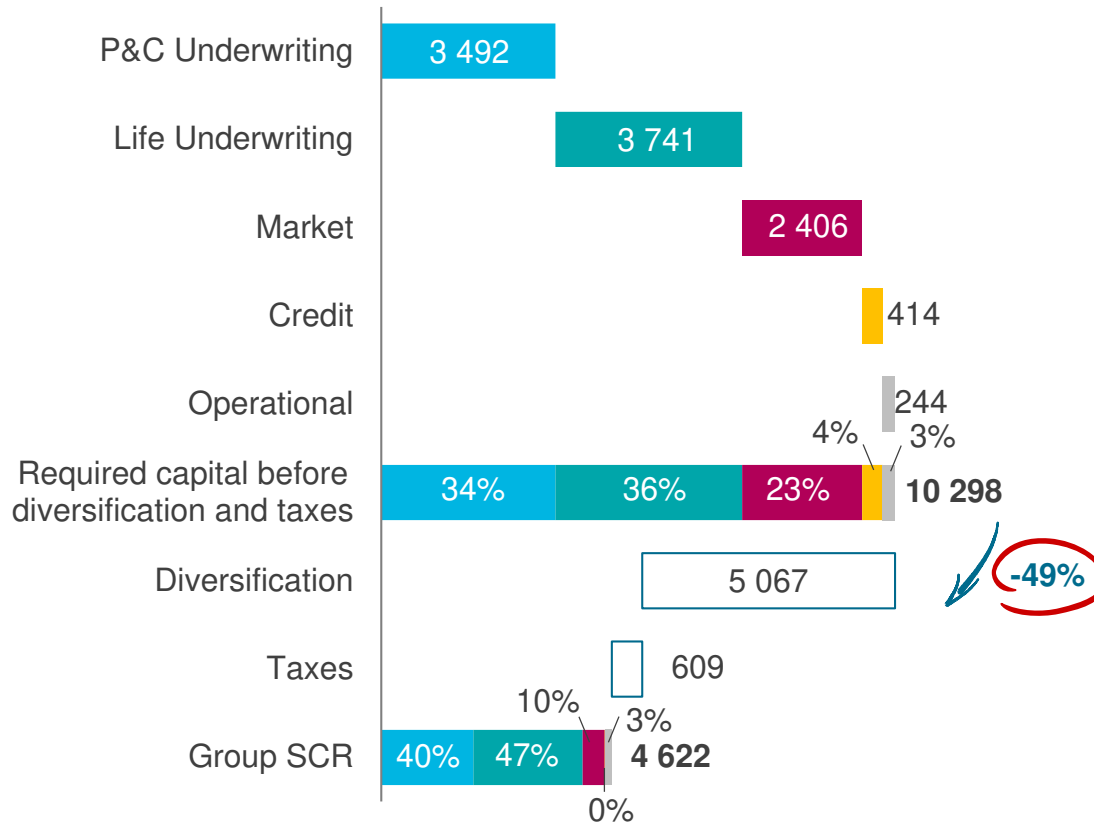
Internal Model



SCOR's industry leading high diversification remains a key strategic cornerstone of **QUANTUM LEAP**

H1 2019 risk capital breakdown by risk category

In EUR millions (rounded)



- SCOR's balanced P&C and Life portfolio and business model strength translate into a very strong diversification benefit
- There is further substantial diversification within the risk categories shown
- SCOR's required capital is mainly driven by underwriting risks
- Market, credit and operational risks make a minor contribution to required capital
- SCOR enjoys a higher diversification benefit than peers (see appendix)



This is our Purpose today



 Extending
Protection & Peace of Mind

 Making Life insurance
Relevant & Desirable

 Improving
Health & Well-Being

 Expanding
Risk Knowledge

 Inspiring
Purpose-Driven Communities

 Keeping our
Financial Promises



We want to transform the relationship with our clients



SCOR Sweden Re Purpose 1914

Table 2.3. Reinsurance with substandard risk –handling medical risks, 1915-1923

Risk group	Total number of risks	Number of accepted risks	Accepted risks as per cent of total
Tuberculosis	3,351	3,156	94.2
Syphilis	157	107	68.2
Heart disease	1,867	1,700	91.1
Arteriosclerosis	82	62	75.6
Kidney disease	495	316	63.8
Diabetes	239	175	73.2
Alcoholism	107	65	60.9
Epilepsy and mental illness	235	199	84.9
Gastric and intestinal disorders	333	291	87.4
Other disease	930	775	83.3
Total	7,796	6,846	87.8

Source: Bergholm (1925)



Medical Underwriting

Leading provider of medical underwriting services in the Nordic market

The logo for PRIO is a white circle with a teal outline, containing the word "PRIO" in a bold, sans-serif font. A teal line extends from the top-left of the circle.

PRIO

Web based juvenile medical manual

The logo for solem is a white circle with a teal outline, containing the word "solem" in a lowercase, sans-serif font. A teal line extends from the top-left of the circle.

solem

Web based medical manual

The logo for Exigo is a white circle with a teal outline, containing the word "Exigo" in a bold, sans-serif font. A teal line extends from the top-left of the circle.

Exigo

Web based medical manual: Sjuk- och Olycksfall

The logo for DIGIHEALTH is a white circle with a teal outline, containing the word "DIGIHEALTH" in a bold, sans-serif font. A teal line extends from the top-left of the circle.

DIGIHEALTH

Electronic Medical Underwriting



Startsida

Andningsorganiska sjukdomar
Blodsjukdomar
Drogberoende
Endokrina sjukdomar
Hudsjukdomar
Infektionssjukdomar
Kardiovaskulära sjukdomar
Led- och muskelbesvär
Mag- och tarmsjukdomar
Metabola sjukdomar - tillstånd
Neurologiska sjukdomar
Ögon- och öronsjukdomar
Psykiiska sjukdomar
Systemiska sjukdomar
Tandvård
Underlivsjukdomar
Umslagssjukdomar

Välkommen till Exigo

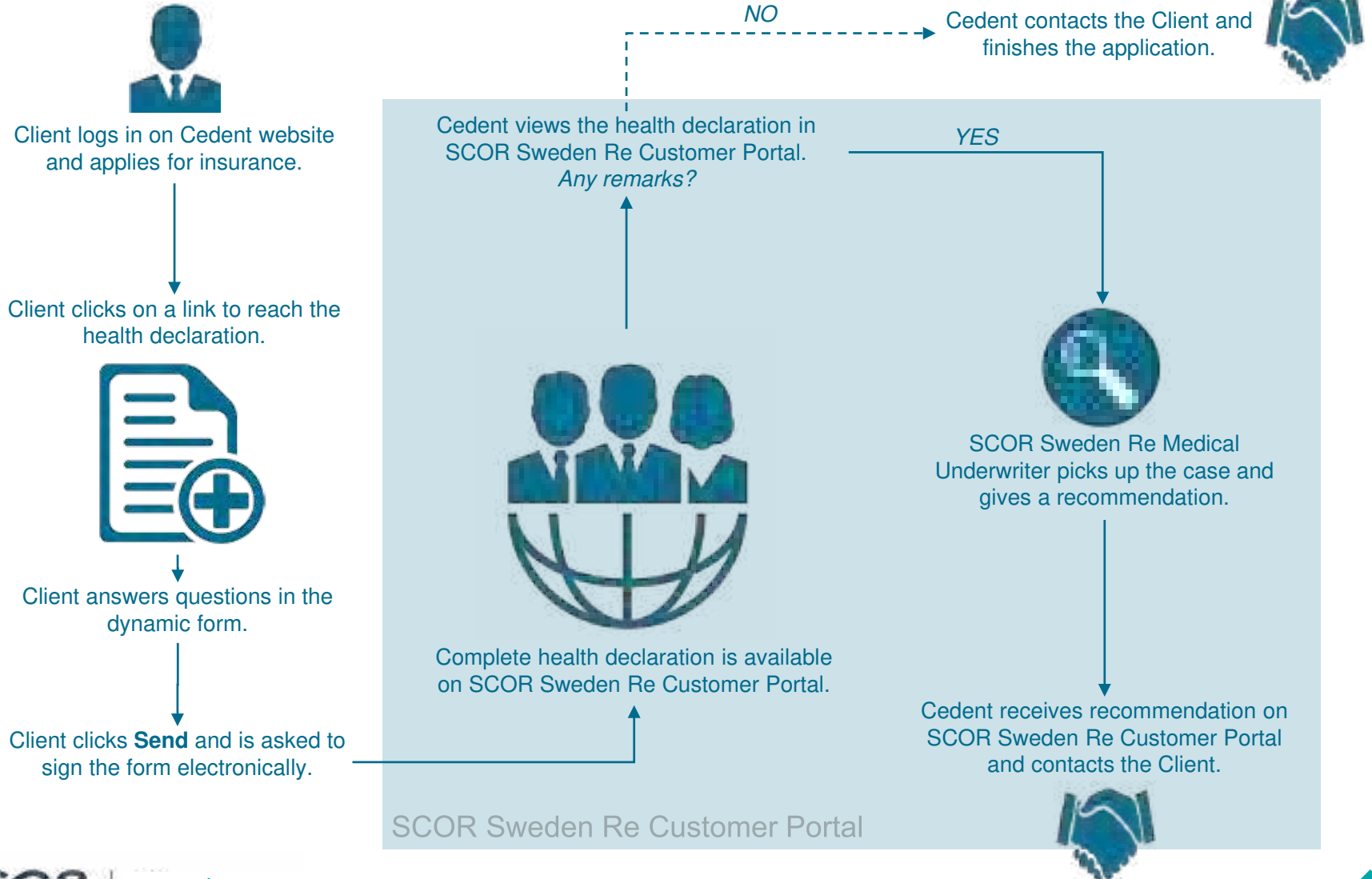
SCOR Sweden Re har sedan start varit ett kompetenscentrum för medicinsk riskbedömning. Exigo är det verktyg vi erbjuder för försäkringsmedicinska aktörer avseende bedömning av Sjuk- och olycksfallsförsäkring för vuxna, anpassat för den nordiska marknaden. Vi på SCOR Sweden Re arbetar ständigt med att vidareutveckla och uppdatera materialet så att Exigo ska underlätta den dagliga hanteringen av försäkringsgäranden vid såväl riskbedömning som skada.

Vi hoppas att du ska tycka om att använda Exigo!



SWEDEN RE FILIAL TILL SCOR SE







Rehab ex Gratia

New partnership with a rehabilitation provider

Helping policyholders to get back to work

Win-Win-Win-Win-Win-Win-Chain

Offered exclusively to our clients

SCOR Sweden Re Service / Toolkit



SCOR Sweden Re:s Nordic Life Insurance Conference
October 11th 2019

WELCOME

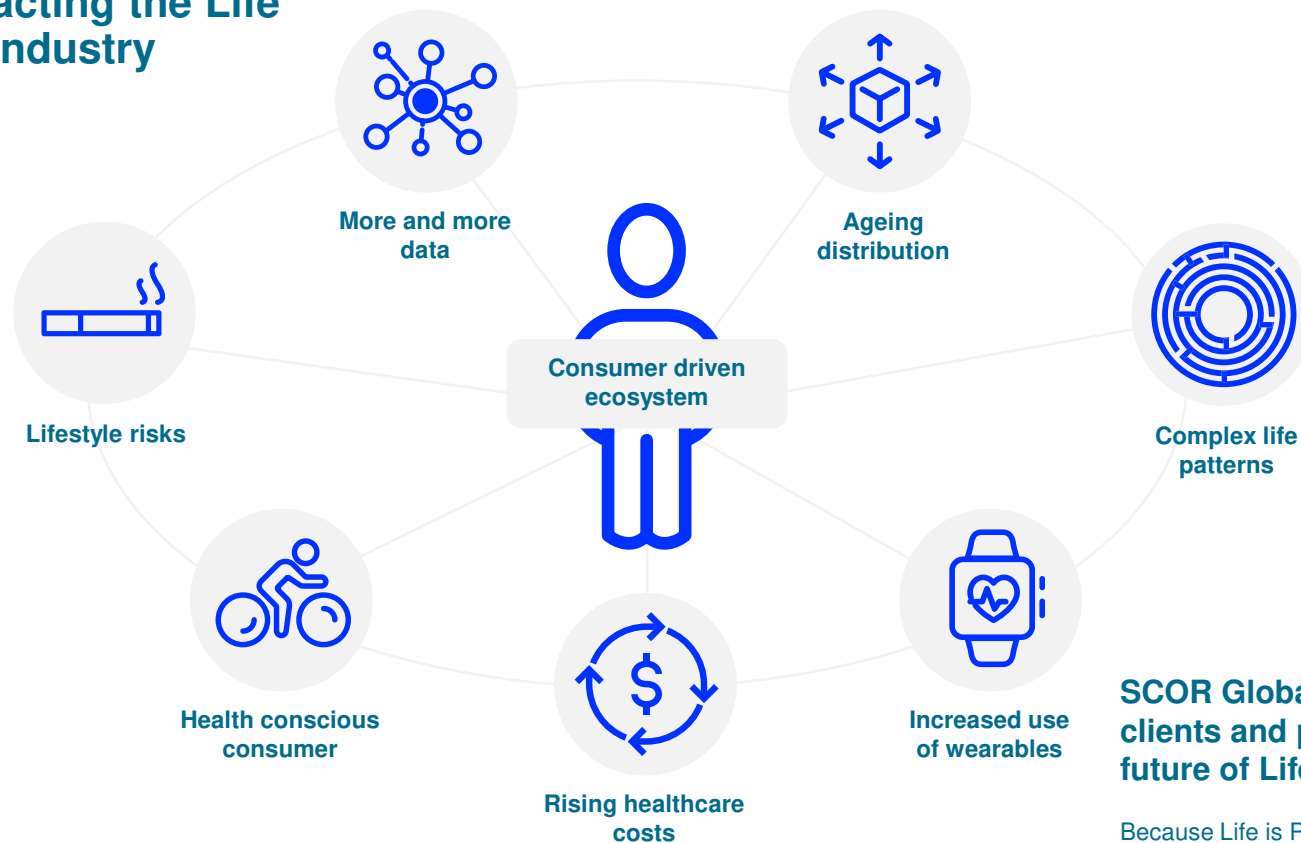
Svein Børre Solvang



Biological Age Model (BAM) – Building the Future of Life Insurance

Sven Ebert – Senior Market Manager Life & Innovation

BAM – A response to multiple forces impacting the Life Insurance Industry



SCOR Global Life – working with clients and partners to build the future of Life Insurance

Because Life is Precious, We Value Life

Looking at the state of life today, in general things are good

We Are Wealthier

Share of global population living in extreme poverty was cut by¹⁾

50%

in the last 20 years

We Are Happier

Over the last 30 years, level of happiness has increased in²⁾

~70%

of the countries where data is available

We Are Living Longer

Worldwide, life expectancy is estimated to increase by more than³⁾

1 year

between 2016 and 2021



Sources:

1. H. Rosling, *Factfulness*, 2018
2. *The World Value Survey Study*, 2016
3. *2018 Global Health Care Outlook*, Deloitte

But we do see challenges ...

Obesity is becoming rampant¹⁾



Poor diet



Sedentary lifestyles



Lack of education

x3

increase of worldwide **obese population** since 1975

50%

of Europeans are **overweight**

20%

of Europeans are **obese**

1 in 3

11-year-old European **children** are **overweight** or **obese**

Sleep disorders are increasing²⁾

35%

of Americans **sleep less than 7 hours** a day

1500

yearly deaths caused by **drowsy driving** in the US alone

Sleep deprivation plays a **significant role** in



Depression

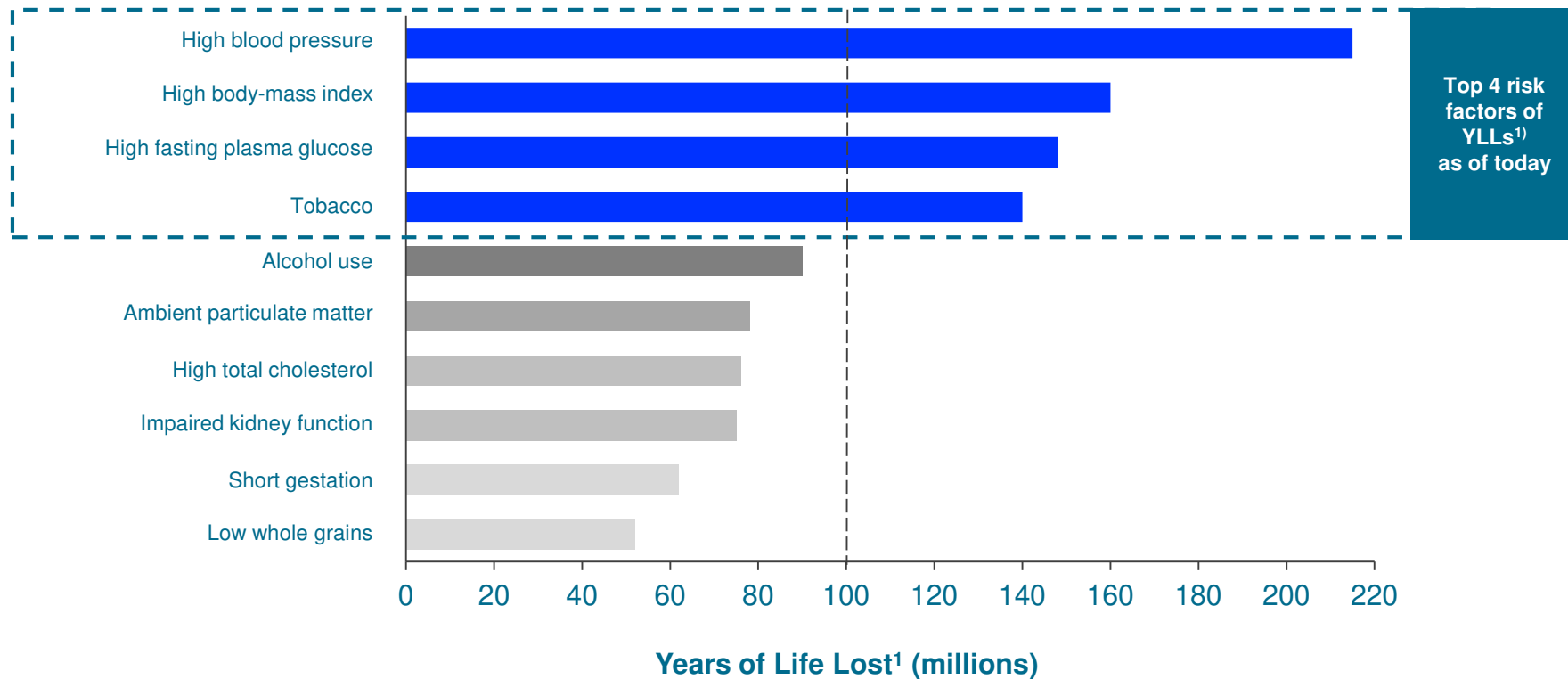


Diabetes



Cardiovascular
diseases

... our lifestyles are killing us



1) The years of life lost correspond to the remaining life expectancy lost due to a premature death

Source: K.J.Foreman, N.Marquez, A.Dolgert et al. "Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016", Lancet, October 2018



People become more interested in their own health



+33%

increase in the number of **gym members** in the US since 2008¹⁾



75%

of the adult population is considering **changing its diet**²⁾



Only
5.1%

of people said they did not want to **improve their lifestyle**³⁾



Customers are
2x

as likely to **share wearable data** as financial data⁴⁾

1) Source: IHSA Global Report, 2018

2) Source: Nielsen Global Health and Wellness 2015

3) Answers to the question "Which of the following aspects of your lifestyle would you most like to improve?" (better sleep, quit smoking, healthier diet, lower stress levels, more exercise or none). Source: ReMark

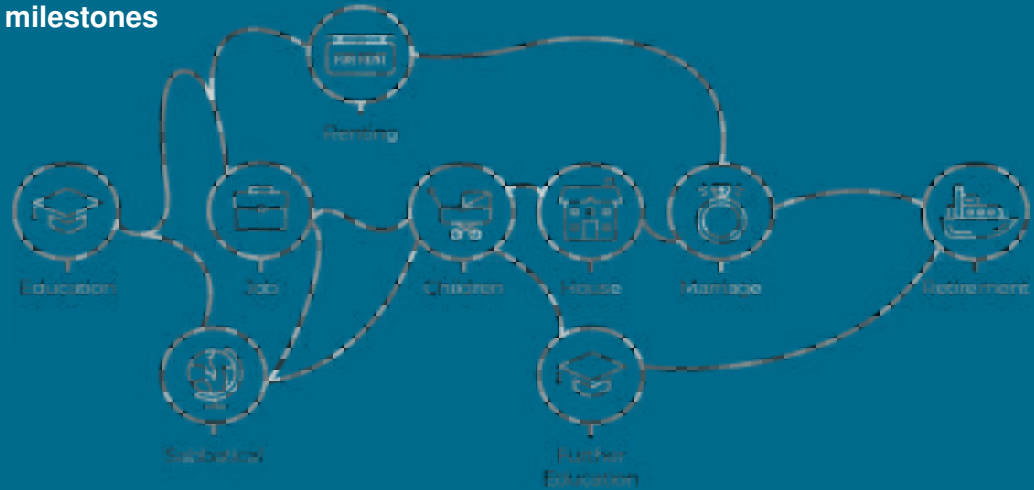
4) Source: ReMark Global Consumer Survey 2017 – *Life is a Rollercoaster*

... and our lives become less linear, more complex and interconnected

Pre-millennial milestones

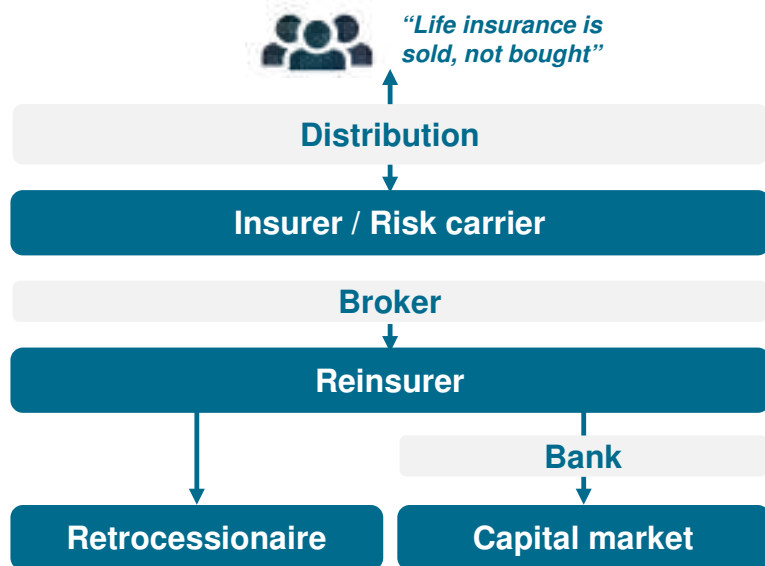


Millennial milestones

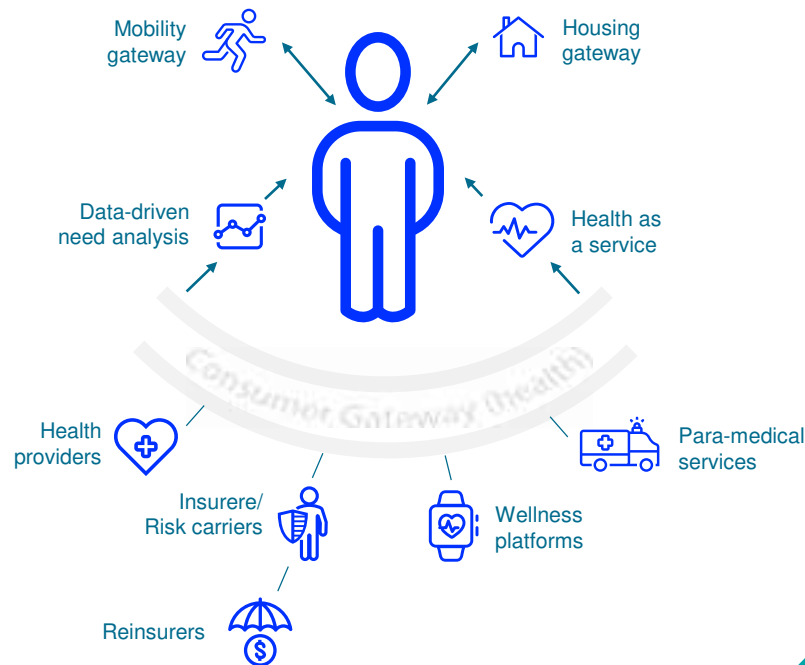


The Life insurance industry moves towards a new model

Moving from **traditional risk-driven** value chains...

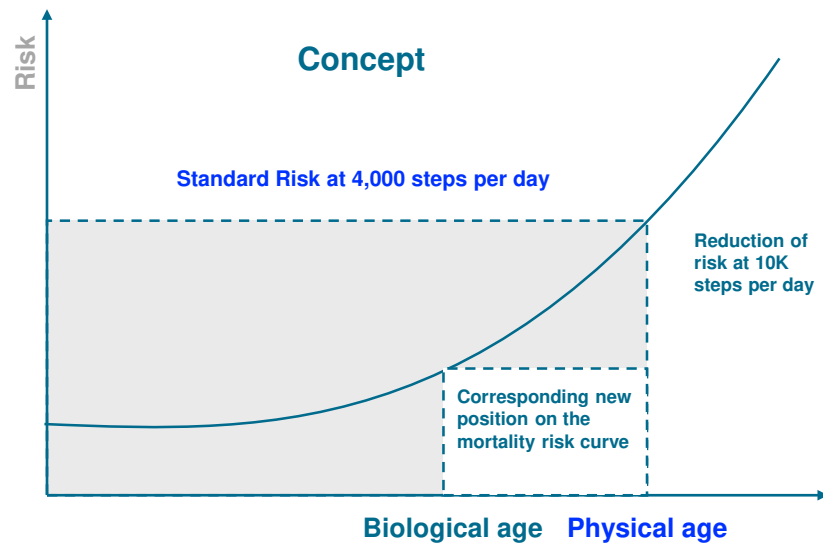


... to **ecosystems** centered on **consumer needs**



BAM is an offer to live healthier...

SCOR developed the **Biological Age Model (BAM)** based on a **personal health data set of 18,000 individuals**, with a **20-year follow-up** period cross checked with a database of **6,000 individuals** and a **13 years** follow-up



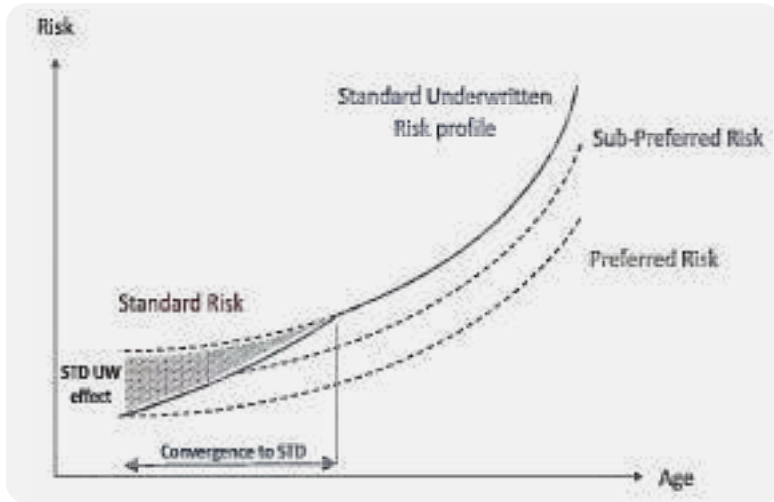
... and a first step towards dynamic underwriting

Standard underwriting effect

Discount at onset,
vanishing over time



Converge to Standard risk profile

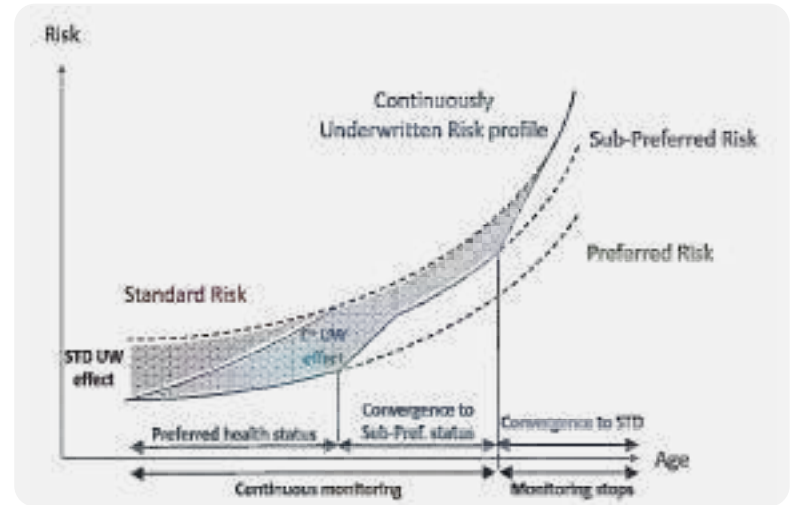


Continuous underwriting effect

Discount at onset, maintained over time,
until condition worsen or monitoring stops



Price never exceeds standard terms



BAM is a simple and tailored approach to continuously engage policyholders and promote wellness

From...



Tedious & invasive underwriting

Biometric screening is time consuming and costly



One size fits all

Assumed all insureds within a group will live their lives in the same fashion



Absence of engagement

Policy application and claims are the only interactions with policyholders

To...



Simple & accurate underwriting

Accurate risk prediction.
No medical examinations



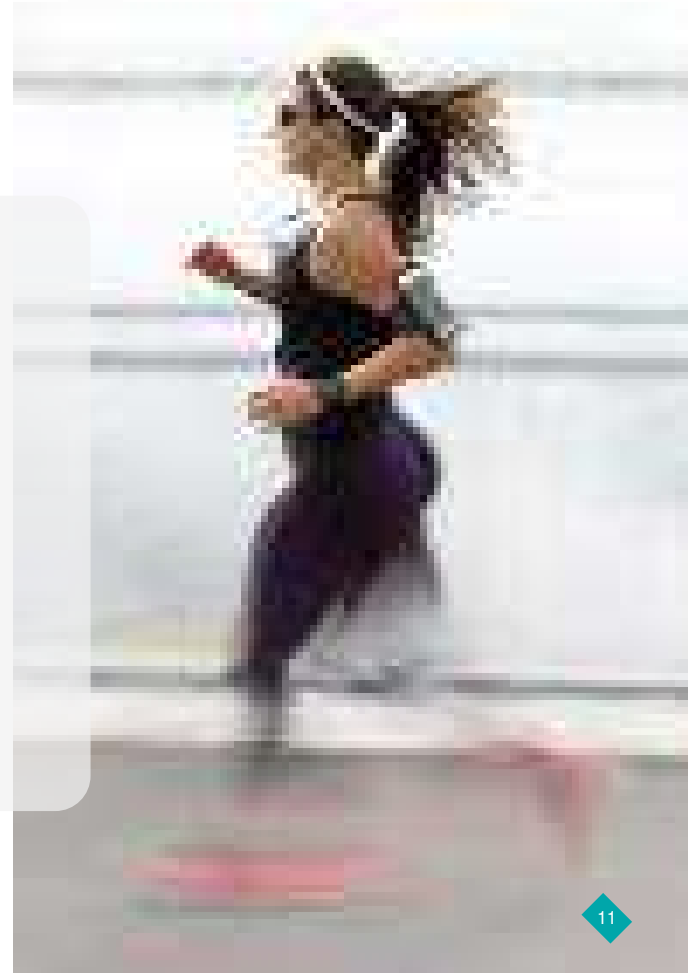
Tailored approach

Continuous risk assessment
and potential premium discounts



Continuous engagement & wellness promotion

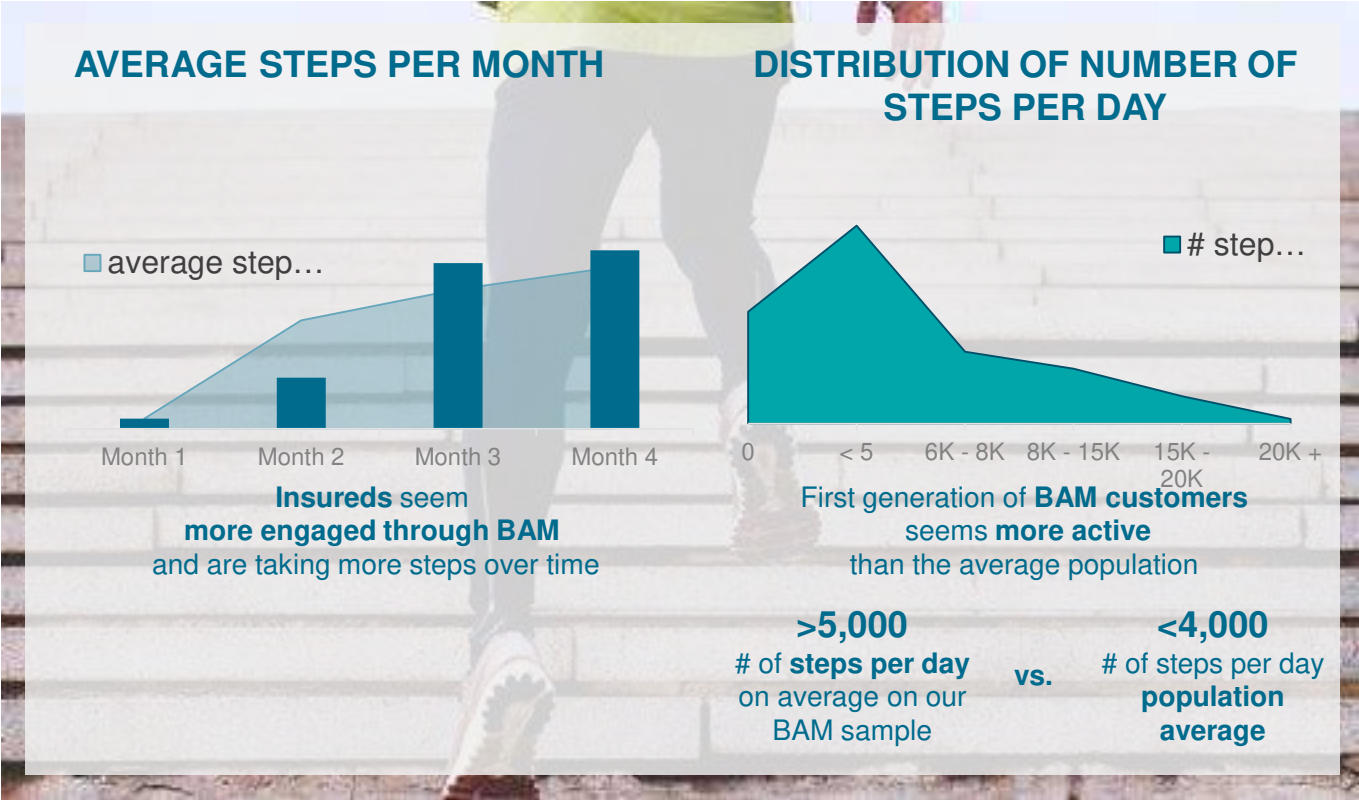
Engages and motivates insureds to live a healthier life



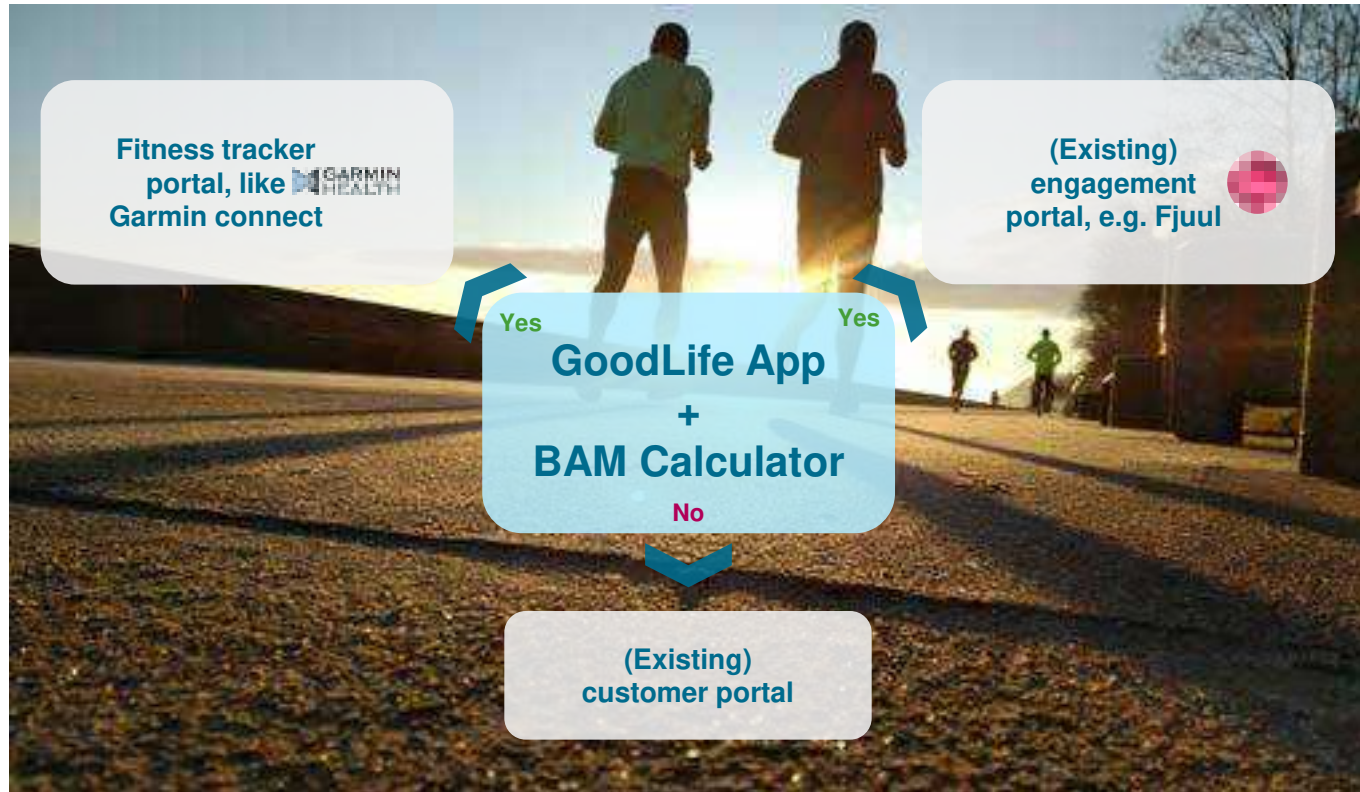
SCOR
The Art & Science of Risk

Appendix

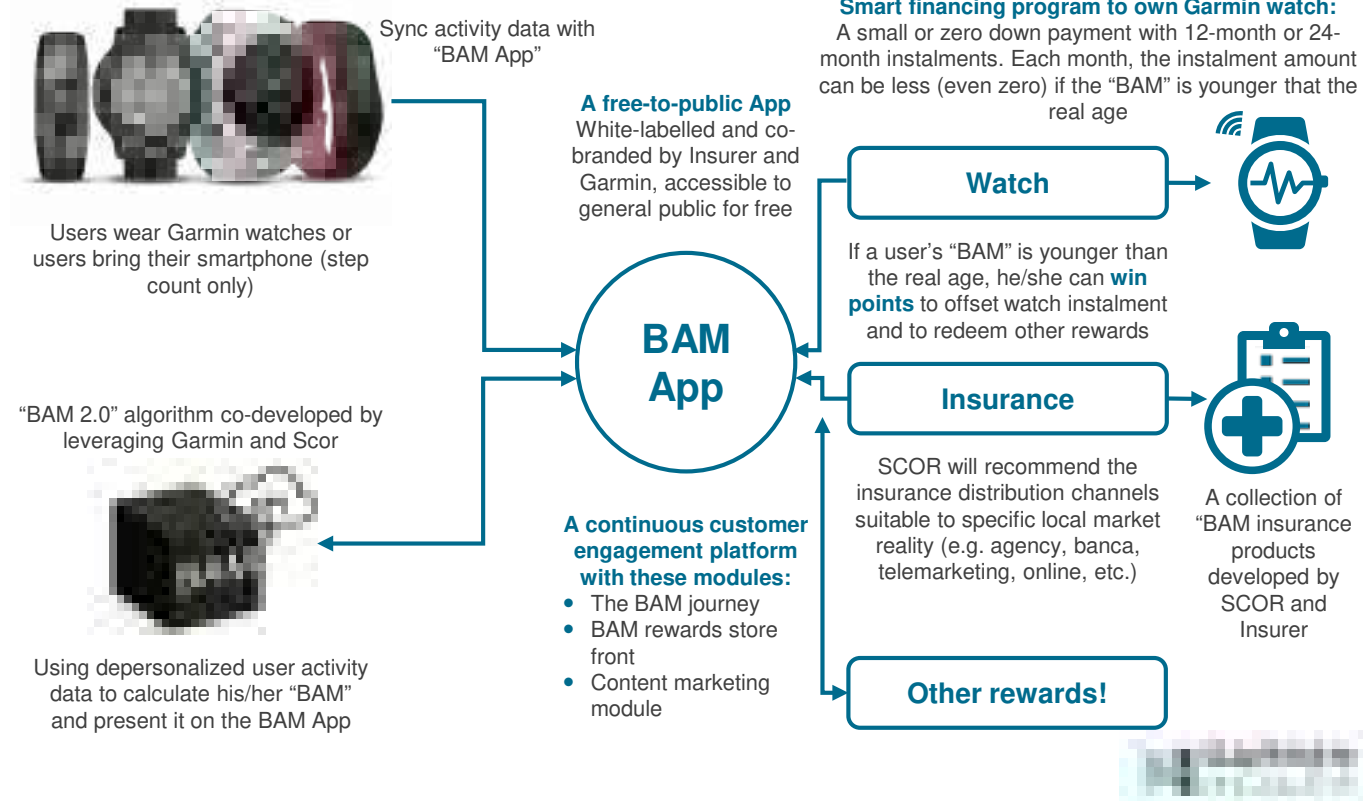
Data shows the engagement effect of BAM



Core GoodLife Application + BAM calculator and integration options



Enhance BAM by including insights and fitness trackers from our partner Garmin!



Enhance BAM to full engagement platform – optimize your performance and biological age

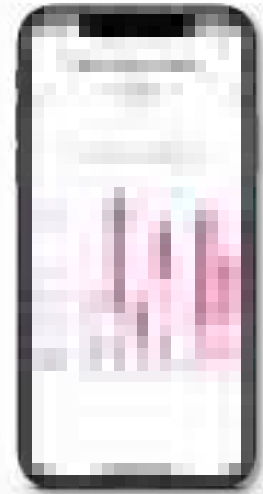
Personalized coaching



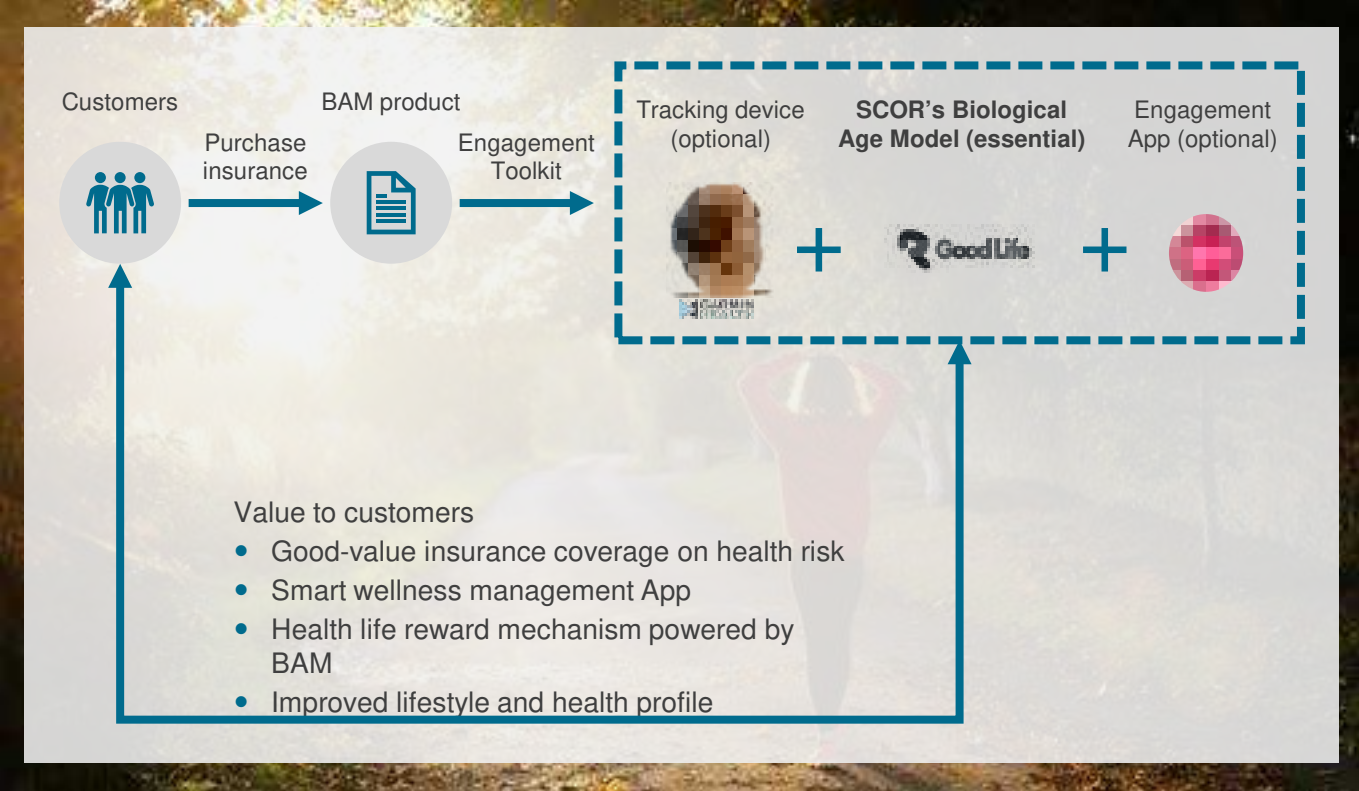
Performance guidance



Physical impact scoring



The final product



A SCOR in-house predictive study

BIOMETRICAL AND PHYSICAL ACTIVITY MEASURES

For each individual, we have biometrical and physical activity measures at the start of study:

- **Main biometrical measures:**
 - Body Mass Index,
 - Blood Pressure
 - Cholesterol
- **Physical activity measures (wearables data) over 7 day-period**
 - # of daily steps
 - minutes of moderate/vigorous activity
- **Additional information on each individual:**
 - Gender,
 - Age
 - Tobacco

Survival curves by daily minutes of activity

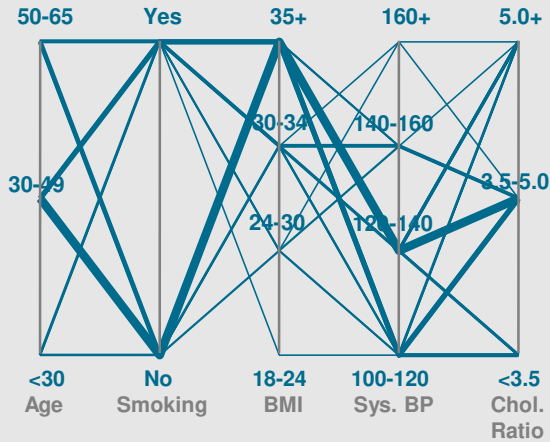


Survival curves by daily number of steps

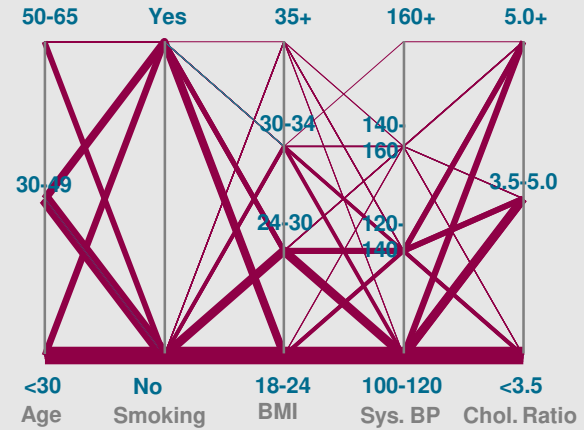


The data shows the relevance of steps as a predictor (1/3)

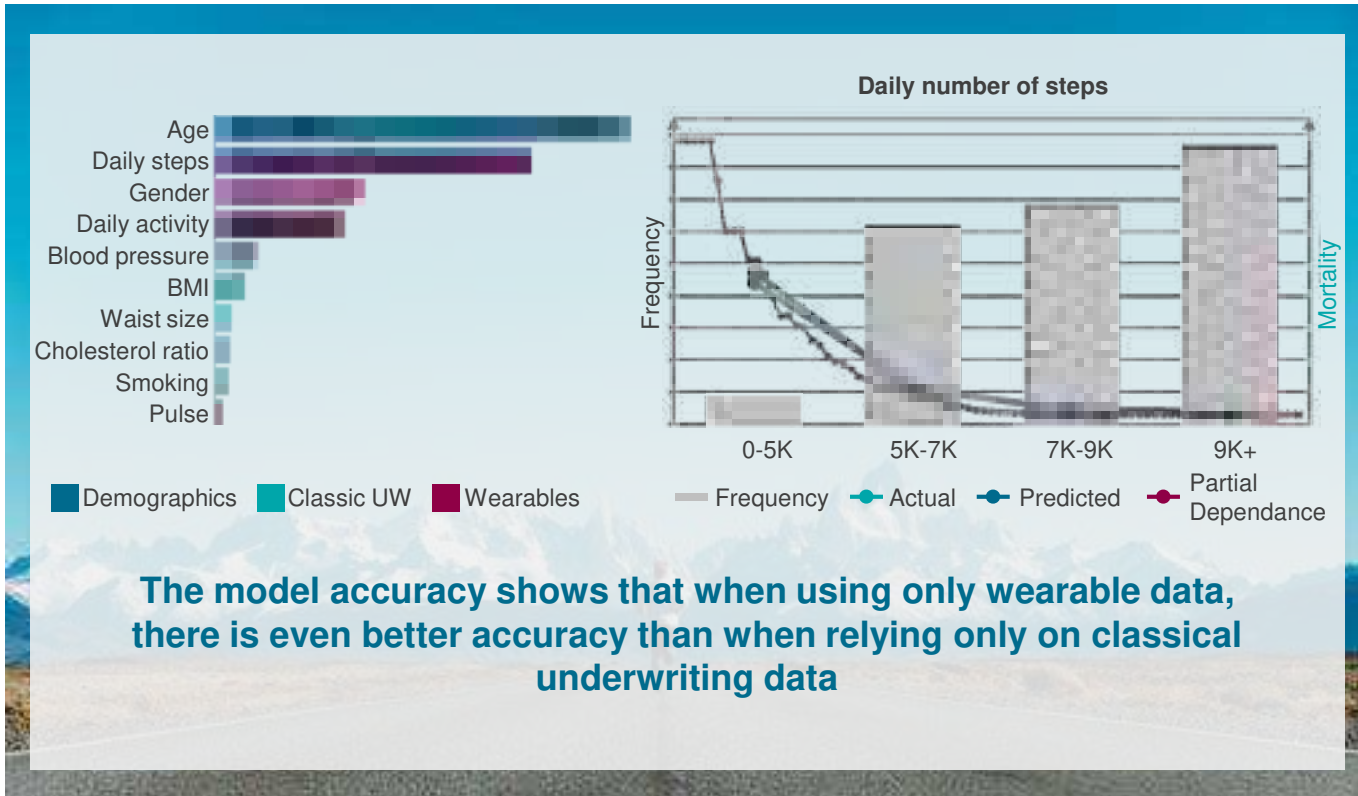
0 – 5.000 DAILY STEPS



> 9.000 DAILY STEPS



The data shows the relevance of steps as a predictor (2/3)



The data shows the relevance of steps as a predictor (3/3)

Model	Variables considered and comments	C-Index
M1	All variables available in the dataset. This model is the baseline – the best prediction of risk using all available data.	89.8%
M2	<i>Age, gender, smoking status, BMI, blood pressure and cholesterol.</i> This model reflects traditional underwriting .	85.0%
M3	<i>Wearable data, in addition to age and gender.</i> This model reflects underwriting based on wearable data .	89.2%
M4	<i>BMI, in addition to the variables considered in M3.</i> This model reflects underwriting based on wearable data + BMI .	89.3%
M5	<i>Smoking status, in addition to the variables considered in M4.</i> This model reflects underwriting based on wearable data and BMI + smoking status .	89.6%

EURO



försäkring + hälsa

Hållbara Medarbetare - det finaste ett företag kan ha

Thomas Petersson

VD

11 oktober, 2019



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Vi vill bidra till en *trygg och frisk* värld

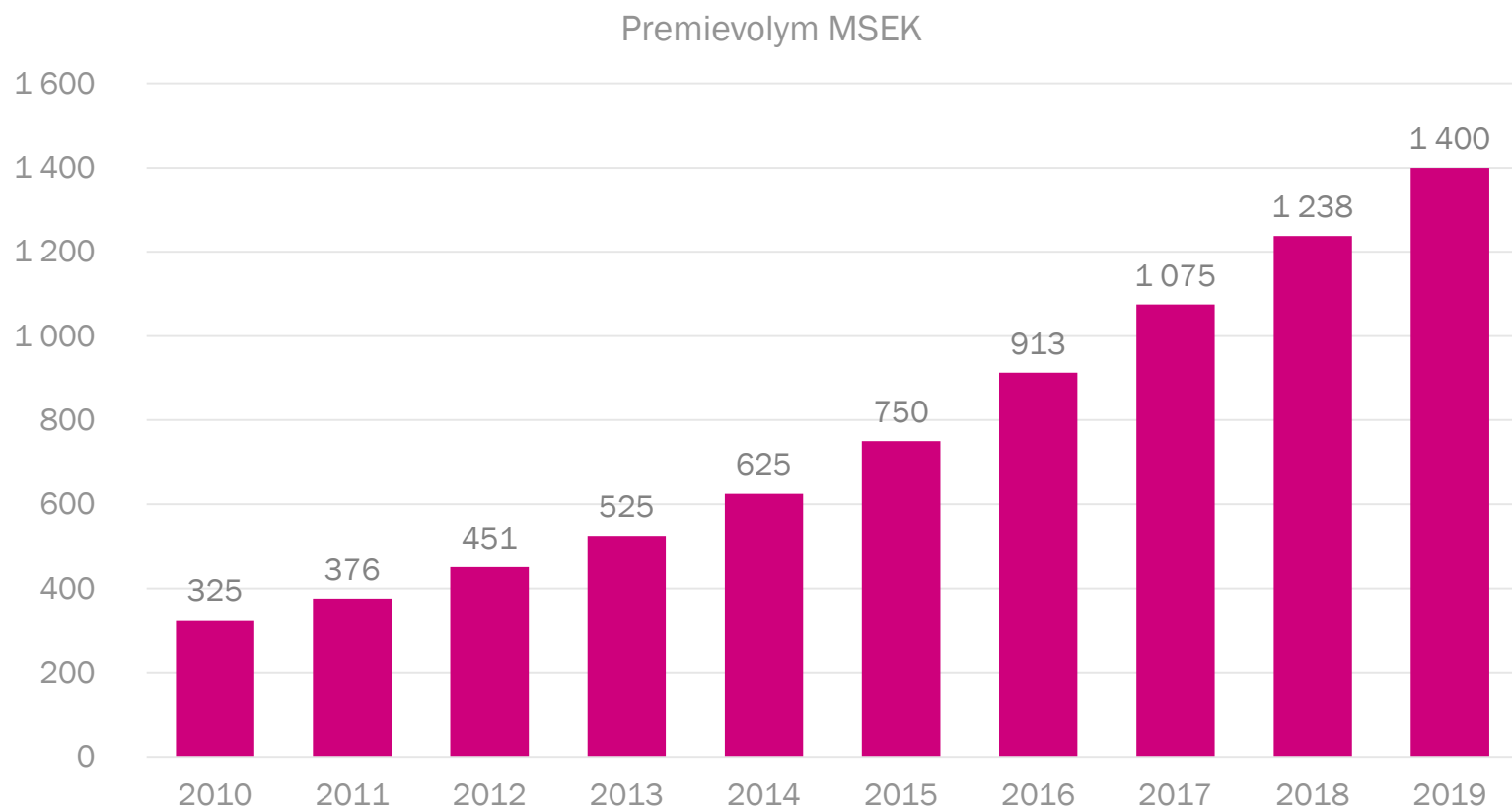
Trygghet och hälsa hör ihop. Vi försäkrar människors liv, lön och välmående. Bra försäkringar och friska medarbetare skapar framgångsrika företag.

Räkna med Euro Accident!

Försäkring *plus* hälsa skapar Hållbara Medarbetare

OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

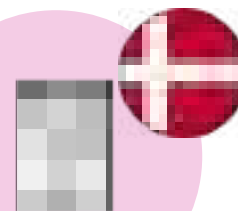
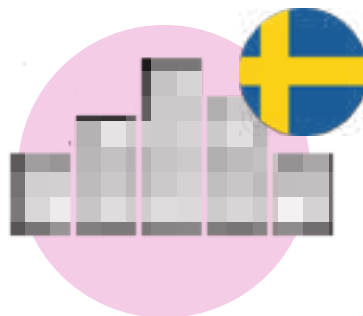
En snabb och stark försäljningsutveckling



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Euro Accident idag

> 1,4
miljarder i
premier



EURO
ACCIDENT
försäkring + hälsa

>300 000
försäkrade

240 +
medarbetare

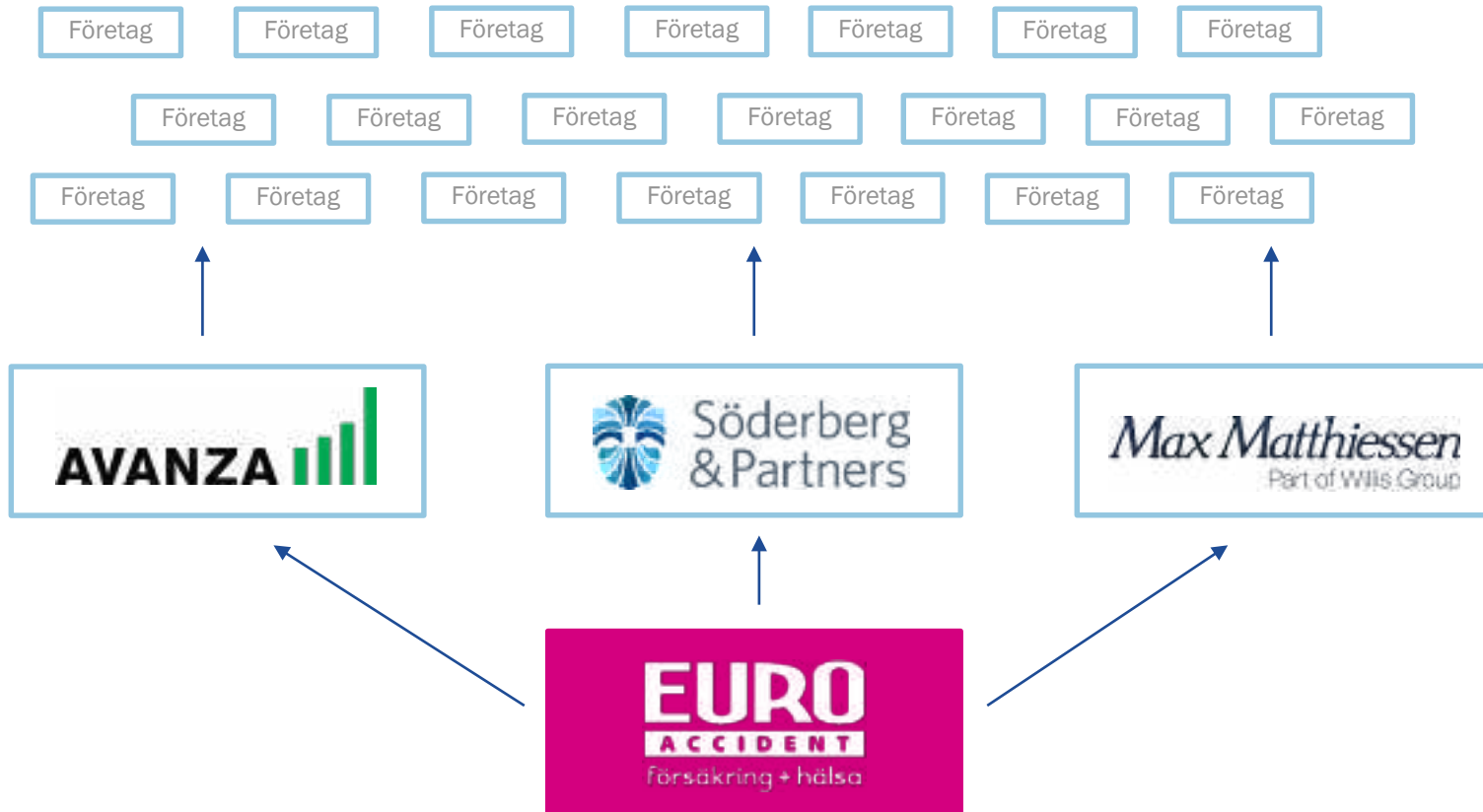
>25 000
företag

OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

EURO
ACCIDENT
försäkring + hälsa

EURO ACCIDENT – vår affärsmodell

vi hjälper våra kunder att skapa bra erbjudanden till sina kunder



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Tankemodell

Agera innan det händer



Försäkring + hälsa

Förebyggande tjänster för att förhindra sjukskrivning

Tjänster för sjukskrivning- & rehabprocess



Hälsa- och Arbetsmiljöscreening är en webbaserad kartläggning av medarbetarnas hälsa och psykosociala arbetsmiljö.

Arbetsgivaren beställer via:
halsa@euroaccident.se

Sjuk & Frisk är ett verktyg för rapportering av sjukfrånvaro med professionell sjukvårdsrådgivning. Via mail påminns chefen om t.ex. sjukintyg från dag 7 och anmälan till rehabförsäkringen före dag 20.

Ring:
077-55 52 250

Samtalsstöd innebär telefonrådgivning eller besök avseende psykosociala, ekonomiska, juridiska eller livsstilsrelaterade frågor för både medarbetare och chef. 3-5 samtal/ärende ingår.

Ring:
0771-10 50 15

Rehabförsäkring innebär att en medarbetare som är sjukskriven eller riskerar att bli, får hjälp av en rehabledare. Denne stödjer chef samt medarbetaren och ser till att rätt insatser ges för återgång i arbete.

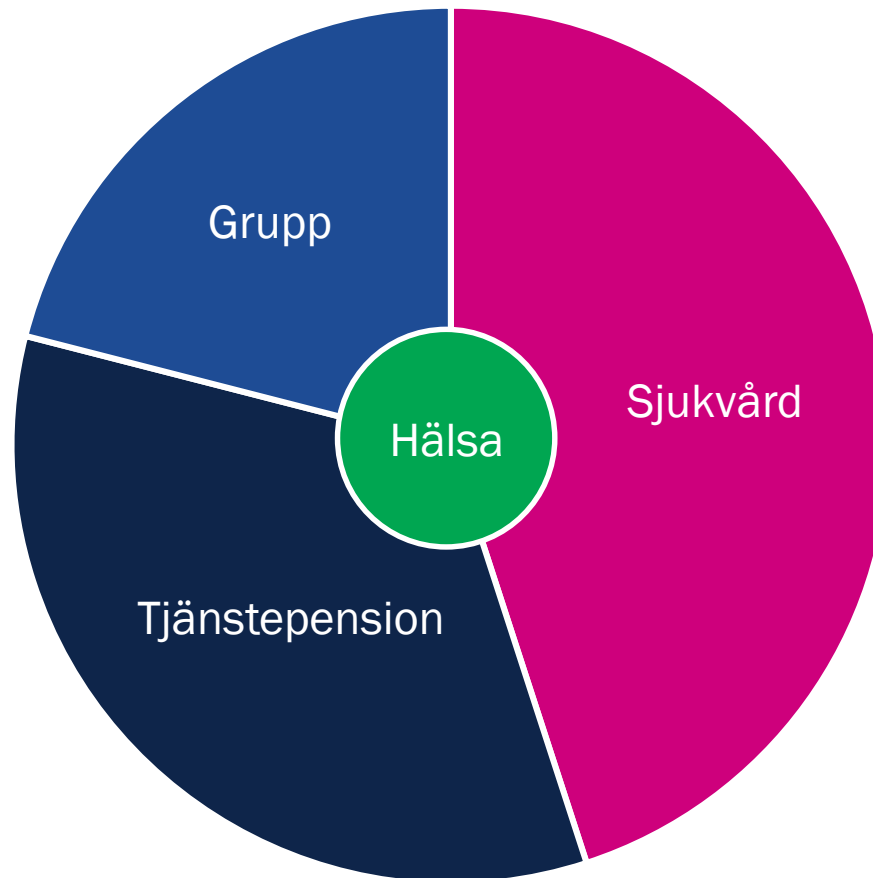
Skadeanmälan: info@euroaccident.se Ring:
0771-10 50 10

Sjukvårdsförsäkring ger snabb tillgång till privat specialistvård inom 7 arbetsdagar och operation inom 14 arbetsdagar.

Sjukförsäkringen innebär att medarbetaren ges ekonomiska trygghet vid längre sjukfrånvaro. Ingen utbrändhetsklausul.

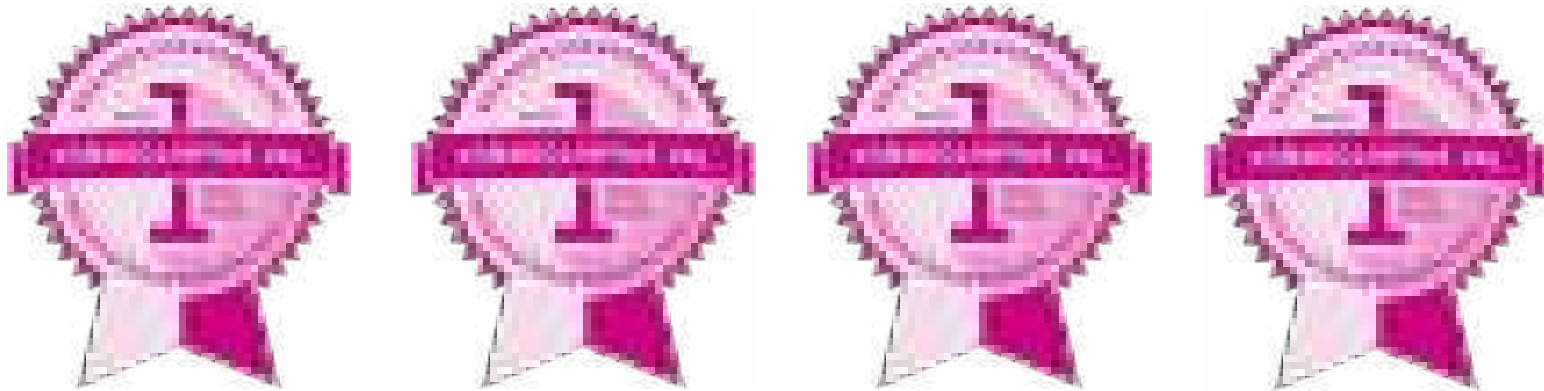
Skadeanmälan:
info@euroaccident.se

Våra produktområden



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Vad tycker förmedlarna?

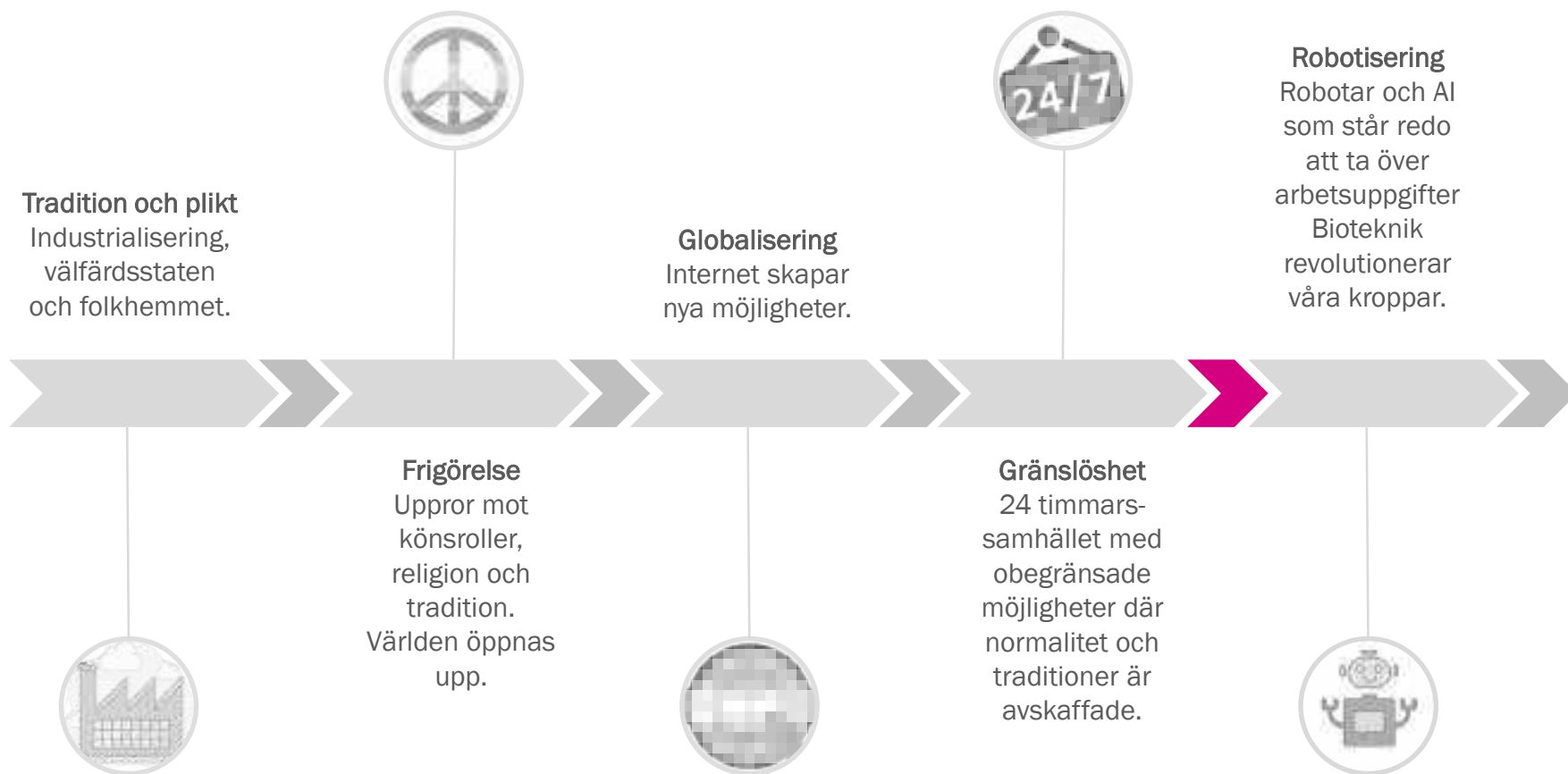


Högsta helhetsbetyg och mest attraktiva risk-, privatvårds- och grupp försäkring

*Enligt origo Groups:s undersökning 2019

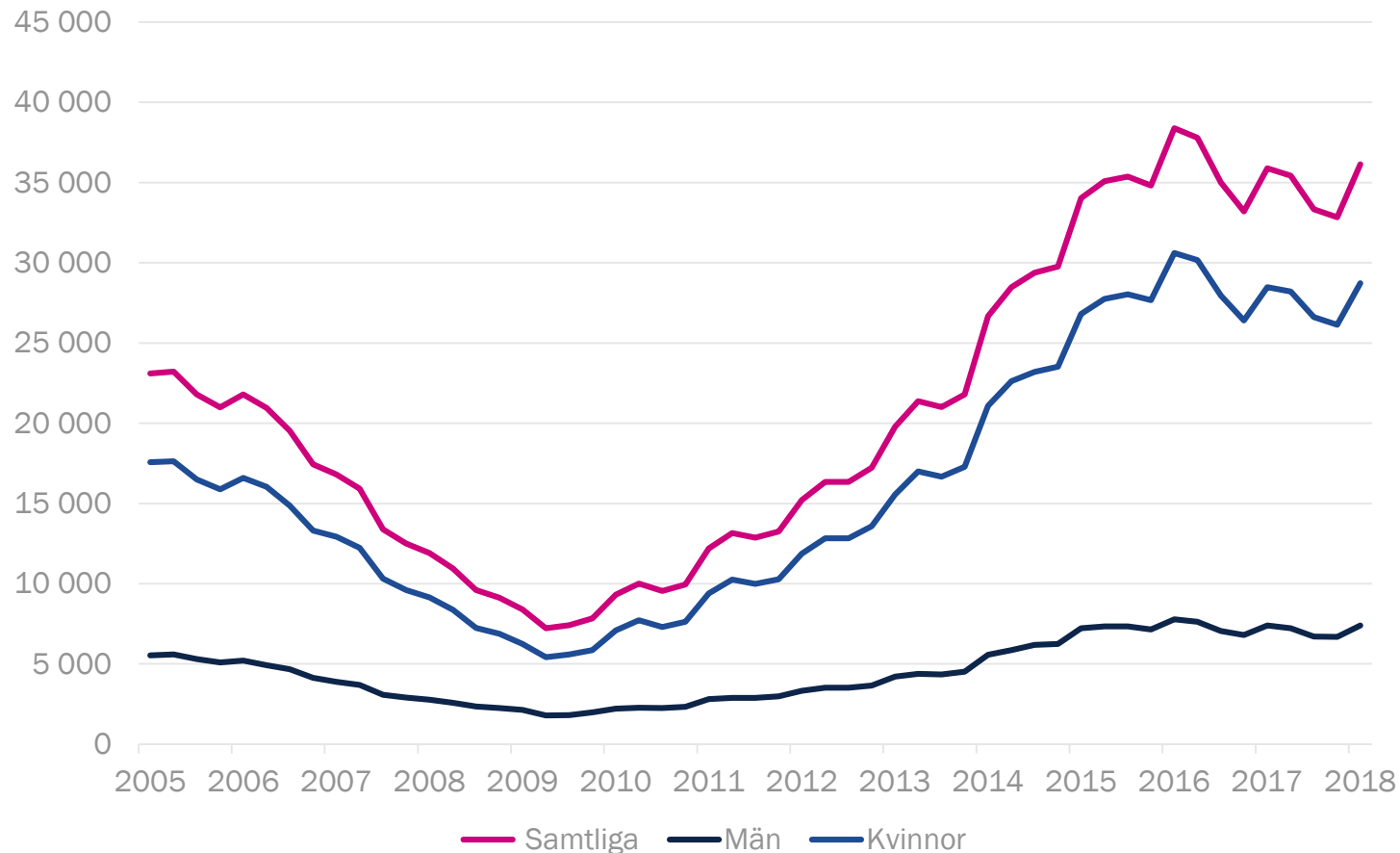
OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Vi är mitt i ett paradigmskifte



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Vi måste hitta nya förhållningssätt



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Vi startade projektet "Åter i arbete"

100	0 %
55	100 %
14	> 25 %
31	0 %
80.000.000	

Case

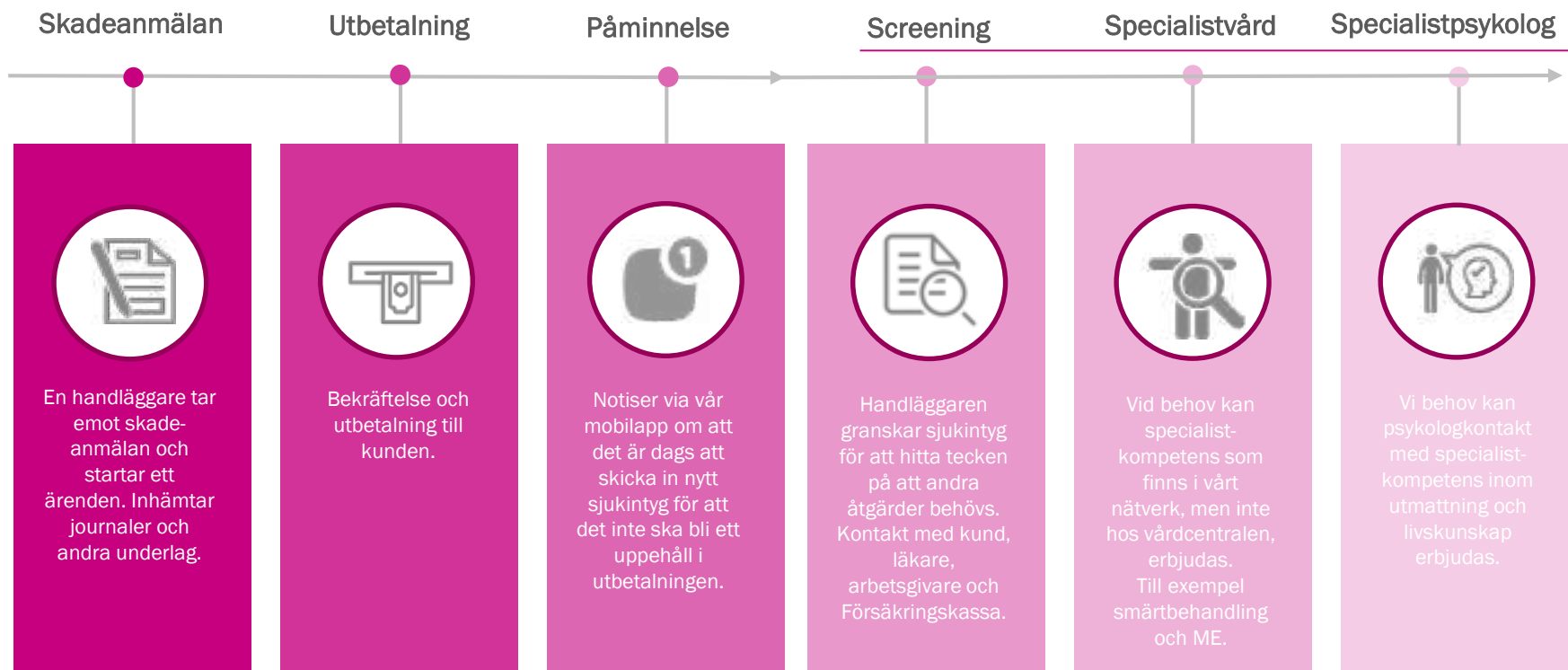
Åter i *Arbete*



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

När någon är långtidssjuk gör vi vad vi kan för att bryta sjukskrivningen

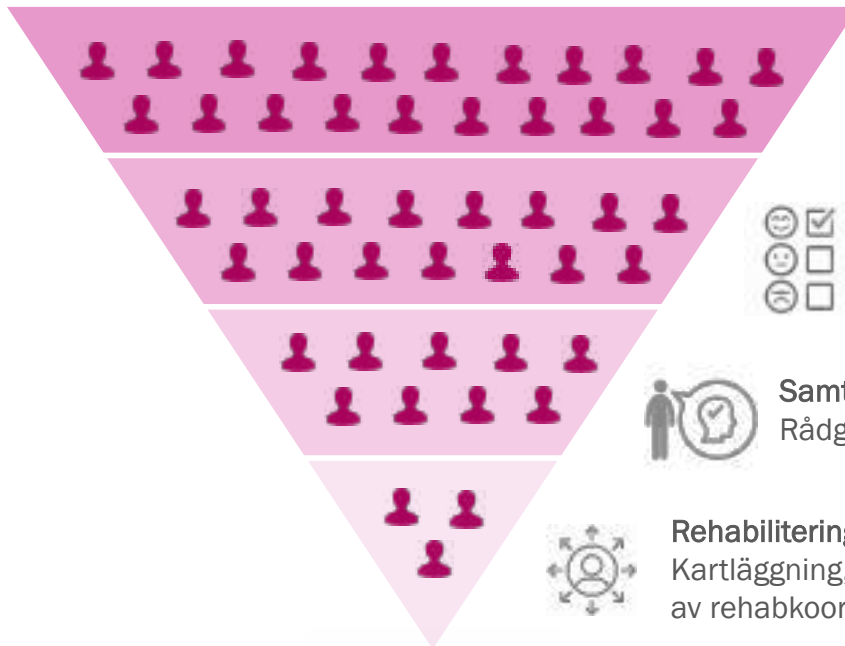
Allt det här ingår i *PlanSjuk!*



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Vi försöker också förebygga långa sjukskrivningar

Allt det här ingår i *PlanSjuk!*



Kännedom

Uppringning med förinspelad information om det som ingår.



Hälsohjälpen

Onlinescreening av fysiskt och psykiskt välmående med erbjudanden för åtgärd.



Samtalsstöd

Rådgivning med psykolog.



Rehabilitering

Kartläggning, plan, åtgärder och stöd av rehabkoordinator.



8 av 10 fastnar inte i en
långtidssjukskrivning

Case

Rehabiliteringsförsäkring

ComeBack



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Nycklar för hållbara medarbetare



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE



OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

Tillsammans skapar vi
Hållbara Medarbetare!

OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

TACK!

För att ni tog er tid att lyssna

OMTANKE + HANDLINGSKRAFT + NYTÄNKANDE

EURO
ACCIDENT
försäkring + hälsa

Modelling of expenses in Solvency II

Maryna Lundgren

maryna.lundgren@fi.se

What did I study?

- I. Solvency II requirements to the modelling of expenses in calculation of technical provisions
- II. The effects of choosing different expense models and assumptions on the resulting value of technical provisions and excess of assets over liabilities

Expense models considered

- **M1:** Constant expenses per policy
 - **M2:** Constant expenses per policy increased with inflation
 - **M3:** Company's yearly fixed costs and constant expenses per policy increased with inflation
 - **M4:** Constant proportion to a best estimate
 - **M5:** Constant proportion to assets under management
 - **M6:** A discount rate loading
- ✓ Different starting values of expenses
 - ✓ Different surrender assumptions parameters

What are my conclusions?

- I. Some of Solvency II principles for expense modelling can be
 - in conflict with each other
 - open for different interpretations
- II. Modelling expenses in Solvency II
 - Some of the models are easier to deal with than the others
 - Some of the models are more optimistic than the others

Solvency II requirements to the expense-modelling

Solvency II Regulation

L1 *SII-Directive*

Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

L2 *SII-Delegated Regulation*

Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), Official Journal of the European Union, L 12, 17 January 2015.

L3 *TP-Guidelines*

Guidelines on the valuation of technical provisions, EIOPA-BoS-14/166 EN

Expense-modelling principles

P1(L1 art.76):
Portfolio-
specific
assumptions
should be used

P10(L3 #30):
Allocation of
expenses should be in
relation with expense
drivers and relevant
expense

P2(L1 art.77):
Realistic
assumptions
should be used

P5(L2 art.22):
Undertaking-
specific
assumptions
should be used

P7(L2 art.31):
Assumption that the
undertaking will write
new business in the
future

P11(L3 #31):
Overhead expenses
should be allocated to
existing and future
business based a
consistent basis over
time

P3 (L1 art.77, L2 art.31,
L3 #26): All types of
expenses should be
modelled:

- a) admin. expenses,
- b) invest. manag. exp.,
- c) claims manag. exp.,
- d) acquisition expenses,
- e) overhead expenses,
- f) reinsurance expenses,
- g) expenses for hedging

P8(L3 #29):
Expenses should be
taken into account
based on the terms
of the contract

P6(L2 art.30): A cash
flow projection shall
take into account all
uncertainties in the
cash flows

P13(L3 #33): Future
expenses arising on
existing portfolio
should be taken into
account

P4(L1 art.78):
Expenses should
be modelled
with inflation

P14(L3 #34): Models
should take into
account the type of
expenses and
correlation between
different types of
expenses

P12(L3 #32): The
timing of expense
cash flows should be
consistent with the
timing of other cash
in- and out-flows

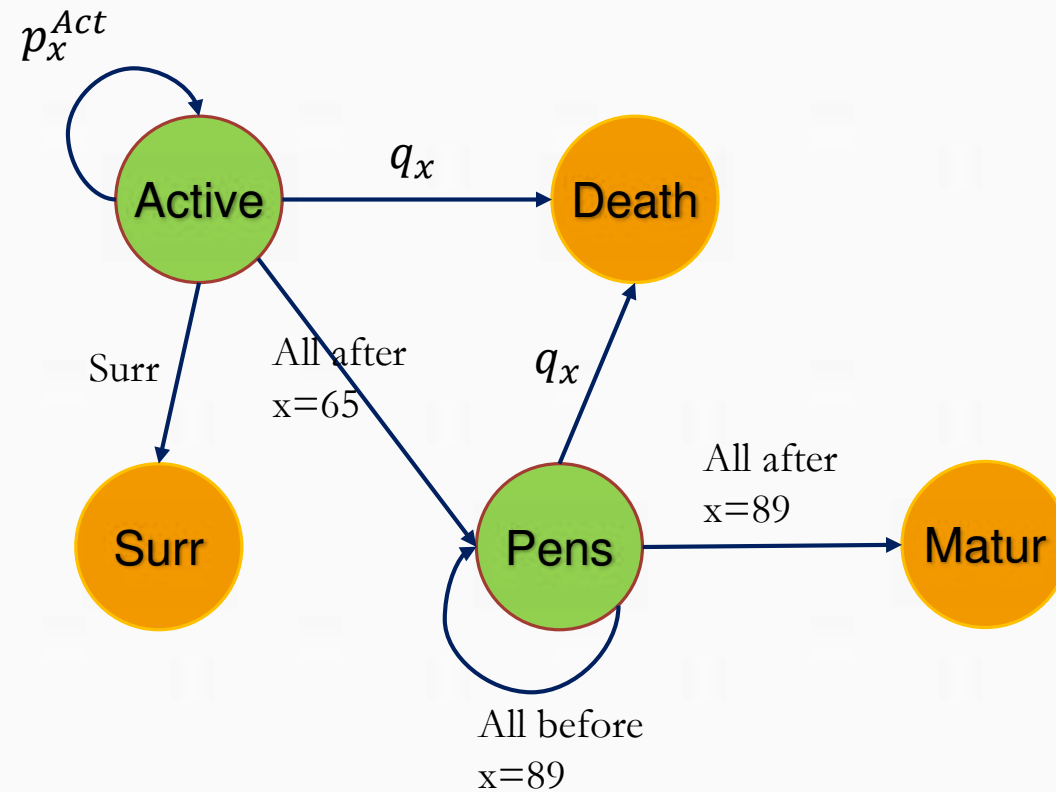
P9(L3 #30):
Granularity of
expenses' allocation
should be as a
minimum by line of
business

Choosing an expense-model

Portfolio

- 100 000 contract
- Fund value of each contract at the beginning of the projection is SEK 100 000
- Insured are men, 45 years old at the beginning of the projection
- All insured have the same type of unit-linked insurance with a death risk cover of 105% of fund value
- Saving time is 20 years (up to 65 years old)
- Paying out time is 24 years
- Average total company's yearly expenses are SEK 15 000 000

Markov model



Assumptions and notations

- t – Time variable, years ($t=0$ at the beginning of projection)
- x – Age of insured, years ($x=45$ at the beginning of projection)
- ST – Saving time, years $ST=20$
- PT – Paying out time, years $PT=24$
- $TotExp$ – Average total company's yearly expenses during last 3 years $TotExp = 15\,000\,000$ SEK
- Inc – Yearly income, % of fund value $Inc = 0,7\%$
- Tax – Yearly tax, % of fund value $Tax = 0,0765\%$
- $Surr$ – Yearly surrender rate, % $Surr = 5\% / 15\%$
- q_x – Probability of death at age x
- FV_t – Fund value, year t , bop $FV_1=10\,000\,000\,000$ SEK
- NC_t – Number of contracts, year t , bop $NC_1=100\,000$
- BE_t – Best estimate of liabilities, year t , bop
- CF_{total_t} – Total cash flow, year t , bop
- CF_{pens_t} – Pension benefits cash flow, year t , bop
- CF_{inc_t} – Income cash flow, year t , bop
- CF_{exp_t} – Expense cash flow, year t , bop
- CF_{surr_t} – Surrender cash flow, year t , bop
- CF_{tax_t} – Tax cash flow, year t , bop
- CF_{death_t} – Death benefits cash flow, year t , bop
- f_t – Forward rates, year t

Best estimate calculation

$$BE_t = CF_{total_t} + \frac{BE_{t+1}}{1 + f_t}$$

$$CF_{total_t} = CF_{pens_t} - CF_{inc_t} + CF_{exp_t} + CF_{surr_t} + CF_{tax_t} + CF_{death_t},$$

$$CF_{pens_t} = \begin{cases} 0, & t \leq ST \\ \frac{FV_t}{ST + PT - t + 1}, & ST < t \leq ST + PT \\ 0, & t > ST + PT \end{cases}$$

$$CF_{tax_t} = \begin{cases} Tax \cdot (FV_t - CF_{pens_t} - CF_{surr_t} - CF_{death_t}), & t < ST + PT \\ 0, & t \geq ST + PT \end{cases}$$

$$CF_{death_t} = \begin{cases} 1,05 \cdot (FV_t - CF_{pens_t}) \cdot q_{x+t-1}^{14}, & t < ST + PT \\ 0, & t \geq ST + PT \end{cases}$$

$$CF_{inc_t} = \begin{cases} Inc \cdot (FV_t - CF_{pens_t} - CF_{surr_t} - CF_{death_t}), & t < ST + PT \\ 0, & t \geq ST + PT \end{cases}$$

$$CF_{surr_t} = \begin{cases} Surr \cdot (FV_t - CF_{pens_t} - CF_{death_t}), & t < ST \\ 0, & t \geq ST \end{cases}$$

$$FV_t = \begin{cases} 10\,000\,000\,000, & t = 0 \\ (FV_{t-1} - CF_{pens_t} - CF_{surr_t} - CF_{tax_t} - CF_{death_t}) \cdot (1 + f_{t-1}), & t \geq 1 \end{cases}$$

Model 1: Constant expenses per policy

Yearly expenses per policy:

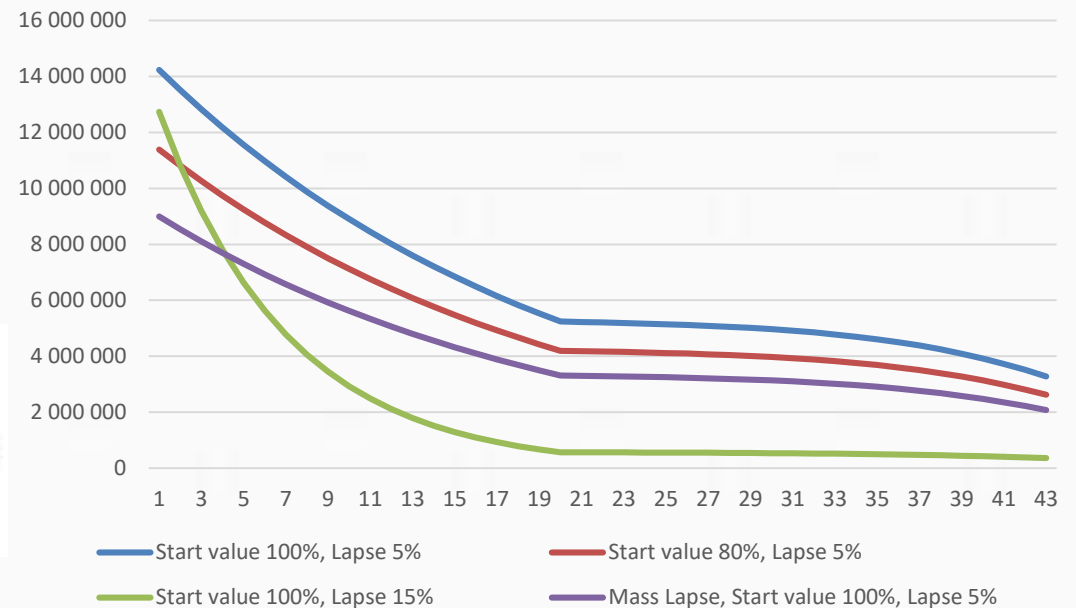
$$Exp_{Contr} = \frac{TotExp}{NC_1} = \frac{15000000}{100000} = 150$$

$$CF_exp_t = \begin{cases} Exp_{Contr} \cdot NC_1 \cdot p_{x+t}^{Act}, & t < ST + PT \\ 0, & t \geq ST + PT \end{cases}$$

p_x^{Act} – Probability to stay in active state is

$$p_x^{Act} = \begin{cases} 1, & x = 45, \\ p_{x-1}^{Act} \cdot (1 - q_x) \cdot (1 - Surr), & 45 < x \leq 65 \\ p_{x-1}^{Act} \cdot (1 - q_x), & x > 65. \end{cases}$$

1. Expenses per policy



Model 3: Company's yearly fixed costs and constant expenses per policy increased with inflation

Exp_{Fixed} – Yearly fixed expenses of an insurance undertaking $Exp_{Fixed} = 3\text{ mSEK}$

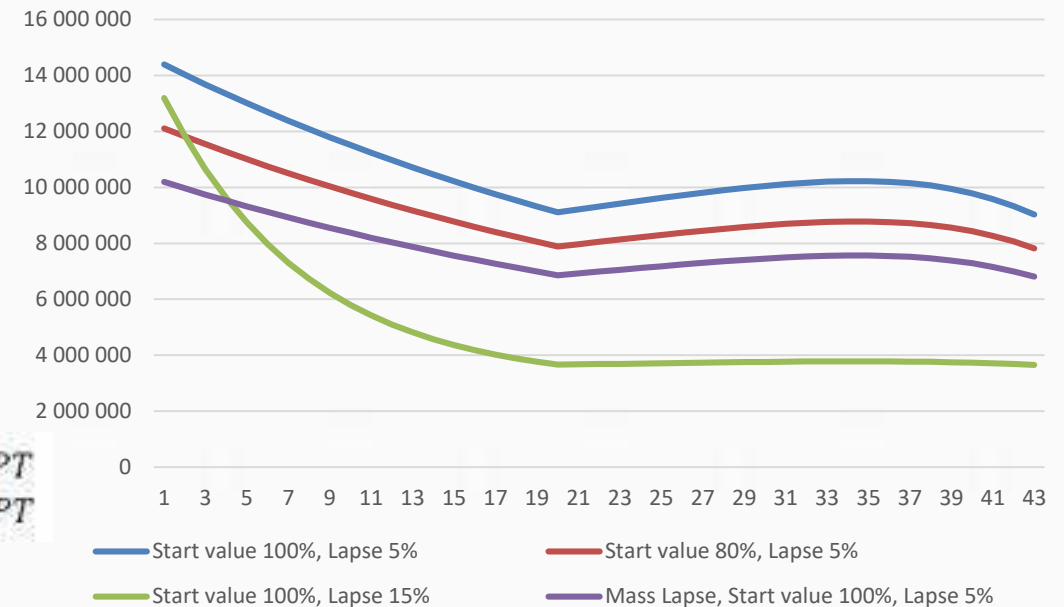
Yearly expenses per policy:

$$Exp_{Contr} = \frac{TotExp - Exp_{Fixed}}{NC_1} = \frac{15000000 - 3000000}{100000} = 120$$

$Infl$ – Yearly inflation, % $Infl = 2\%$

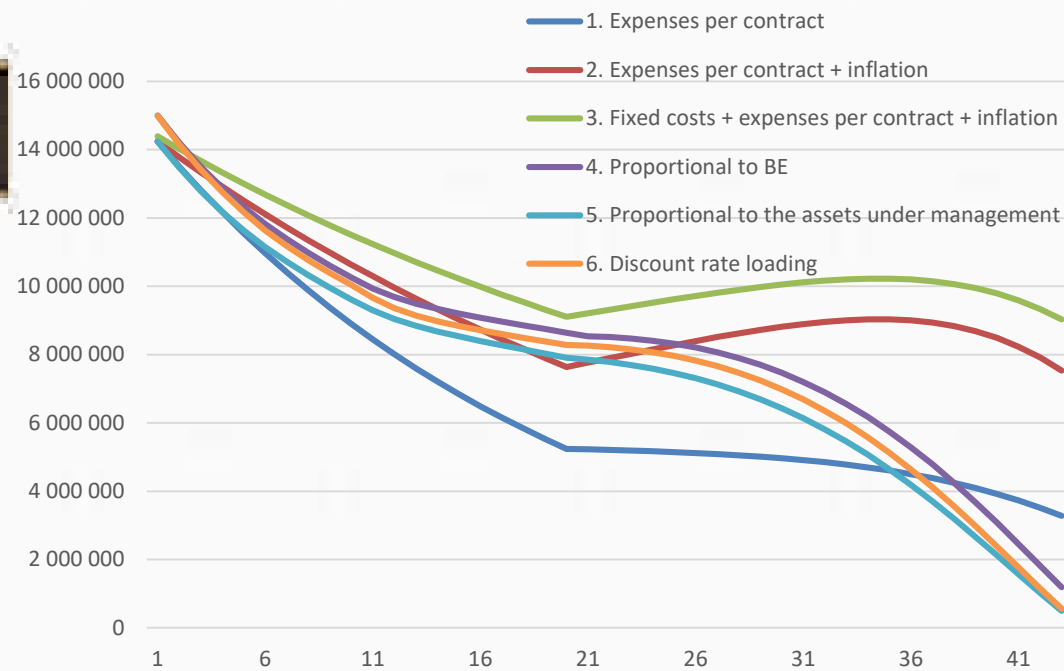
$$CF_exp_t = \begin{cases} Exp_{Fixed} + Exp_{Contr} \cdot (1 + Infl)^{t-1} \cdot NC_1 \cdot p_{x+t}^{Act}, & t < ST + PT \\ 0, & t \geq ST + PT \end{cases}$$

3. Fixed Costs + Expenses per policy + Inflation



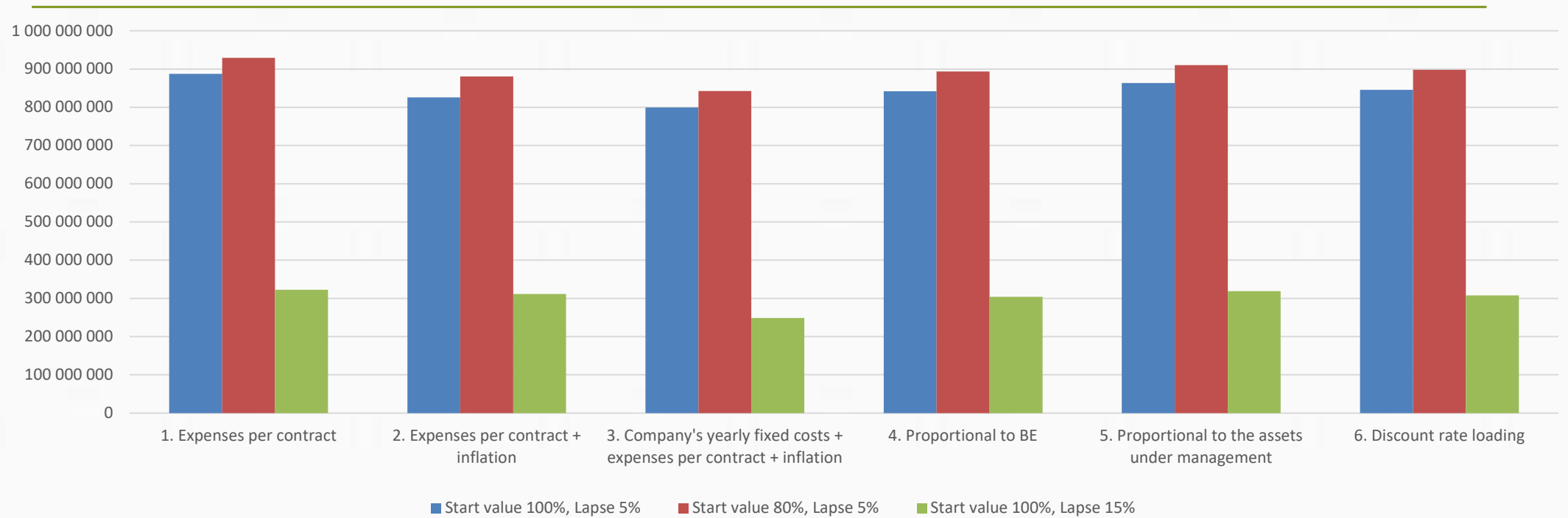
Best Estimate Results

Expense cash-flow models (start value 100%, lapse 5%)



Model	Start value 100%, Lapse 5%	Start value 80%, Lapse 5%	Start value 100%, Lapse 15%
1. Expenses per contract	9 112 703 123	9 070 574 864	9 677 551 487
2. Expenses per contract + inflation	9 173 926 672	9 119 416 976	9 688 602 035
3. Company's yearly fixed costs + expenses per contract + inflation	9 200 928 324	9 157 320 567	9 751 264 622
4. Proportional to BE	9 157 942 642	9 106 629 752	9 695 865 177
5. Proportional to the assets under management	9 136 797 150	9 089 713 359	9 681 281 466
6. Discount rate loading	9 154 461 304	9 102 374 130	9 692 064 004

Excess of Assets over Liabilities



Solvency Capital Requirement

Model	SCR_masslapse	SCR_exp
1. Expenses per contract	326 898 849	21 064 130
2. Expenses per contract + inflation	304 342 805	74 186 004
3. Company's yearly fixed costs + expenses	324 425 325	60 565 249
4. Proportional to BE	309 122 315	25 656 445
5. Proportional to the assets under	318 022 103	23 541 896
6. Discount rate loading	311 514 256	26 007 771

As a Result

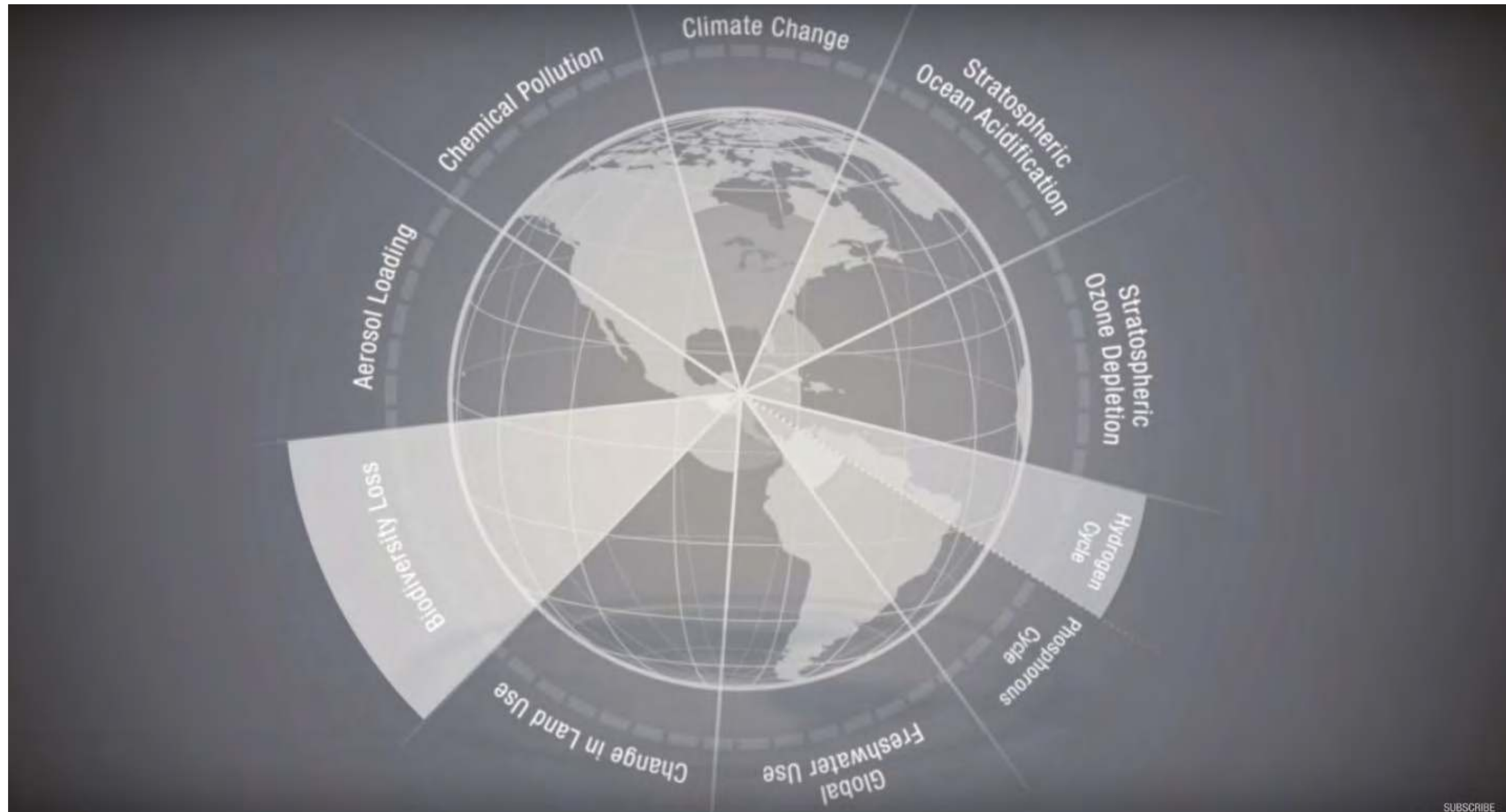
- 1) Some of the models are easier to deal with (M1-M3, M5) than the others (M4, M6)
- 2) Some of the models are more optimistic (M1, M5) than the others (M3)
- 3) The best estimate result is more sensitive to the choice of the starting value than to the choice of a projecting model
- 4) Assumptions about surrenders in a best estimate calculation affect the result more than to the choice of a projecting model

References

- [1] Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) <http://data.europa.eu/eli/dir/2009/138/2014-05-23>.
- [2] Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), Official Journal of the European Union, L 12, 17 January 2015.
- [3] Försäkrade i Sverige. Livslängder och dödlighet, prognoser 2014–2070. Svensk Försäkring, https://www.svenskforsakring.se/globalassets/rapporter/livslangder-och-dodlighet/112679_forsakrade_i_sverige_web.pdf
- [4] W. Feller, An Introduction to Probability Theory and Its Applications, v.1 3rd edition, John Wiley & Sons, 1968.
- [5] Risk-Free Interest Rate Term Structures, background material, <https://eiopa.europa.eu/regulation-supervision/insurance/solvency-ii-technical-information/risk-free-interest-rate-term-structures>
- [6] Guidelines on the valuation of technical provisions, EIOPA-BoS-14/166 EN

Thank you!

”Klimat och miljö allt större hot mot världsekonomin – och en växande utmaning för försäkringsbranschen”



Fem saker om planeten och vår egen hälsa, några råd, och en utmaning...





BUSINESS &
SUSTAINABLE
DEVELOPMENT
COMMISSION

BETTER BUSINESS BETTER WORLD

EXECUTIVE SUMMARY

The report of the Business & Sustainable Development Commission

January 2017



”Sustainable business models could open economic opportunities worth up to \$12 trillion and increase employment by up to 380 million jobs by 2030”

1) Vi börjar slå i taket för hur mycket planeten klarar av

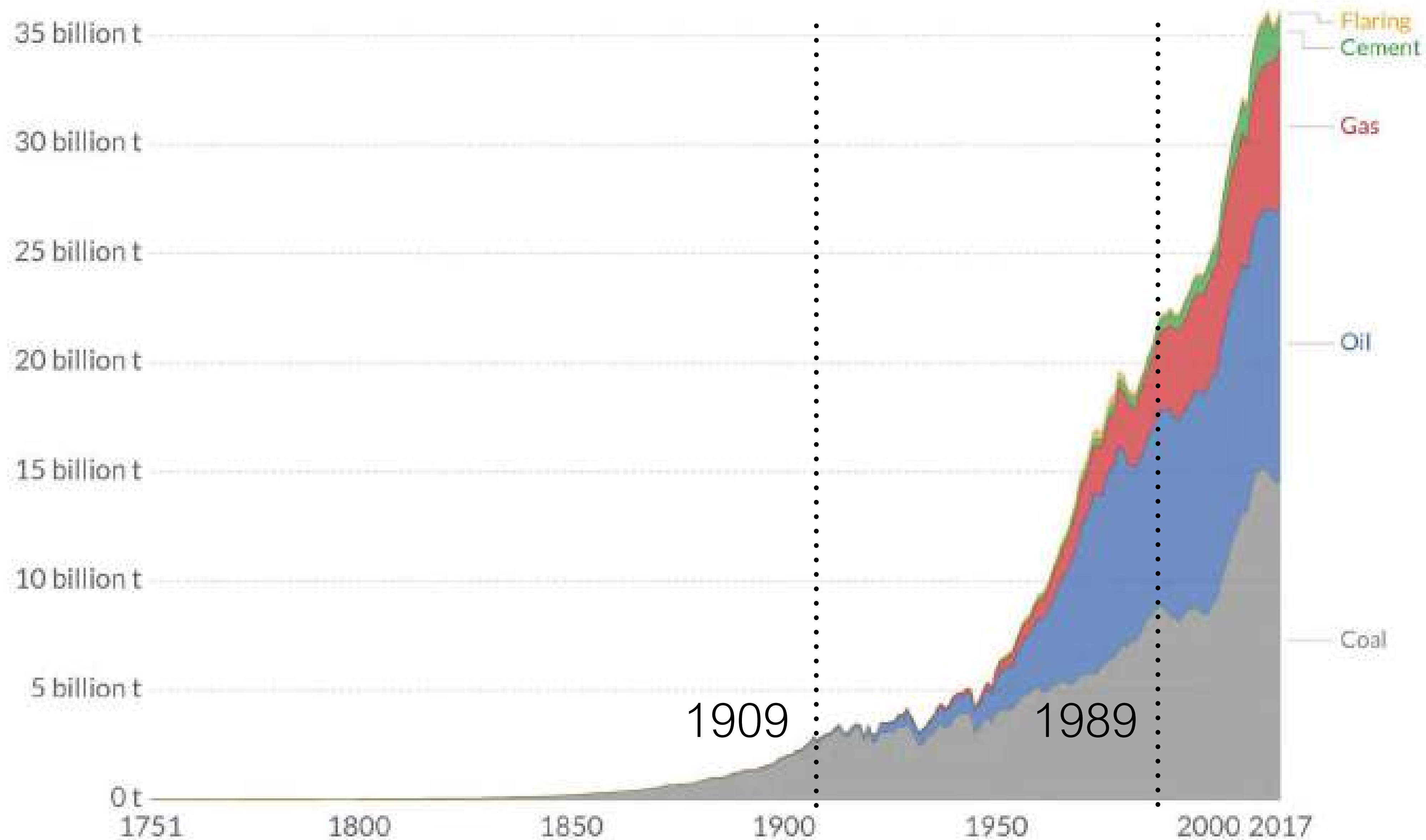


1989

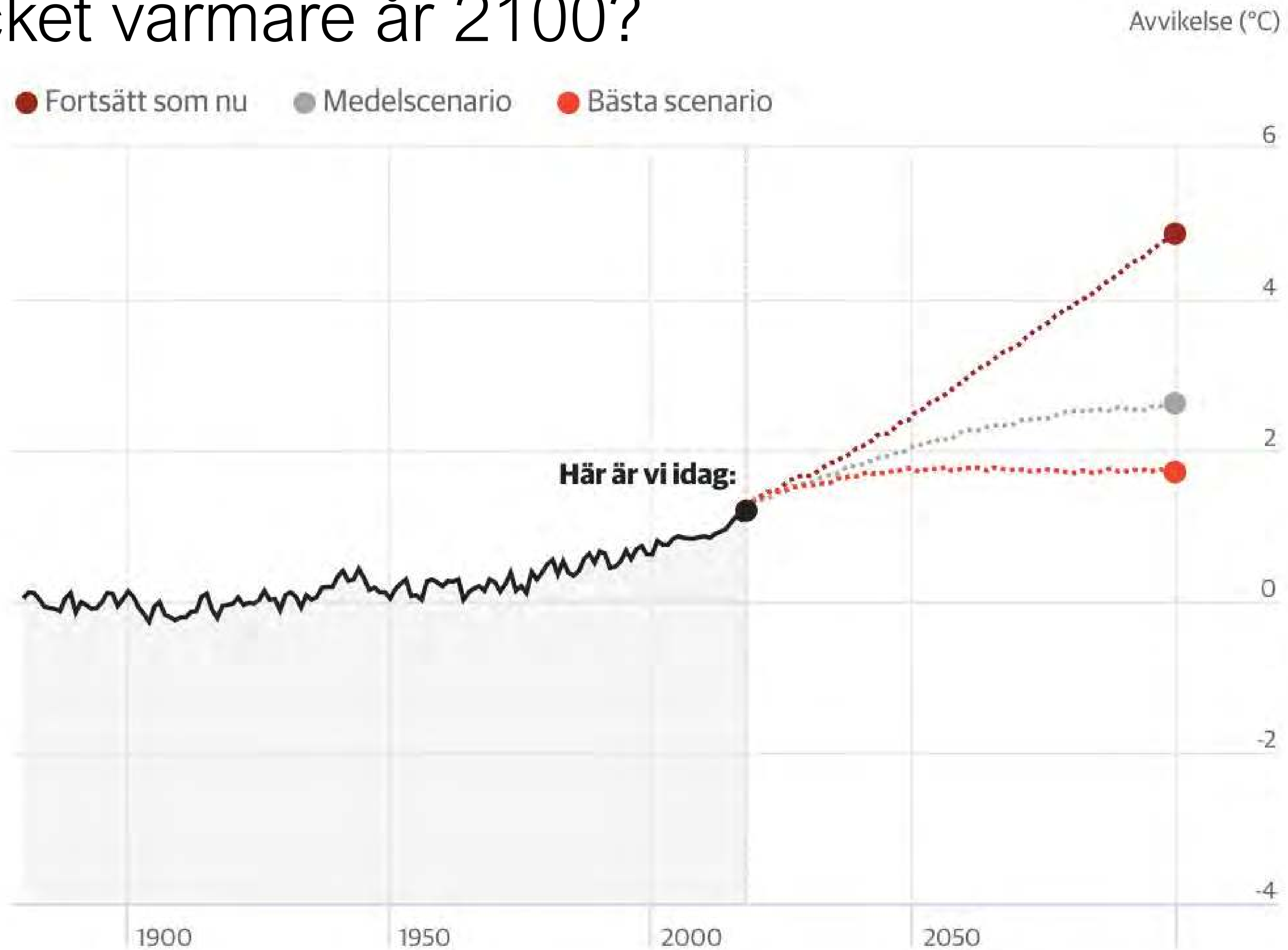


1909

Världens samlade koldioxidutsläpp



Hur mycket varmare år 2100?

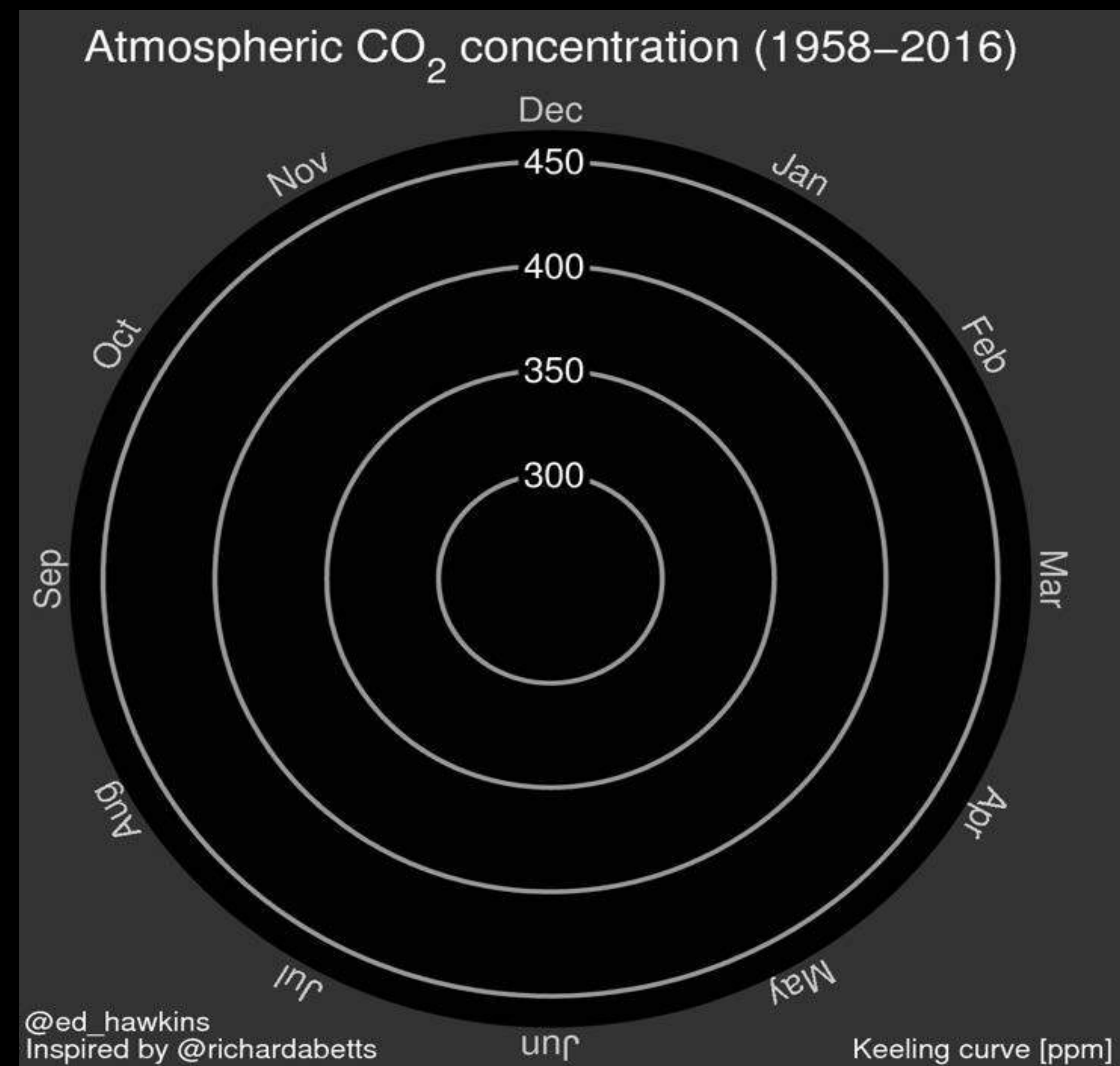
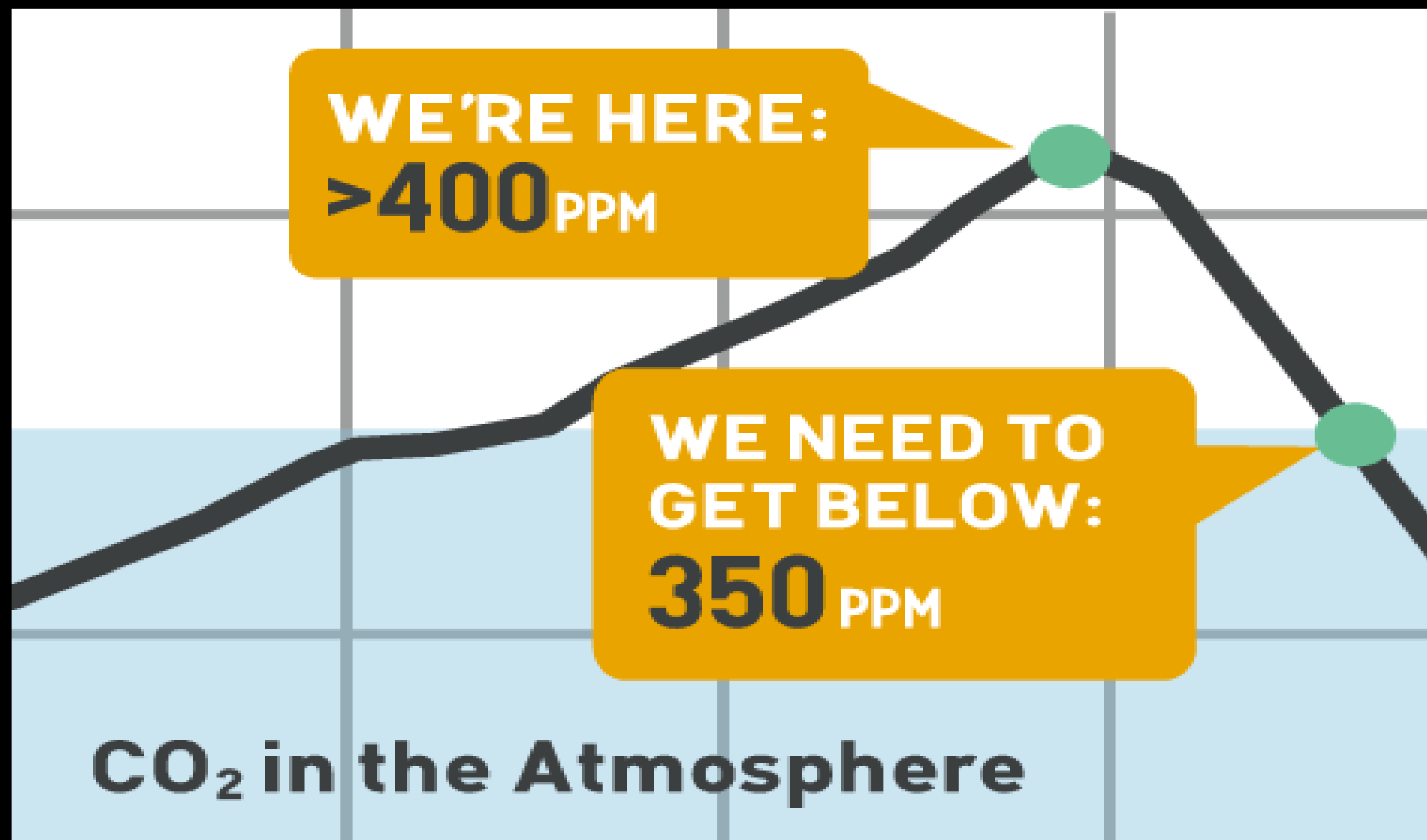




> 99 procent av korall-
reven borta vid +2°C

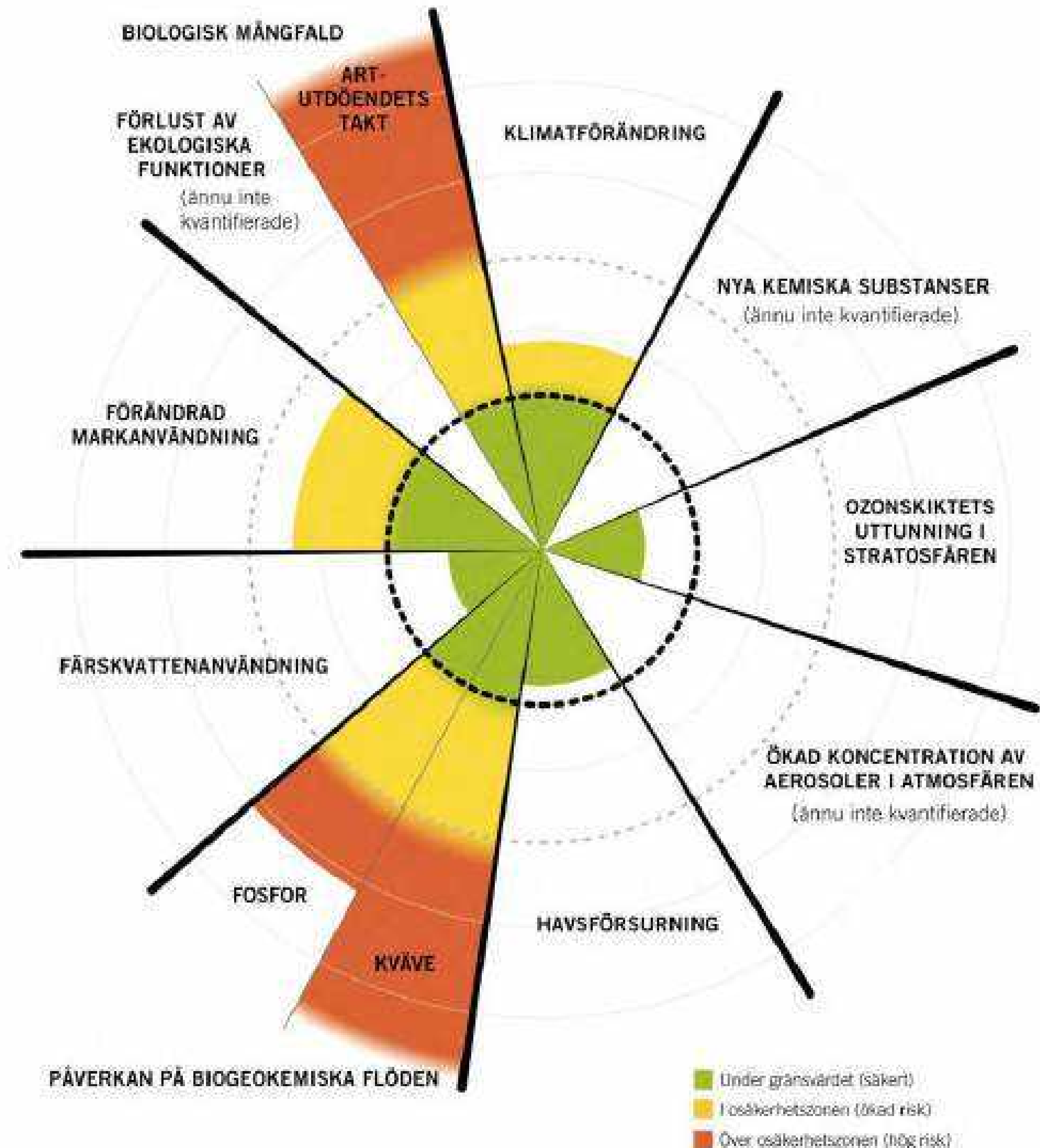


En miljon arter hotas av
utrotning



Hälsokontroll av planeten

- Fyra av nio planetära gränser passerade
- Planeten riskerar att hamna i ett för mänskligheten ofördelaktigt tillstånd
- Allt större påverkan på klimat/miljö och vi knaprar för hårt på jordens resurser



2) Detta förändrar radikalt den globala riskbilden



Amazonas: Fler än
100,000 bränder i år



Mer än 1 meter högre
havsnivå år 2100

Källa: IPCC, 2019

The Global Risks Report 2019 14th Edition

In partnership with Marsh & McLennan Companies and Zurich Insurance Group



THE GLOBAL RISK OUTLOOK FOR 2019

Types of Risks: ● ENVIRONMENTAL ● GEOPOLITICAL ● SOCIETAL ● TECHNOLOGICAL ● ECONOMIC

Top 5 Global Risks in Terms of **Impact**

- 1  *Weapons of mass destruction*
- 2  *Failure of climate-change mitigation and adaptation*
- 3  *Extreme weather events*
- 4  *Water crises*
- 5  *Natural disasters*

Top 5 Global Risks in Terms of **Likelihood**

- 1  *Extreme weather events*
- 2  *Failure of climate-change mitigation and adaptation*
- 3  *Natural disasters*
- 4  *Data fraud or theft*
- 5  *Cyber-attacks*

Di OMXSPI 16:08
+0,71% ↑
PÅSBOLET

S&P500 15:57
-0,06% ↓
(+14,31%)

Sveriges bästa finanssajt 2018

Lägg till instrument +

MENY

Svenska aktieägare kan påverka tröskeleffekter i klimatet



Expert: Finansjättarna kan avgöra planetens framtid

De kan använda sin makt för att antingen hjälpa eller medvetna är de själva? En ny studie från Stockholm I den globala finanssektorns roll i klimathotet, där någ

DAGENS NYHETER.

E-DN ARKIVET KUNDSERVICE
KORSORD DN.VR KUNDERBJUDANDEN

Nyheter Ekonomi Kultur Sthlm Sport Ledare DN Debatt DN Åsikt Mer

Jobb & Karriär Motor Börs Sök jobb Sök utbildning

Ekonomi

Svenska pensionsmiljarder placeras i känsliga skogar

UPPDATERAD 2018-11-28 PUBLICERAD 2018-11-07

BIOSPEL

Sleeping Financial Giants

Opportunities in financial leadership for climate stability

Veckans Affärer för det nya näringslivet LOGGA IN PÅ INSIGHTS | ANNONSE

VA. FOKUS VA FINANS VA INSIGHTS VA KVINNA ENTREPRENÖR EVENT VA AKADEMI VA SUPERKARRIÄR

OMX Copenhagen 20: 1032,25 0,455% ↑ Dow Jones Industrial Average: 26179,02 -0,302% ↓ NASDAQ 100: 7463,13 -0,1%



Dela artikeln **STUDIE** Publicerad 2018-11-08 13:43 av Karl-Johan Byttner



Här är finansbolagen som riskerar att väcka planetens "sovande jättar" och därmed äventyra klimatet

Några få stora finansaktörer har ett avgörande inflytande över klimatstabiliteten genom sina innehav kopplade till de stora skogarna i Sydamerika, Ryssland och Kanada, visar en studie från bland annat



Business Markets World UK TV More

SUSTAINABLE BUSINESS SEPTEMBER 18, 2019 / 10:27 PM / 14 DAYS AGO

As Amazon burns, 230 big investors call on firms to protect world's rainforests

Gram Slattery

4 MIN READ



RIO DE JANEIRO (Reuters) - With widespread fires wreaking havoc on the Amazon, over 200 investors representing some \$16.2 trillion under management on Wednesday called on companies to do their part in halting the destruction of the world's largest tropical rainforest.

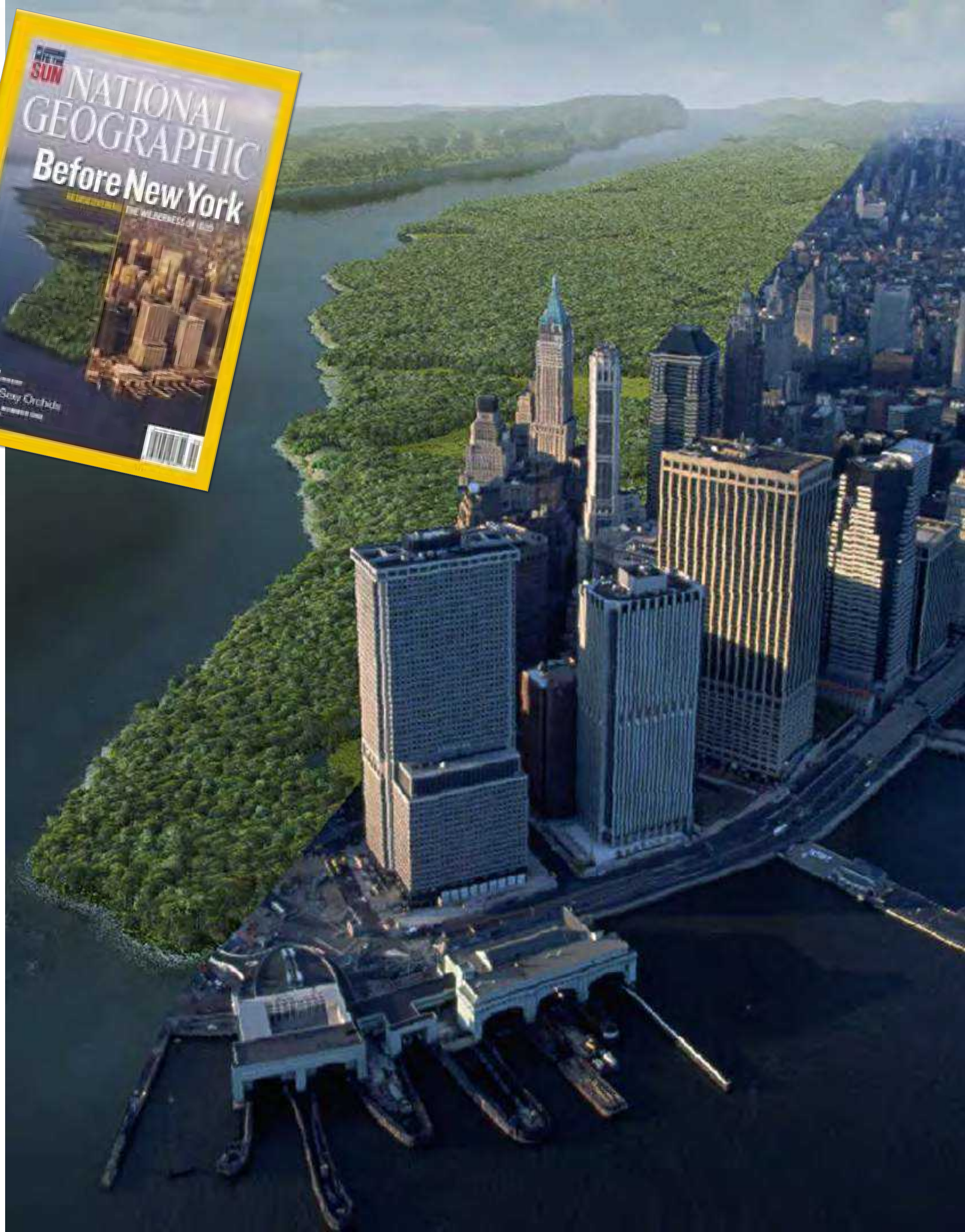
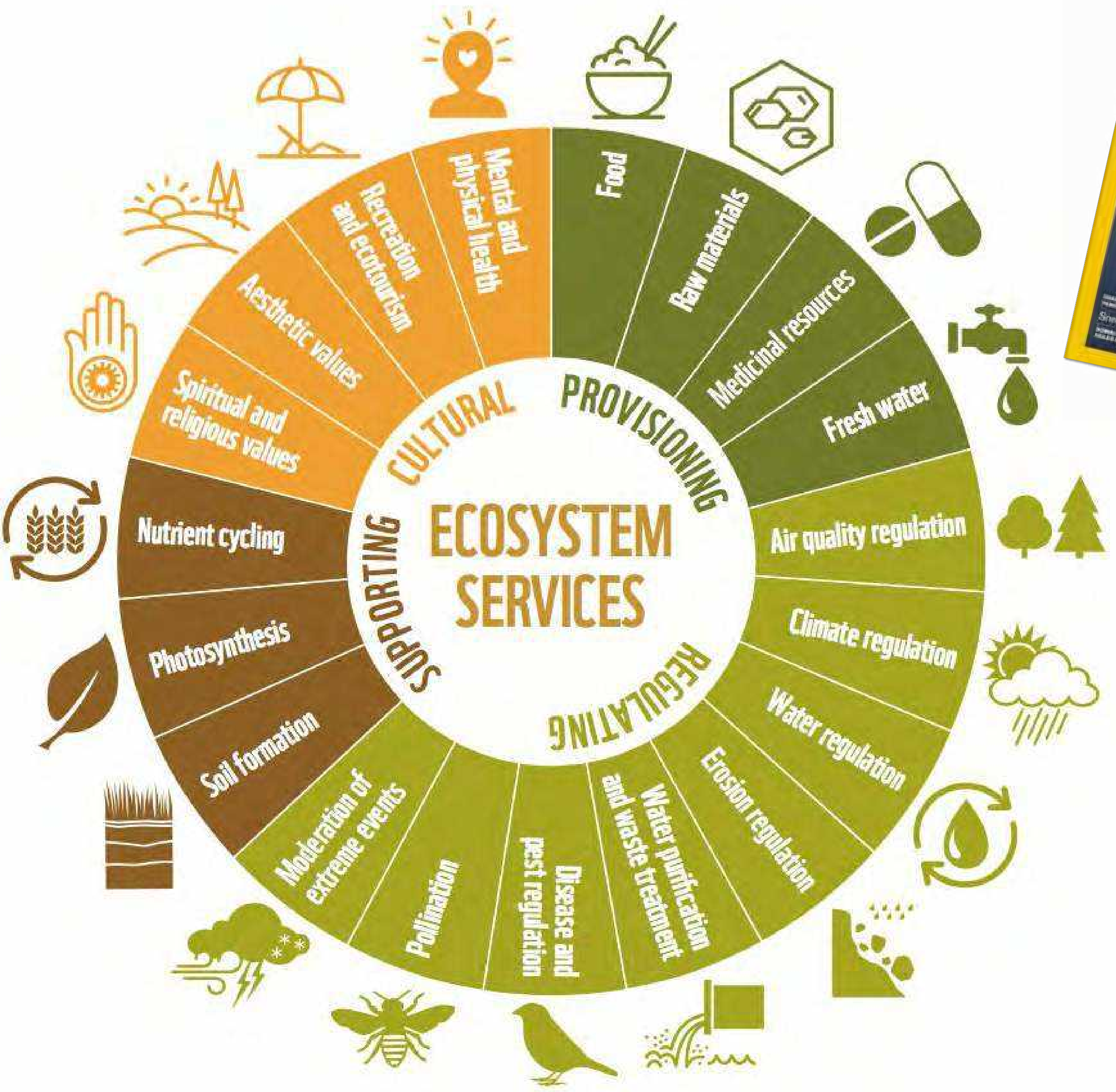


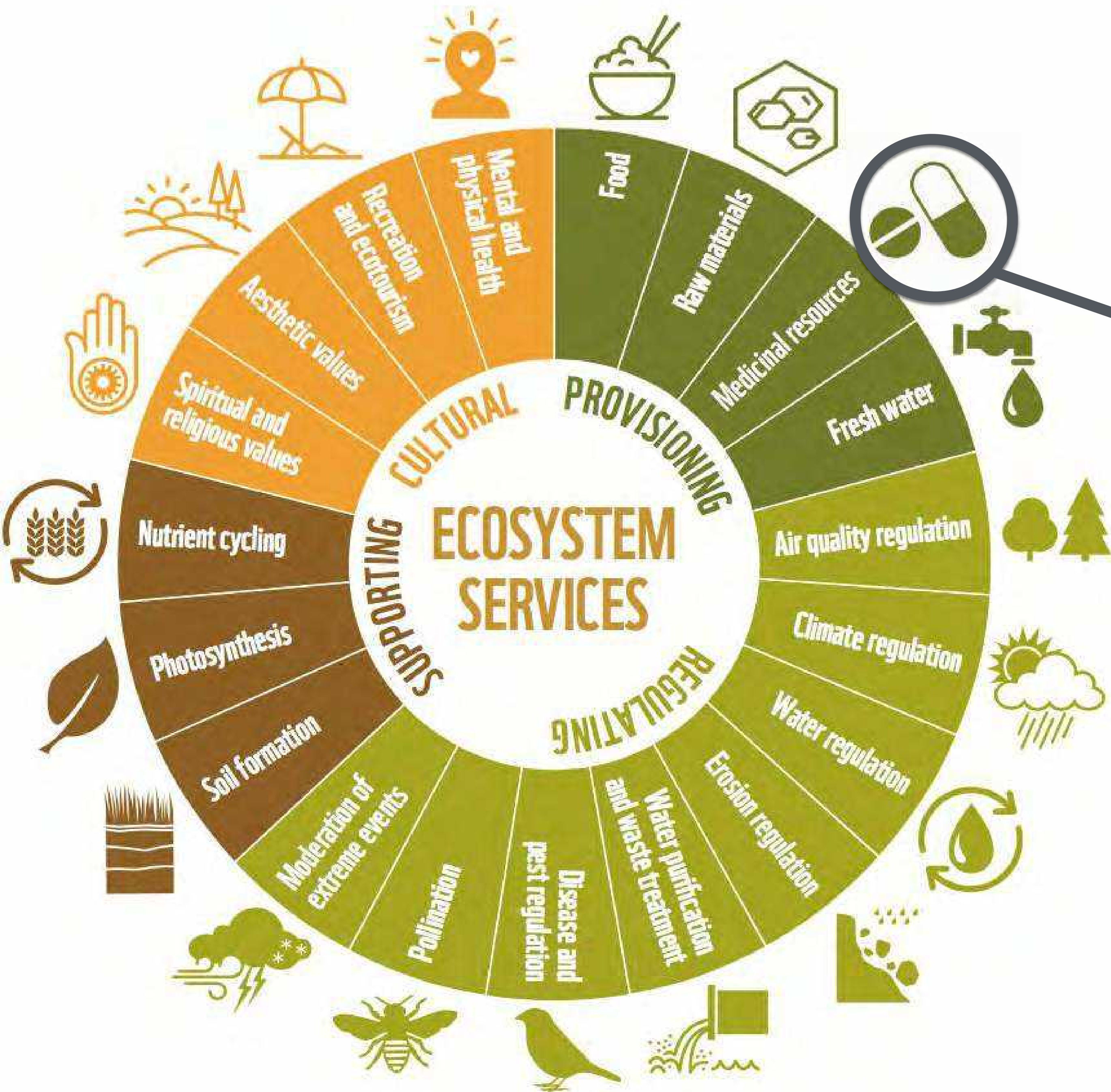
3) Vi själva mår i längden inte
bättre än planeten

Fler än 150,000 riskerar att dö
pga extremt väder år 2100

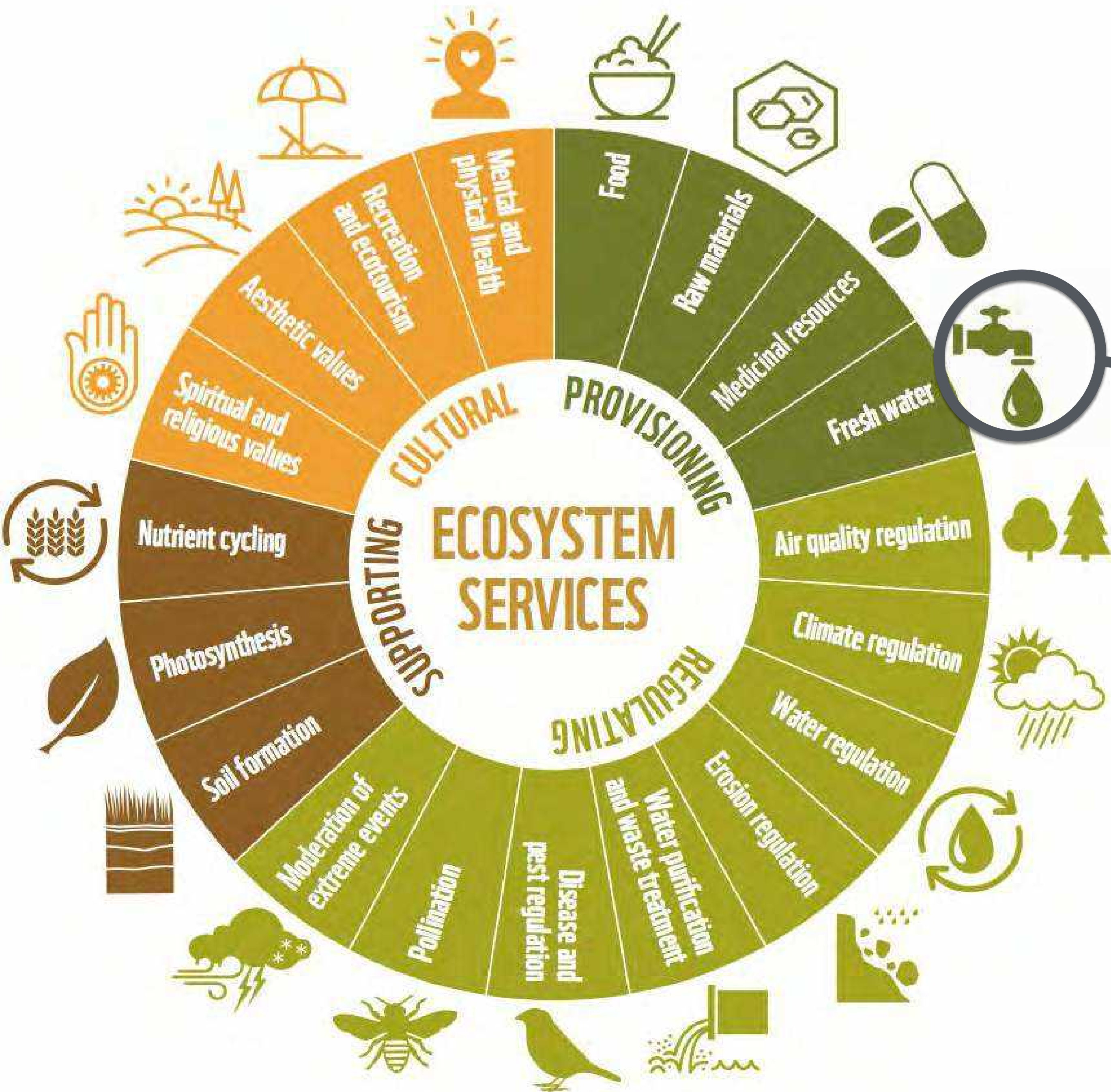


> 90 % av alla barn andas
smutsig luft

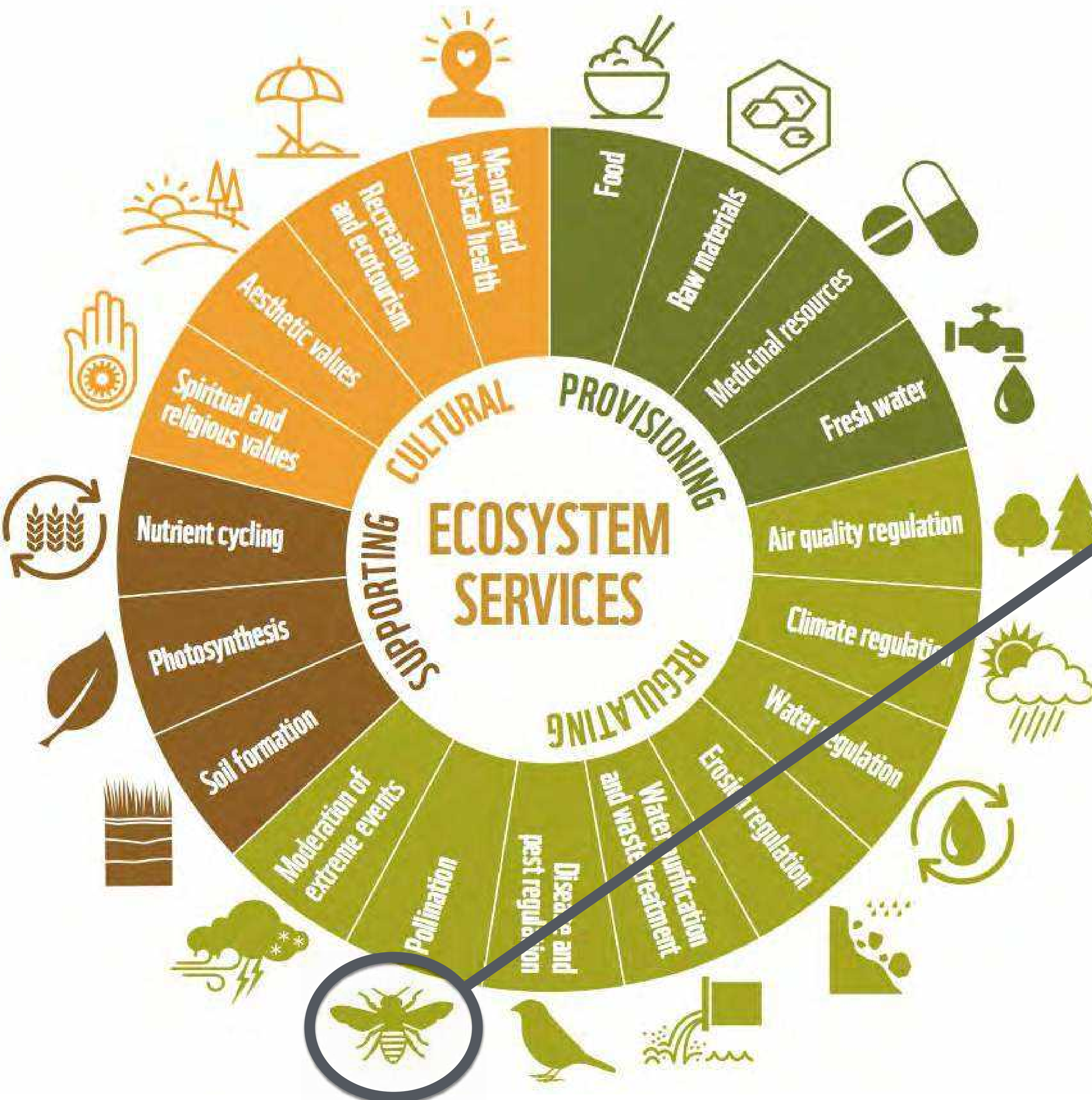




”4 miljarder människor är beroende av naturmedicin och ungefär **70% av alla cancermediciner** är naturliga eller inspirerade av naturen”



”**33** av världens största städer **får sitt dricksvatten** från skyddade skogar, t ex Mumbai, Bogotá Sydney”



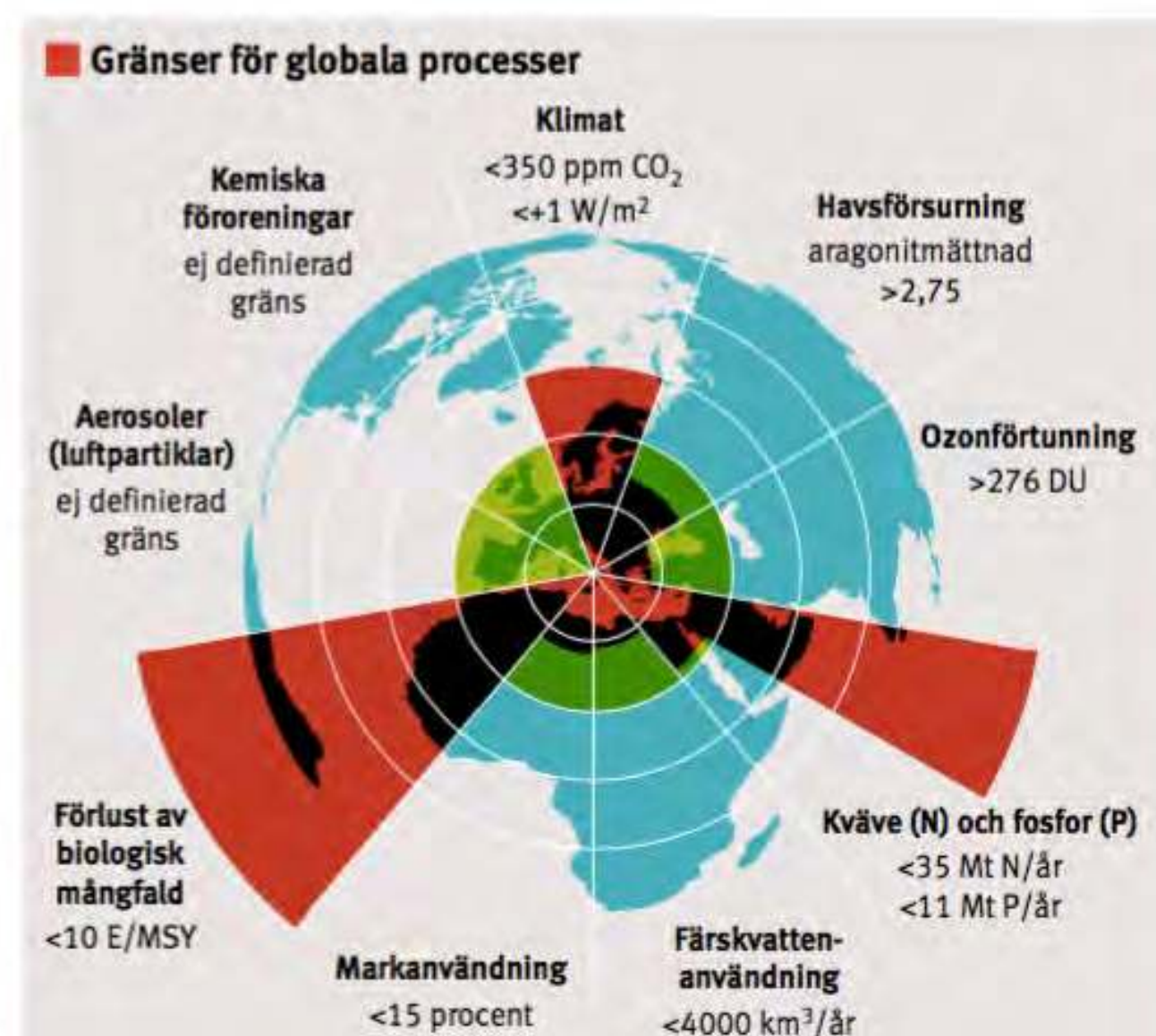
”Bin och andra pollinatörer värda upp till **577 miljarder dollar** varje år”

Obalans i globala miljöprocesser påverkar människors hälsa

Nio globala miljöprocesser är avgörande för att säkra stabila förhållanden på jorden. Det handlar bland annat om klimatet, världshaven, ozonskiktet och den biologiska mångfalden. Alla nio påverkar redan i dag människors hälsa.

JOHAN ROCKSTRÖM, professor i miljövetenskap, chef verksamhetschef, Albaeco fredrik@albaeco.com
FREDRIK MOBERG, fil dr, kommunikationsrådgivare/forskare; båda Stockholm Resilience Center, Stockholms universitet

Under det gångna seklet har jordens befolkning fyrfaldigats samtidigt som energikonsumtionen för varje individ har ökat trefaldigt. Tillgänglig billig fossil energi och tekniska framsteg har lett till en enastående utveckling av människors välbefinnande och livskvalitet, även om fördelningen fortfarande är mycket ojämn. Dessvärre har denna snabba expansion även

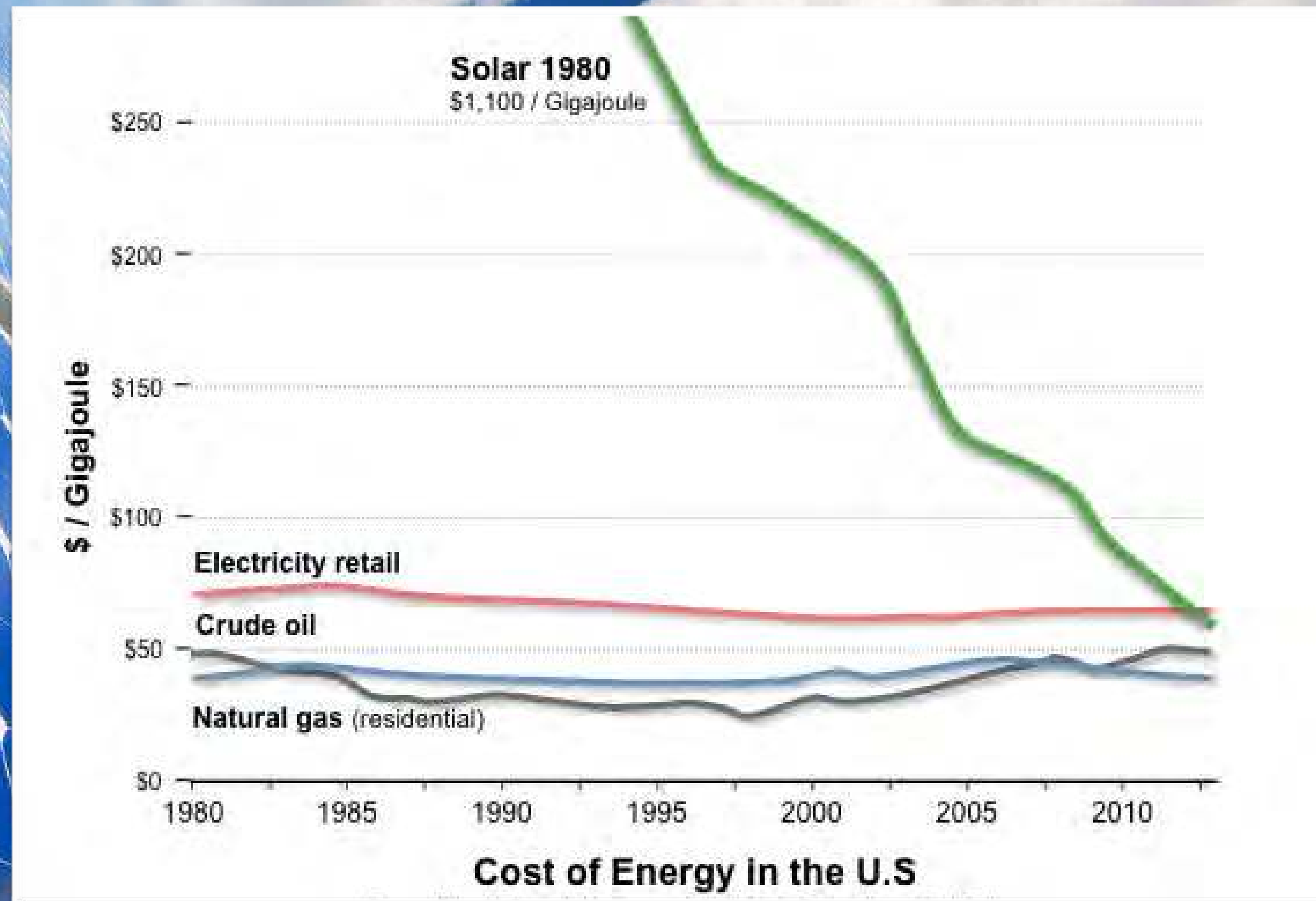


- Bekämpningsmedel i mat, tungmetaller i stadsmiljön
- Ökad spridning av infektionssjukdomar
- Minskat skydd mot skadlig UV-strålning
- Fler giftiga algblomningar, nitrit i dricksvatten

4) Lösningarna finns och de lönar sig redan

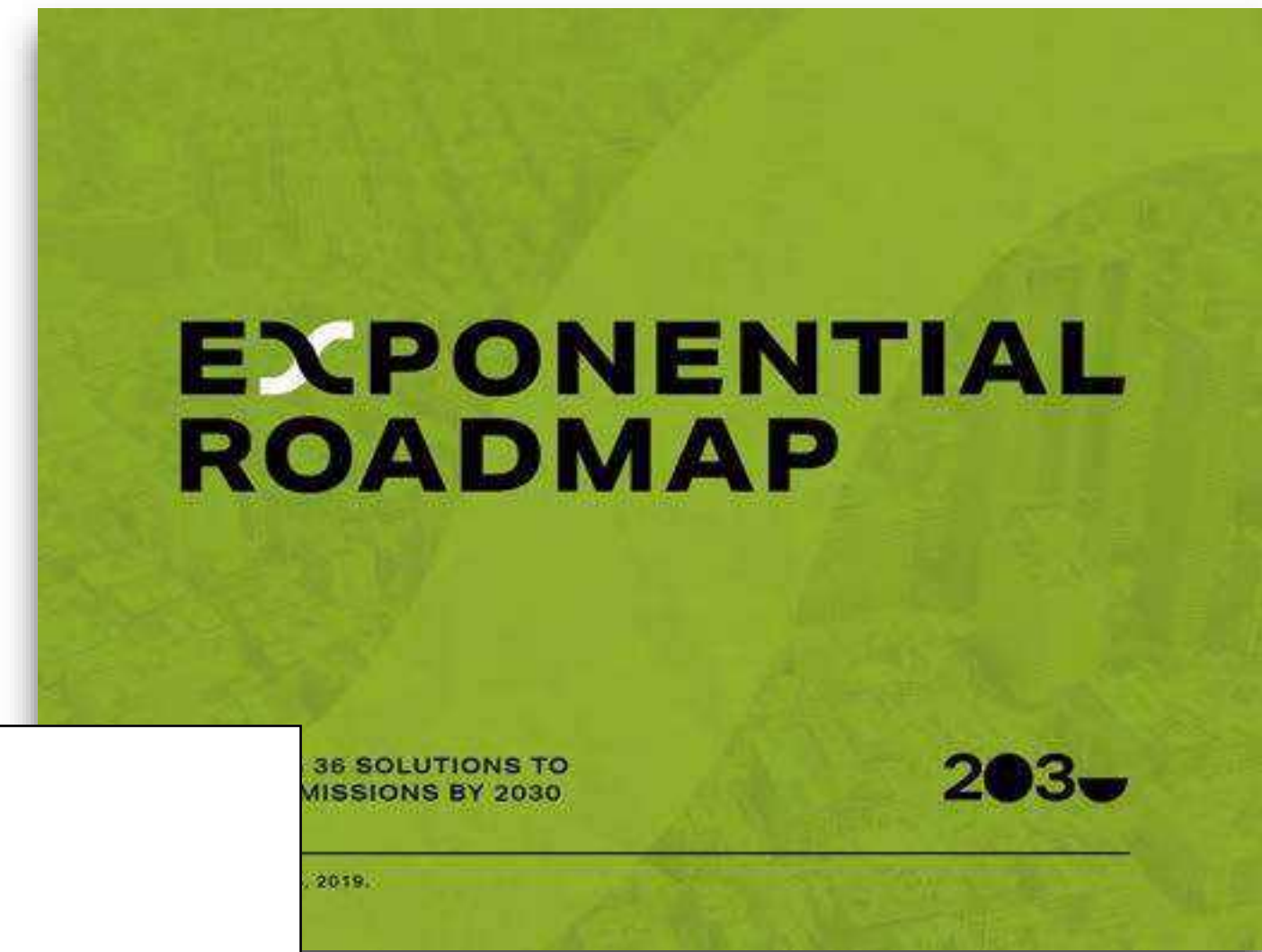
Energi - Maten - Staden - Ekonomin

Energin: Solenergi blir allt billigare

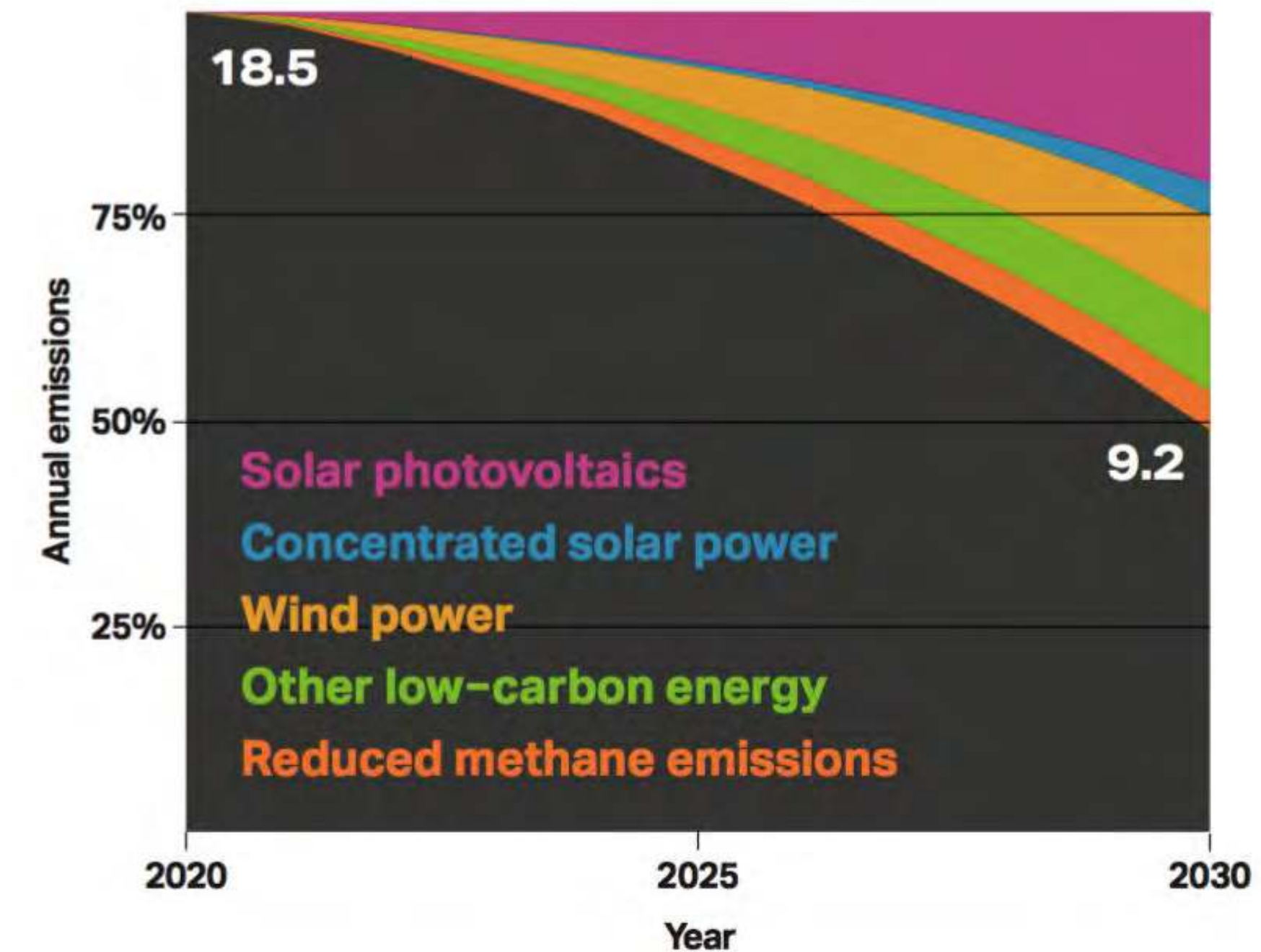


”The Carbon Law”

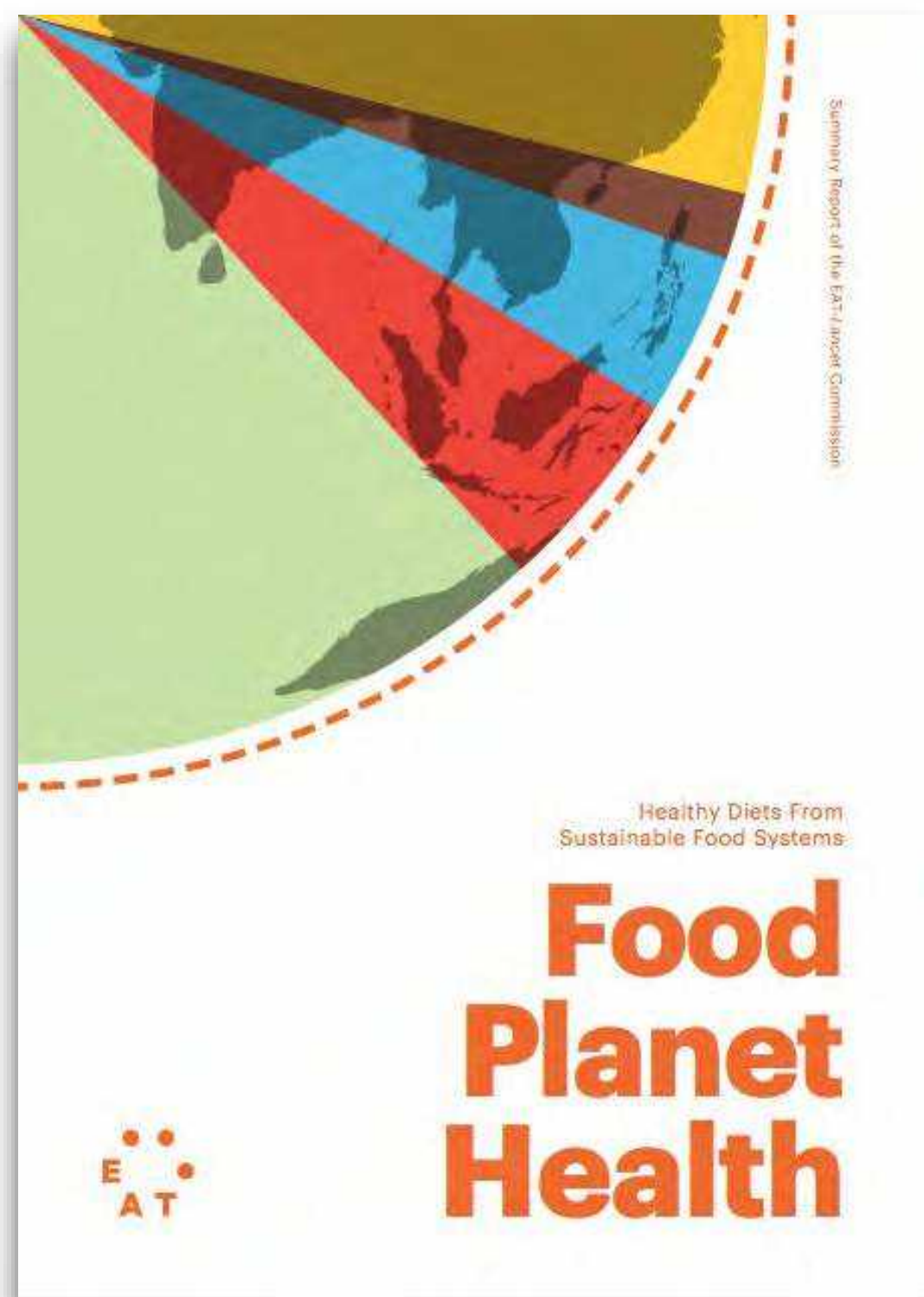
– Halvera utsläppen varje årtionde



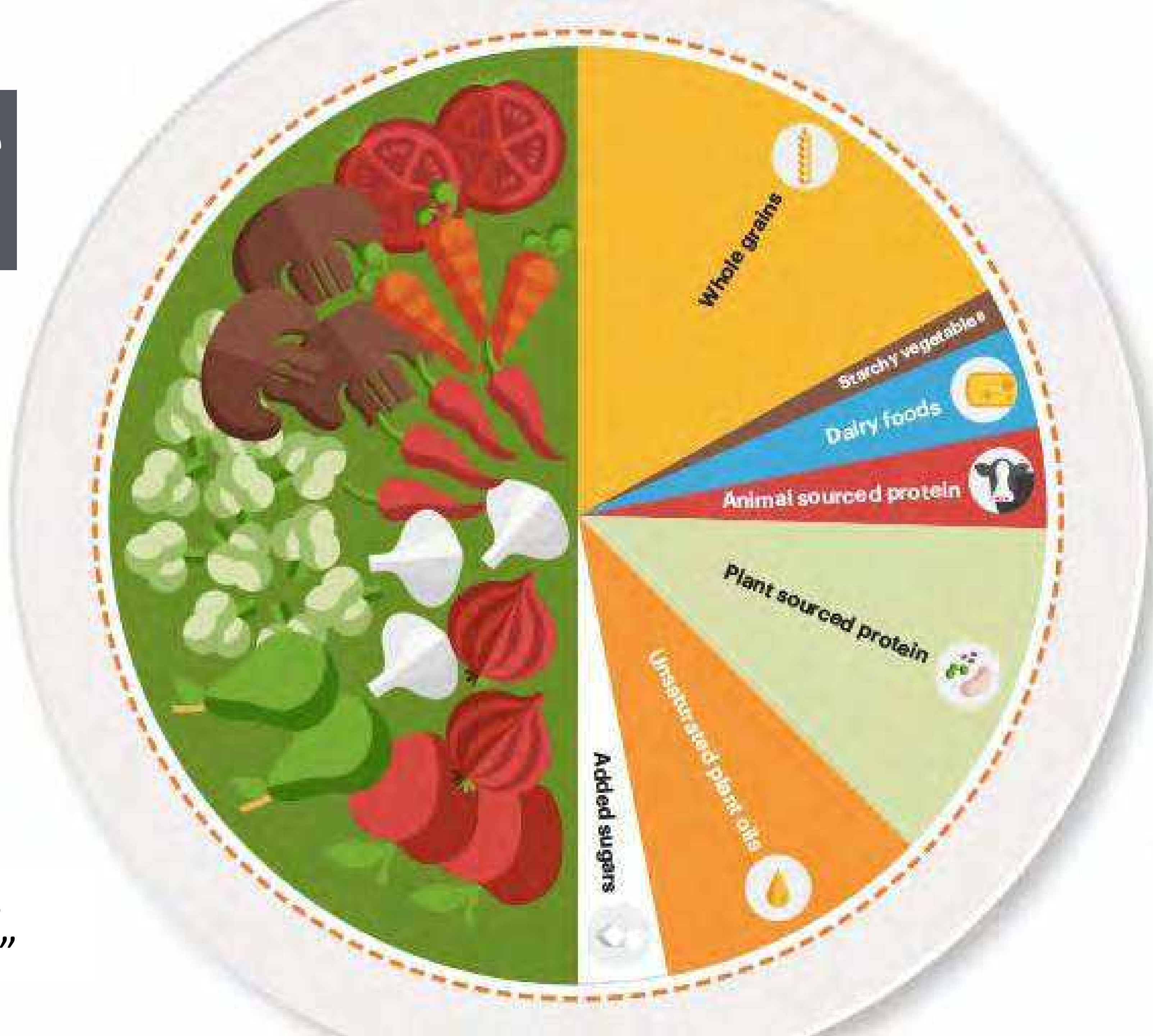
TRAJECTORY



Maten: 11 miljoner färre dödsfall per år



”Halvera socker, 70 % mindre kött, dubbla nötter, frukt och baljväxter”

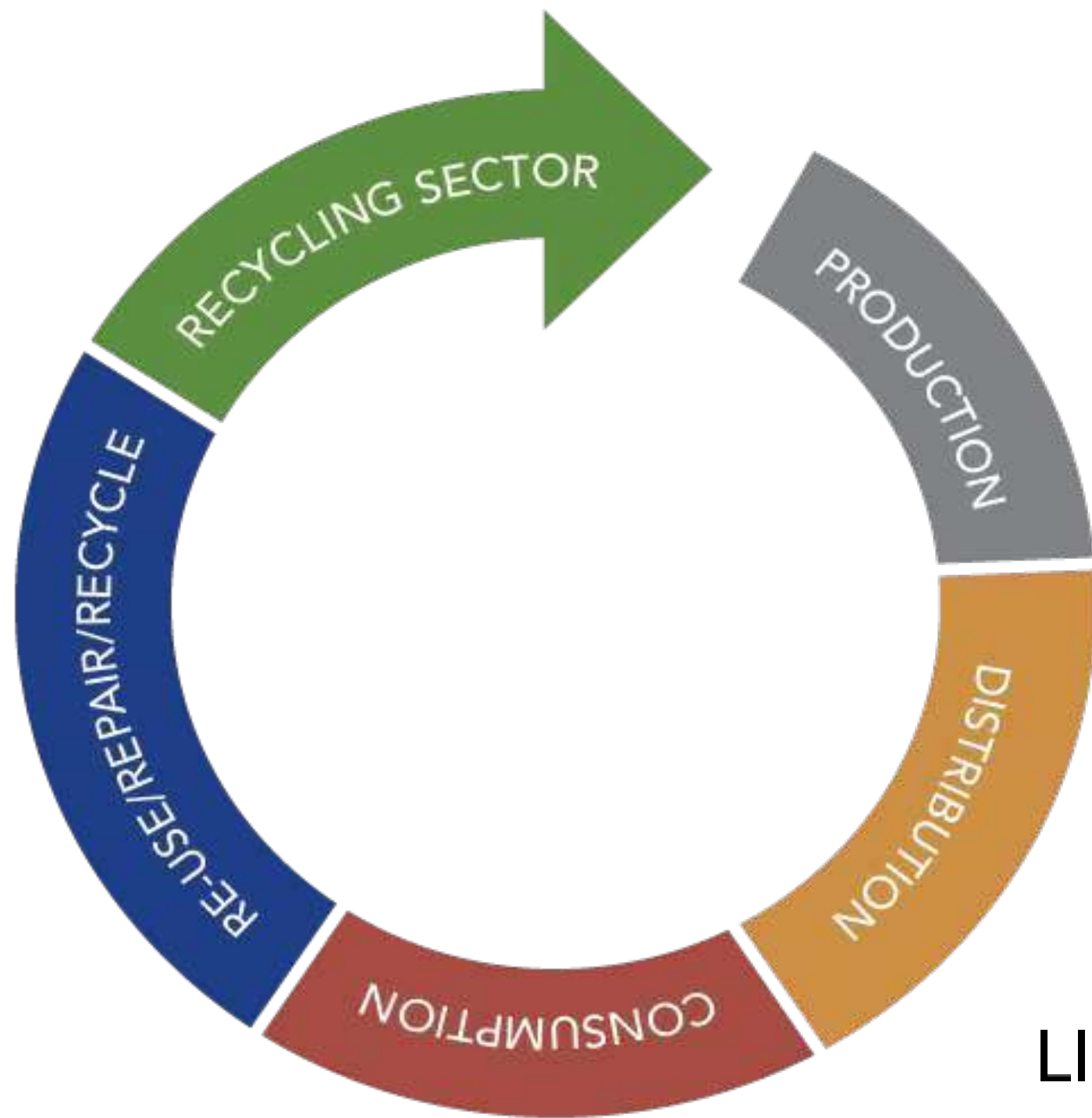


Staden: investera i "naturkapitalet"

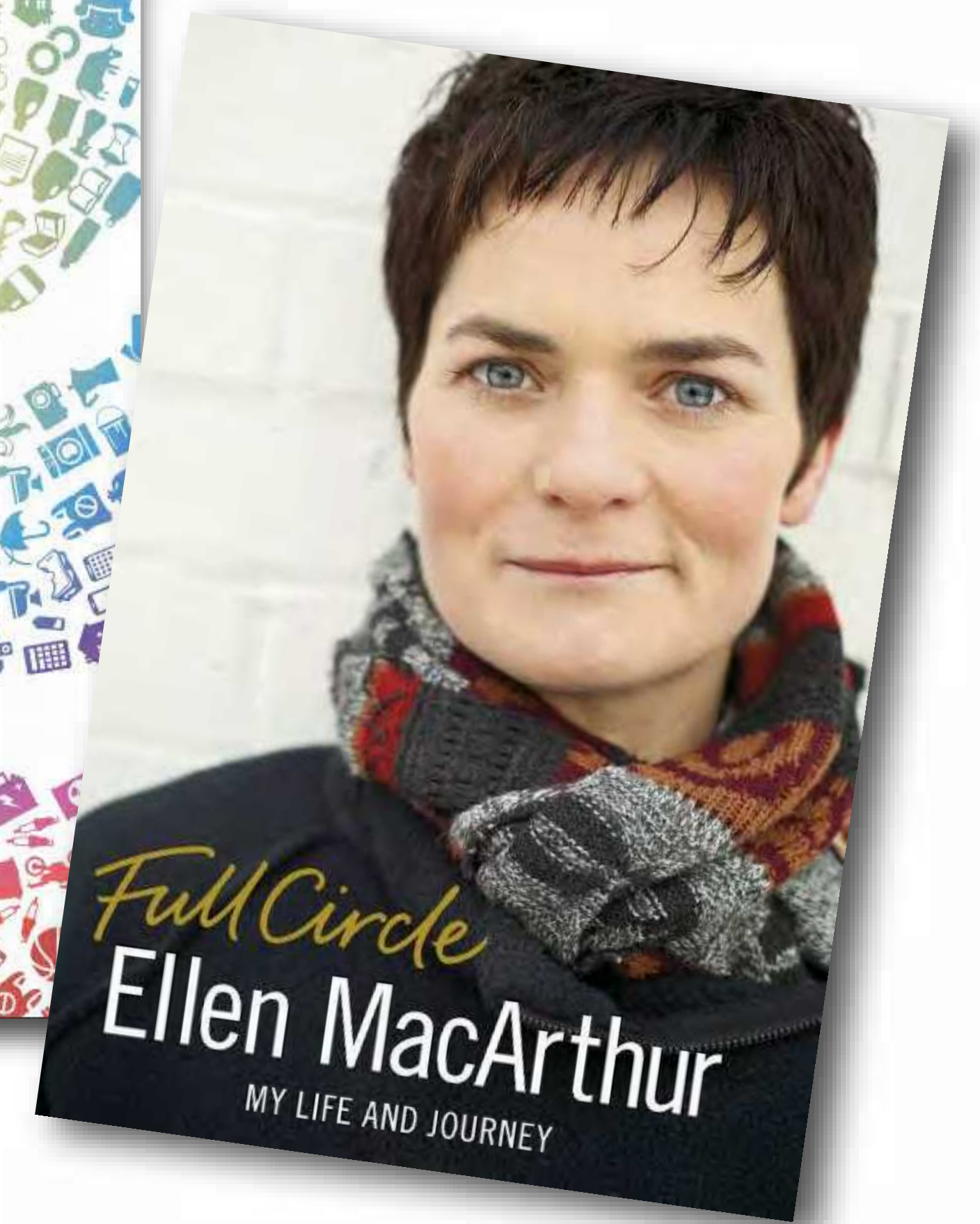
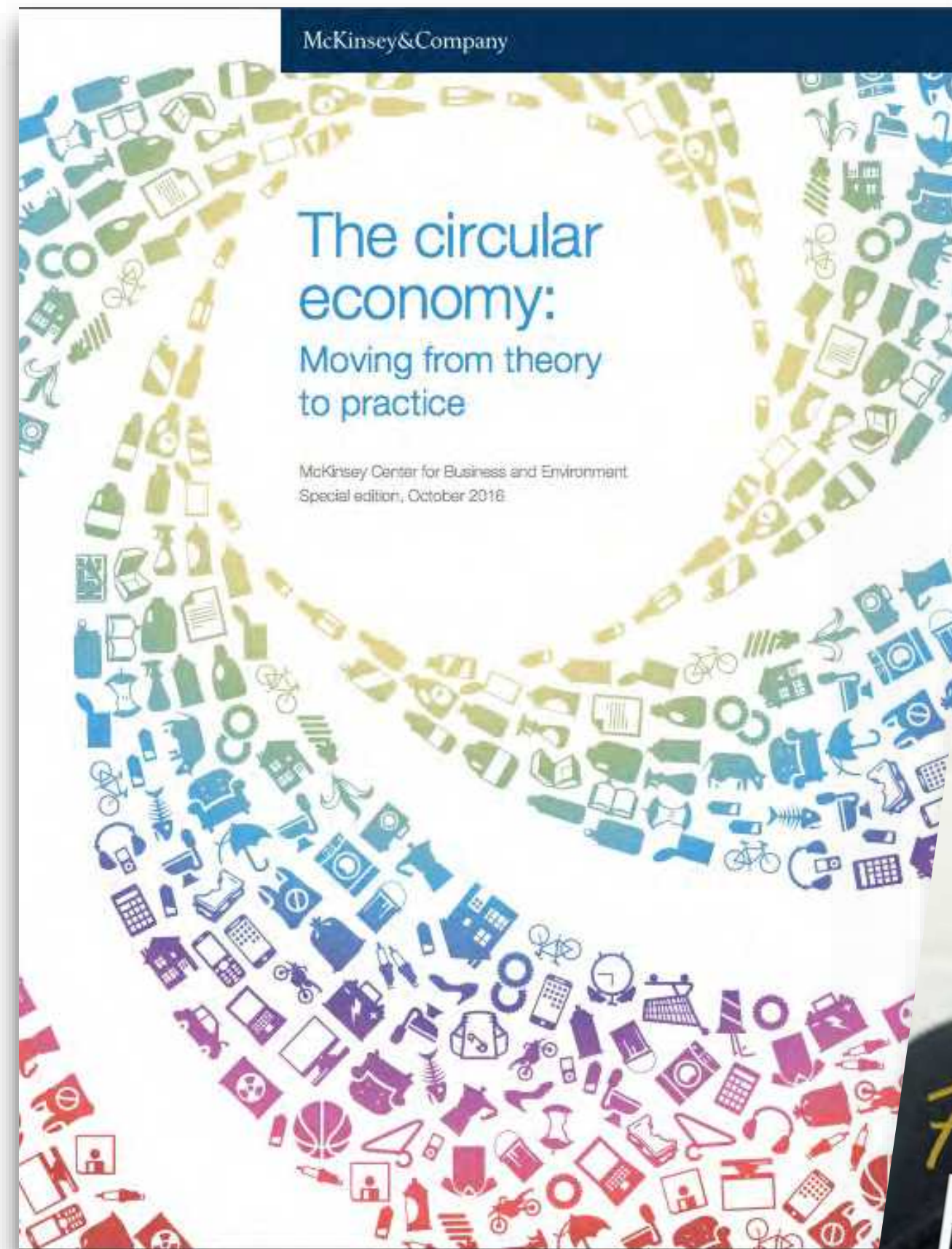


Ekonomin: 1,8 biljoner €
och 18 miljoner nya jobb

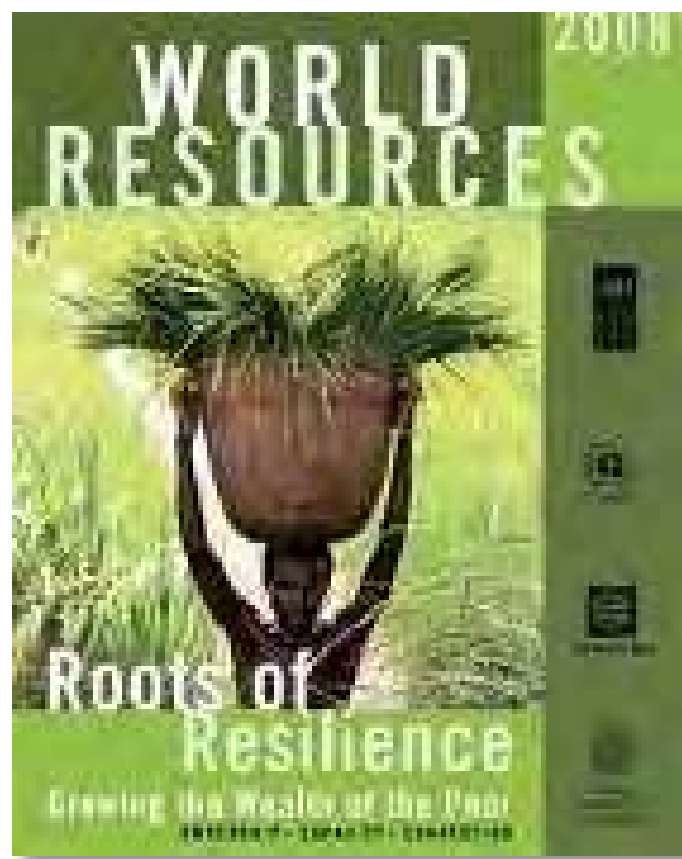
CIRCULAR ECONOMY



LINEAR ECONOMY



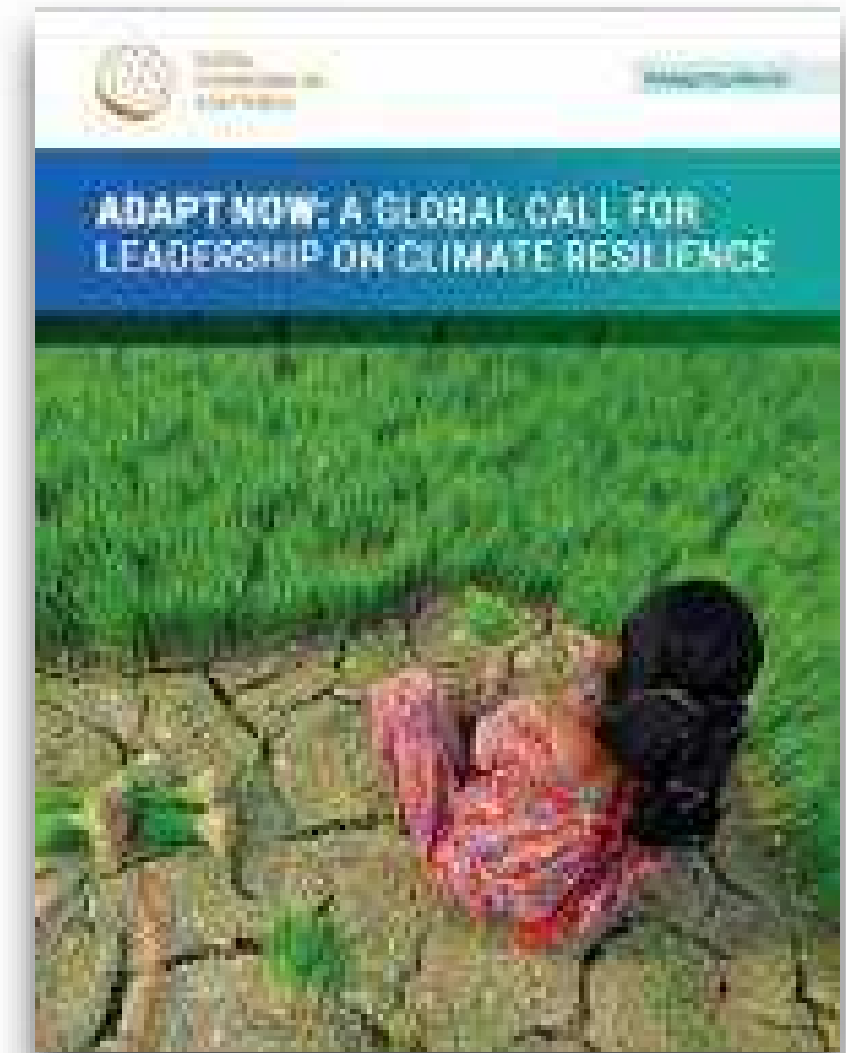
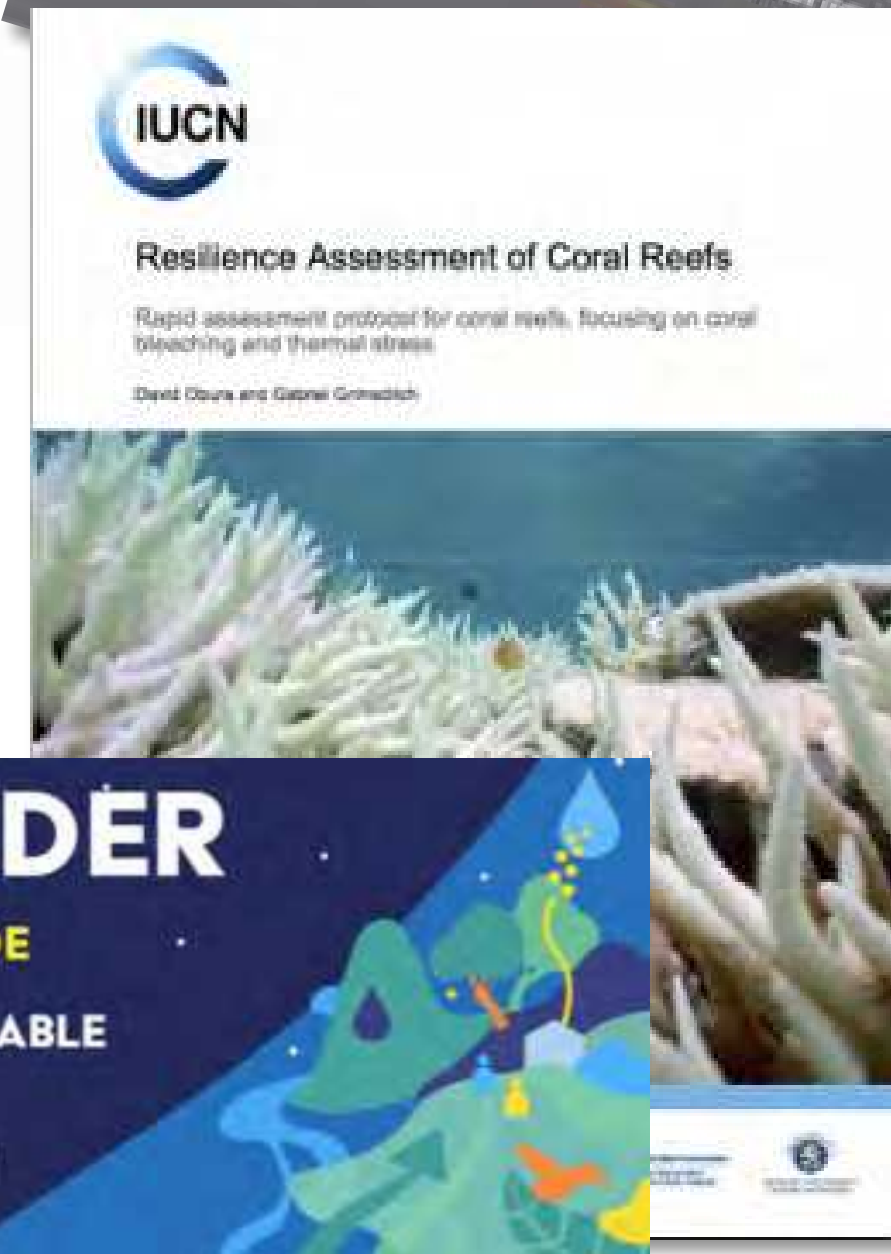
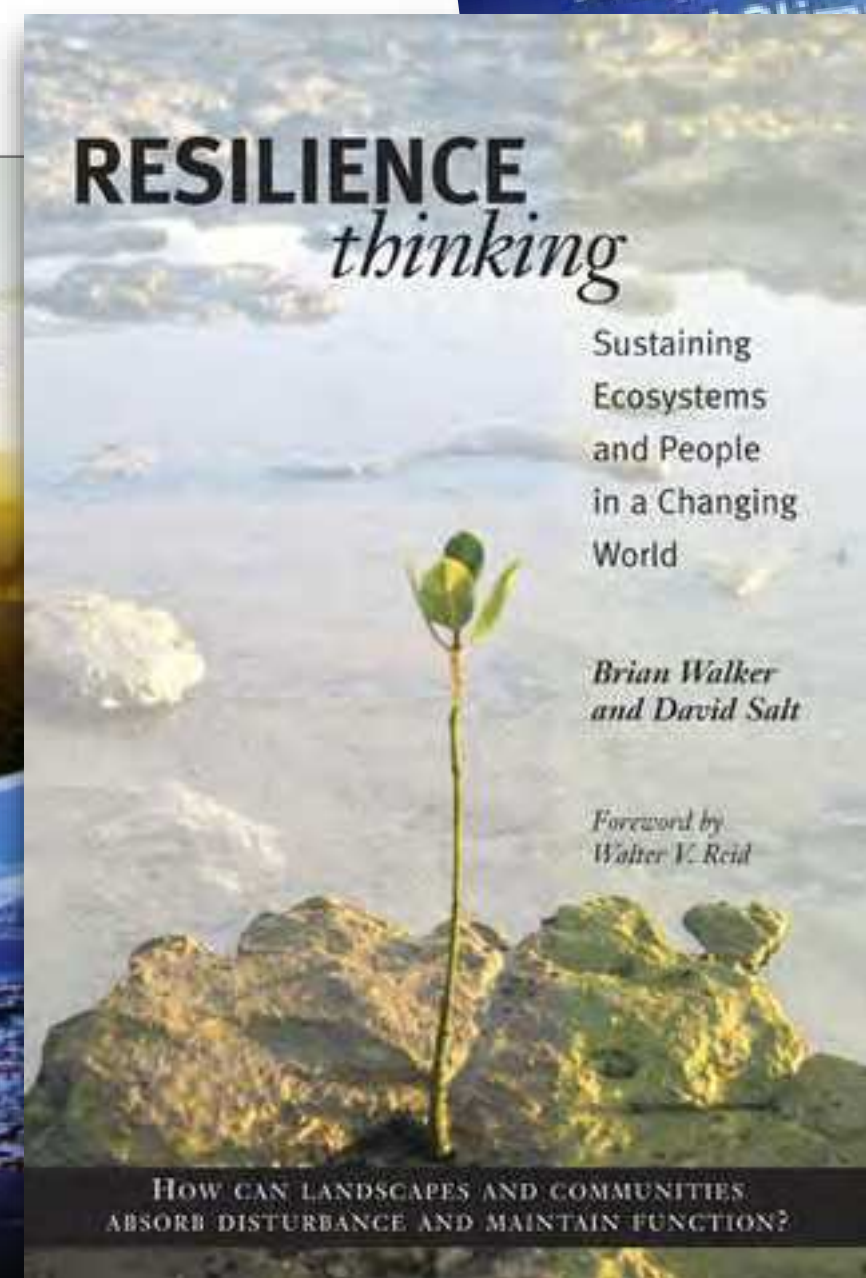
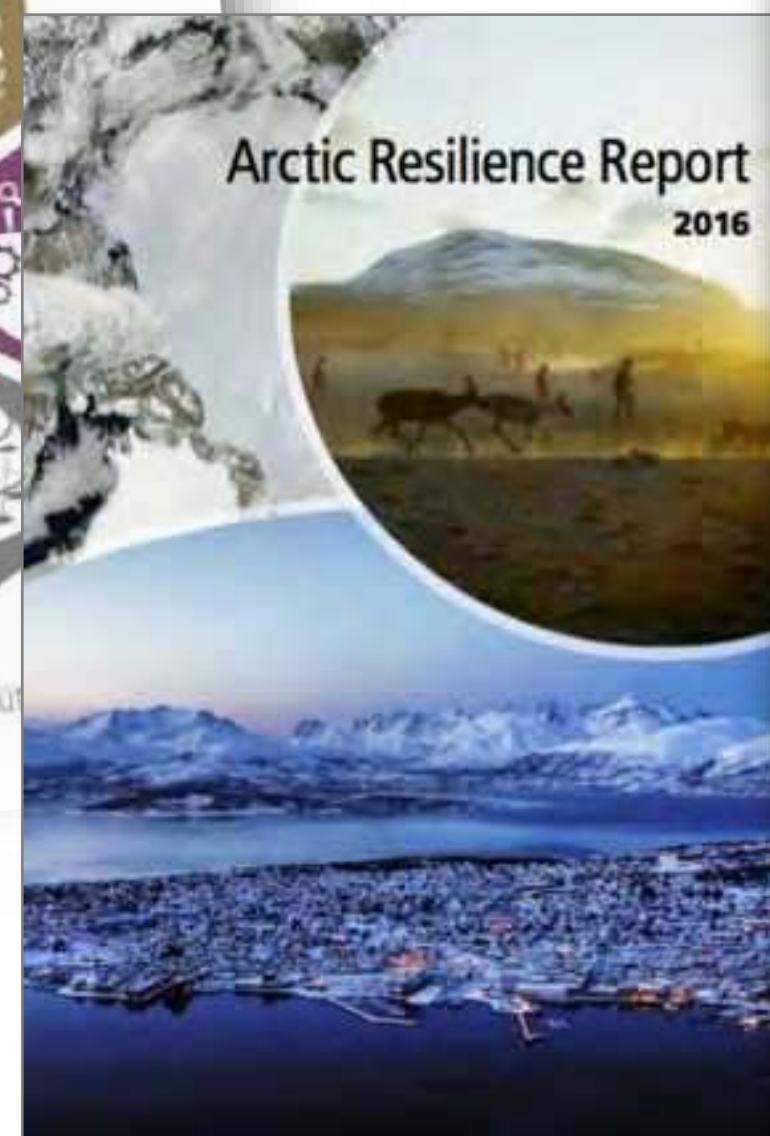
Källa: McKinsey, ILO

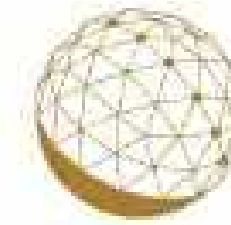


TARGET 13.1



STRENGTHEN RESILIENCE AND ADAPTIVE CAPACITY TO CLIMATE RELATED DISASTERS





GLOBAL
COMMISSION ON
ADAPTATION

#AdaptOurWorld

ADAPT NOW: A GLOBAL CALL FOR LEADERSHIP ON CLIMATE RESILIENCE



”Investing \$1.8 trillion in climate adaptation between 2020 and 2030 can yield \$7.1 trillion in net benefits.”

5) Den unga generationen
kräver förändring – deal with it!



270 forskare: "Kraven på snabb och rättvis omställning berättigad"

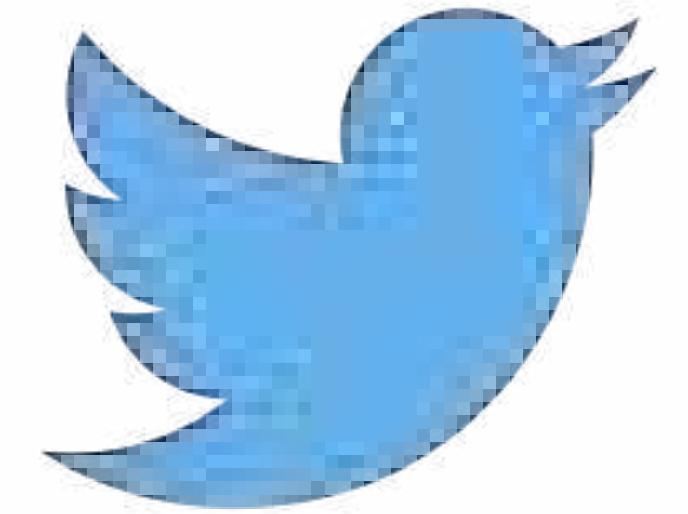
Bild: Johan Nilsson/TT

Fem saker

1. Vi börjar slå i taket för hur mycket planeten klarar av
2. Detta förändrar radikalt den globala riskbilden
3. Vi själva mår i längden inte bättre än vår planet
4. Lösningar finns och de lönar sig
5. De unga kräver förändring – deal with it!



Twitter-sammanfattning



”Mer än hälften av våra utsläpp av #CO2 har skett sedan #Seinfeldt började 1989”, säger @FredrikMoberg från @Albaeco & @sthlmresilience

”Vårt sätt att hantera planeten slår allt mer tillbaka på oss själva, bland annat genom sämre hälsa och fler #naturkatastrofer”, säger @FredrikMoberg

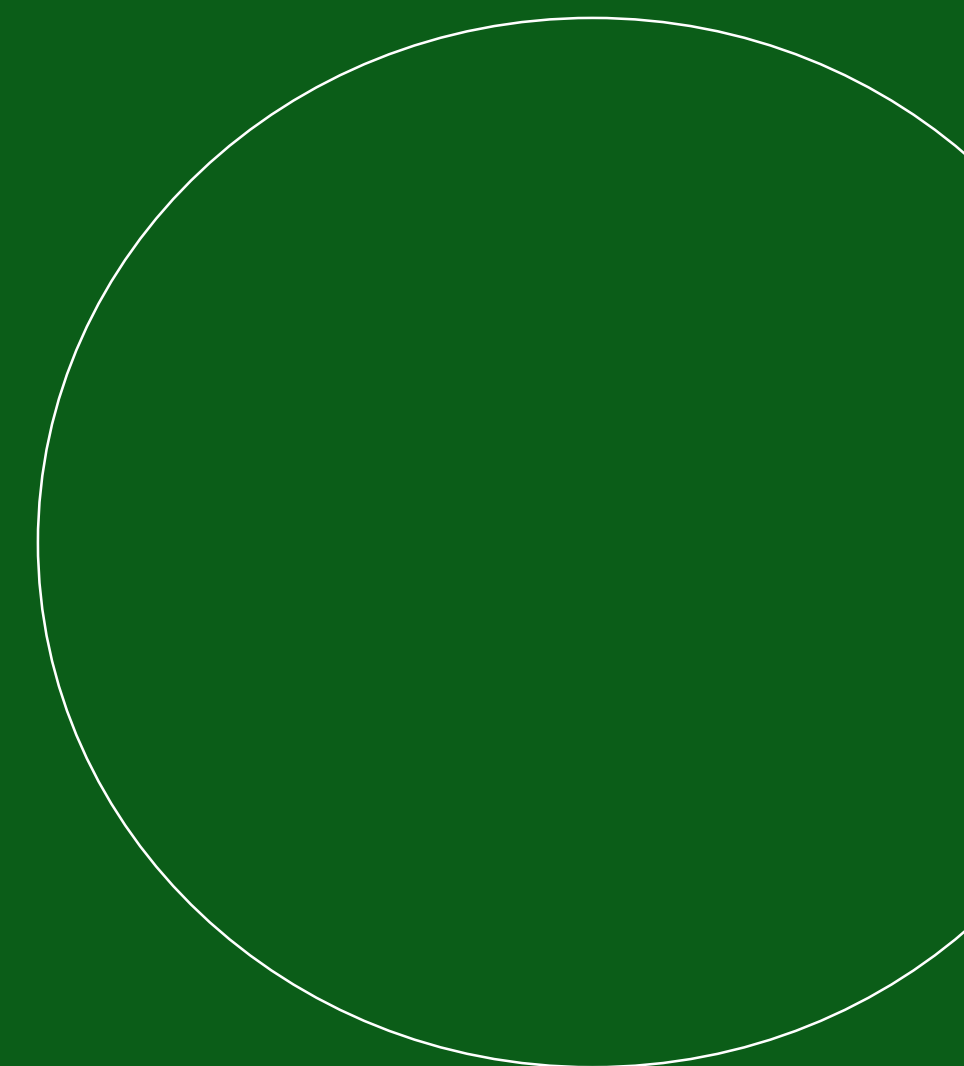
”Lösningarna finns och är redan lönsamma. Sol- och vindenergi är t.ex. på väg att bli billigare än fossila bränslen”, säger @FredrikMoberg

”Hög tid för försäkringsbolag att räkna med naturen och lägga ordet #resiliens på minnet”, säger @FredrikMoberg på Livförsäkringskonferens @SCOR_SE

Tack!

Email: fredrik@albaeco.com

Twitter: [@FredrikMoberg](https://twitter.com/FredrikMoberg)



SCOR Sweden Re:s Nordic Life Insurance Conference
October 11th 2019

CLOSING

Svein Børre Solvang


This is our Purpose today



 Extending
Protection & Peace of Mind

 Making Life insurance
Relevant & Desirable

 Improving
Health & Well-Being

 Expanding
Risk Knowledge

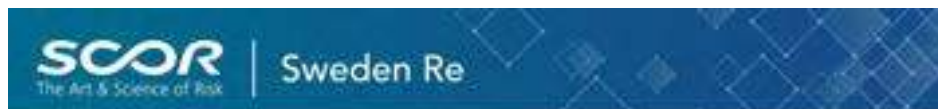
 Inspiring
Purpose-Driven Communities

 Keeping our
Financial Promises



Münchenbryggeriet 12 oktober 2018

- Tackmail till deltagarna
- Utvärderingen gick till 189 personer
- Enkät på 8 frågor med fritext



Vad tyckte du?

Stort tack för ditt deltagande i SCOR Sweden Res Livförsäkringskonferens 2018. Jag hoppas att du uppskattade årets program och innehåll.

Dina synpunkter är viktiga för mig! Därför skulle jag vara tacksam om du kunde ta någon minut och ge oss feedback på konferensen och dess innehåll.

Vänligen klicka här för utvärderingen

Vi ber om ursäkt om du stördes av ljudet från personalen som talade för våra engelska gäster. Vi har tagit upp det i vår återkoppling till Münchenbryggeriet för att det inte ska upprepas.

En ny utgåva av vår tidning ReNews kommer släppas ut till dig om några veckor, så håll utkik i din mailorg. Presentationerna från dagen kan du hitta nu hitta på vår hemsida (www.swedenre.se) under publikationer.

Bästa hälsningar
Svein Børre Solvang, VD

Utvärdering Livförsäkringskonferens 2018

Kära konferensdeltagare, tack för ditt deltagande i årets konferens!

Vänligen svara i skala 1-5 där 1 anger dålig och 5 anger jättebra.

1. Introduktion och sammanfattning - Svein Børre Solvang, VD SCOR Sweden Re

Hur bra var detta föredrag?

1 2 3 4 5

Övriga kommentarer:

2. Gavin Maguire och Jussi Räsänen - Wearables and wellness plattformar - a practical example

Hur bra var detta föredrag?

1 2 3 4 5

Skulle du vara intresserad av ett liknande samarbete? (Om ja, vänligen ange dina kontaktuppgifter nedan.)

Ja Nej

Övriga kommentarer / kontaktuppgifter:

3. Torve Ulvmoedahl - Politik och journalistik i alternativens tid

Hur bra var detta föredrag?

1 2 3 4 5

Övriga kommentarer:

4. Arne Ljungqvist - Dopning som en folkhälsofråga

Hur bra var detta föredrag?



Feedback on the 2018 Conference

- **Translation service did not work well, with translators sitting next to me**
- I missed Pär Johansson speech but heard from others he was excellent
- Very interesting around wearable/wellness and some great speakers
- Arne Ljungqvist what a king
- **Arne Ljungqvist spend to much time on historical facts**
- **The Actuaries speaking need to learn how to communicate with normal individuals**
- Pär Johansson absolutely brilliant
- **No fruit in the breaks**
- Fantastic place to be and to meet all colleagues and interesting people



Feedback on the 2018 Conference

- The food had heavily improved since last year
- **Went over time this year again....and the food was a disaster**
- The best conference ever
- **We were asked by the staff to leave the lunch despite a lot of wine left**
- Beekast YES
- **The CEO finally got some experience doing this but not focused at all**
- **The CEO talks to much and is boring**
- **The CEO was average**
- The CEO is nice to listen to and informative



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Please give us your valuable feedback also in 2019

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LUNCH



This is our Purpose today



 Extending
Protection & Peace of Mind

 Making Life insurance
Relevant & Desirable

 Improving
Health & Well-Being

 Expanding
Risk Knowledge

 Inspiring
Purpose-Driven Communities

 Keeping our
Financial Promises

