

Kva er sammenhengen mellom helse, miljø og klima?

Ågot Aakra, områdedirektør
Folkehelseinstituttet, Klima og miljø
24.08.22



Betre helse for alle

FHIs tre hovedoppgåver:

Kunnskap

Beredskap

Infrastruktur

Stadig nye utfordringar, nye sjansar

Utfordringane

- Klimaendringar
 - Redusert naturmangfald
 - Redusert dyrkbart areal
 - Endra flyt i biogeokjemiske prosessar
 - Forureining (luft, jord, vatn)
 - Forbruk
-
- ✓ Komplekse og samanhengande (gjenstridige)
(wicked)
 - ✓ Store verknader på helse og livskvalitet på kort og lang sikt



UNITED
NATIONS



United Nations
Environment Assembly of the
United Nations Environment
Programme

United Nations Environment Assembly of the
United Nations Environment Programme
Fifth session
Nairobi (hybrid), 22 and 23 February 2021
and 28 February–2 March 2022

Resolution adopted by the United Nations Environment
Assembly on 2 March 2022

5/14. End plastic pollution: towards an international legally binding instrument

The United Nations Environment Assembly.

Noting with concern that the high and rapidly increasing levels of plastic pollution represent a serious environmental problem at a global scale, negatively impacting the environmental, social and economic dimensions of sustainable development,

Recognizing that plastic pollution includes microplastics,

Noting with concern the specific impact of plastic pollution on the marine environment,

Noting that plastic pollution, in marine and other environments, can be of a transboundary nature and needs to be tackled, together with its impacts, through a full-life-cycle approach, taking into account national circumstances and capabilities,

EP

UNEP/EA.5/Res.14

Distr.: General

7 March 2022

Original: English

EDITORIALS



Call for Emergency Action to Limit Global Temperature Increases, Restore Biodiversity, and Protect Health

The United Nations General Assembly in September 2021 will bring countries together at a critical time for marshalling collective action to tackle the global environmental crisis. They will meet again at the biodiversity summit in Kunming, China, and at the climate conference (COP26) in Glasgow, United Kingdom. Ahead of these pivotal meetings, we—the editors of health journals worldwide—call for urgent action to keep average global temperature increases below 1.5°C, halt the destruction of nature, and protect health.

Health is already being harmed by global temperature increases and the destruction of the natural world, a state of affairs health professionals have been bringing attention to for decades.¹ The science is unequivocal: a global increase of 1.5°C above the pre-industrial average and the continued loss of biodiversity risk catastrophic harm to health that will be impossible to reverse.^{2,3} Despite the world's necessary preoccupation with Covid-19, we cannot wait for the pandemic to pass to rapidly reduce emissions.

Reflecting the severity of the moment, this editorial appears in health journals across the world. We are united in recognizing that only fundamental and equitable changes to societies will reverse our current trajectory.

The risks to health of increases above 1.5°C are now well established.² Indeed, no temperature rise is "safe." In the past 20 years, heat-related mortality among people over 65 years of age has increased by more than 50%.⁴ Higher temperatures have brought increased dehydration and renal function loss, dermatological malignancies, tropical infections, adverse mental health outcomes, pregnancy complications, allergies, and cardiovascular and pulmonary morbidity and mortality.^{5,6} Harms disproportionately affect the most vulnerable, including children, older popu-

GLOBAL TARGETS ARE NOT ENOUGH

Encouragingly, many governments, financial institutions, and businesses are setting targets to reach net-zero emissions, including targets for 2030. The cost of renewable energy is dropping rapidly. Many countries are aiming to protect at least 30% of the world's land and oceans by 2030.¹¹

The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future

Marina Romanello, Alice McGushin, Claudia Di Napoli, Paul Drummond, Nick Hughes, Louis Jamart, Harry Kennard, Pete Lampard, Baltazar Solano Rodriguez, Nigel Arnell, Sonja Ayeb-Karlsson, Kristine Belosevic, Wenja Cai, Diamand Campbell-Lendrum, Stuart Capstick, Jonathan Chambers, Lingzhi Chu, Luisa Campi, Carole Dalla, Nilhara Dasandi, Shourou Dasgupta, Michael Davies, Paula Dominguez-Solis, Robert Dubow, Kristie L Ebli, Matthew Ekelman, Paul Ekins, Luis Escobar, Lucien Georgeson, Della Grace, Hilary Graham, Samuel H Gunther, Stella Hartinger, Kehan He, Clare Heaviside, Jeremy Hess, Shih-Che Hsu, Slava Jankin, Marcia P Jimenez, Ilan Kelman, Gregor Kiesewetter, Patrick L Kinney, Tord Kjellstrom, Dominic Kniveton, Jason K W Lee, Bruno Lemke, Yang Liu, Zhao Liu, Melissa Lott, Rachel Lowe, Jaime Martinez-Urtaza, Mark Maslin, Lucy McAllister, Celia McMichael, Zhihu Mi, James Millner, Ketton Minas, Nahid Mohajeri, Maziar Monadi-Lakeh, Karyn Morrissey, Simon Munoz, Kris A Murray, Tara Neville, Maria Nilsson, Nick Obradovich, Maquinna Odhiambo Sewe, Tadj Oreszyn, Matthias Otto, Fereidoon Owfi, Olivia Pearson, David Pencheon, Mahnaz Rabbaninia, Elizabeth Robinson, Joacim Rocklöv, Renée N Salas, Jan C Semenza, Jodi Sherman, Lishua Shi, Marco Springmann, Meisam Tabatabaei, Jonathon Taylor, Joaquin Trinanes, Joy Shumake-Guillemot, Bryan Vu, Fabian Wagner, Paul Wilkinson, Matthew Winning, Mansol Yglesiás, Shihui Zhang, Peng Gong, Hugh Montgomery, Anthony Costello, Ian Hamilton

Executive summary

The Lancet Countdown is an international collaboration that independently monitors the health consequences of a changing climate. Publishing updated, new, and improved indicators each year, the Lancet Countdown represents the consensus of leading researchers from 43 academic institutions and UN agencies. The 44 indicators of this report expose an unabated rise in the health impacts of climate change and the current health consequences of the delayed and inconsistent response of countries around the globe—providing a clear imperative for accelerated action that puts the health of people and planet above all else.

This 2021 report coincides with the UN Framework Convention on Climate Change 26th Conference of the Parties (COP26), at which countries are facing pressure to realize the ambition of the Paris Agreement to keep the global average temperature rise to 1.5°C and to mobilize the financial resources required for all countries to have an effective climate response. These negotiations unfold in the context of the COVID-19 pandemic—a global health crisis that has claimed millions of lives, affected livelihoods and communities around the globe, and exposed deep fissures and inequities in the world's capacity to cope with, and respond to, health emergencies. Yet, in its response to both crises, the world is faced with an unprecedented opportunity to ensure a healthy future for all.

Deepening inequities in a warming world

Record temperatures in 2020 resulted in a new high of 3.1 billion more person-days of heatwave exposure among people older than 65 years and 626 million more person-days affecting children younger than 1 year, compared with the annual average for the 1986–2005 baseline (indicator 1.1.2). Looking to 2021, people older than 65 years or younger than 1 year, along with people facing social disadvantages, were the most affected by the record-breaking temperatures of over 40°C in the Pacific Northwest areas of the USA and Canada in June, 2021—an event that would have been almost impossible without

human-caused climate change. Although the exact number will not be known for several months, hundreds of people have died prematurely from the heat. Furthermore, populations in countries with low and medium levels of UN-defined human development index (HDI) have had the biggest increase in heat vulnerability during the past 30 years, with risks to their health further exacerbated by the low availability of cooling mechanisms and urban green space (indicators 1.1.1, 2.3.2, and 2.3.3).

Agricultural workers in countries with low and medium HDI were among the worst affected by exposure to extreme temperatures, bearing almost half of the 295 billion potential work hours lost due to heat in 2020 (indicator 1.1.4). These lost work hours could have devastating economic consequences to these already vulnerable workers—data in this year's report shows that the average potential earnings lost in countries in the low HDI group were equivalent to 4–8% of the national gross domestic product (indicator 4.1.3).

Through these effects, rising average temperatures, and altered rainfall patterns, climate change is beginning to reverse years of progress in tackling the food and water insecurity that still affects the most underserved populations around the world, denying them an essential aspect of good health. During any given month in 2020, up to 19% of the global land surface was affected by extreme drought; a value that had not exceeded 13% between 1950 and 1999 (indicator 1.2.2). In parallel with drought, warm temperatures are affecting the yield potential of the world's major staple crops—a 6–9% reduction for maize; 3–6% for winter wheat; 5–4% for soybean; and 1–8% for rice in 2020, relative to 1981–2010 (indicator 1.4.1)—exposing the rising risk of food insecurity.

Adding to these health hazards, the changing environmental conditions are also increasing the suitability for the transmission of many water-borne, air-borne, food-borne, and vector-borne pathogens. Although socioeconomic development, public health interventions, and advances in medicine have reduced the global

Review



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See [Corresponding author's original manuscript](#) if available. This version has been corrected. The corrected version first appeared at [thelancet.com](https://www.thelancet.com) on December 5, 2021.
See Editorial page 1541
For the Chinese translation of the Executive Summary see Online for appendix 1
For the French translation of the Executive Summary see Online for appendix 2
For the German translation of the Executive Summary see Online for appendix 3
For the Spanish translation of the Executive Summary see Online for appendix 4
Institute for Global Health (M Romanello PhD, A McGushin MSc, L Jamart MSc, Prof I Kelman PhD, Prof A Costelloe PhD), Department of Sustainable Resources (P Drummond MSc, N Hughes PhD, C Dublin PhD, Prof P Ekins PhD, M Winning PhD), UCL Energy Institute (H Kennard PhD, B Solano Rodriguez MSc, S Gaskins MSc), UCL School of Sustainable Construction (T Oreszyn PhD, Prof I Hamilton PhD), Institute for Environmental Design and Engineering (Prof M Davies PhD, C Heaviside PhD), N Mohajeri PhD), Department of Geography (L Georgeson PhD, S Gaskins MSc), The Bartlett School of Sustainable

12/2021 – ÅRGANG 141

WWW.TIDSSKRIFTET.NO

Tidsskriftet
DEN NORSKE LEGEFORENING

Klimakrisen

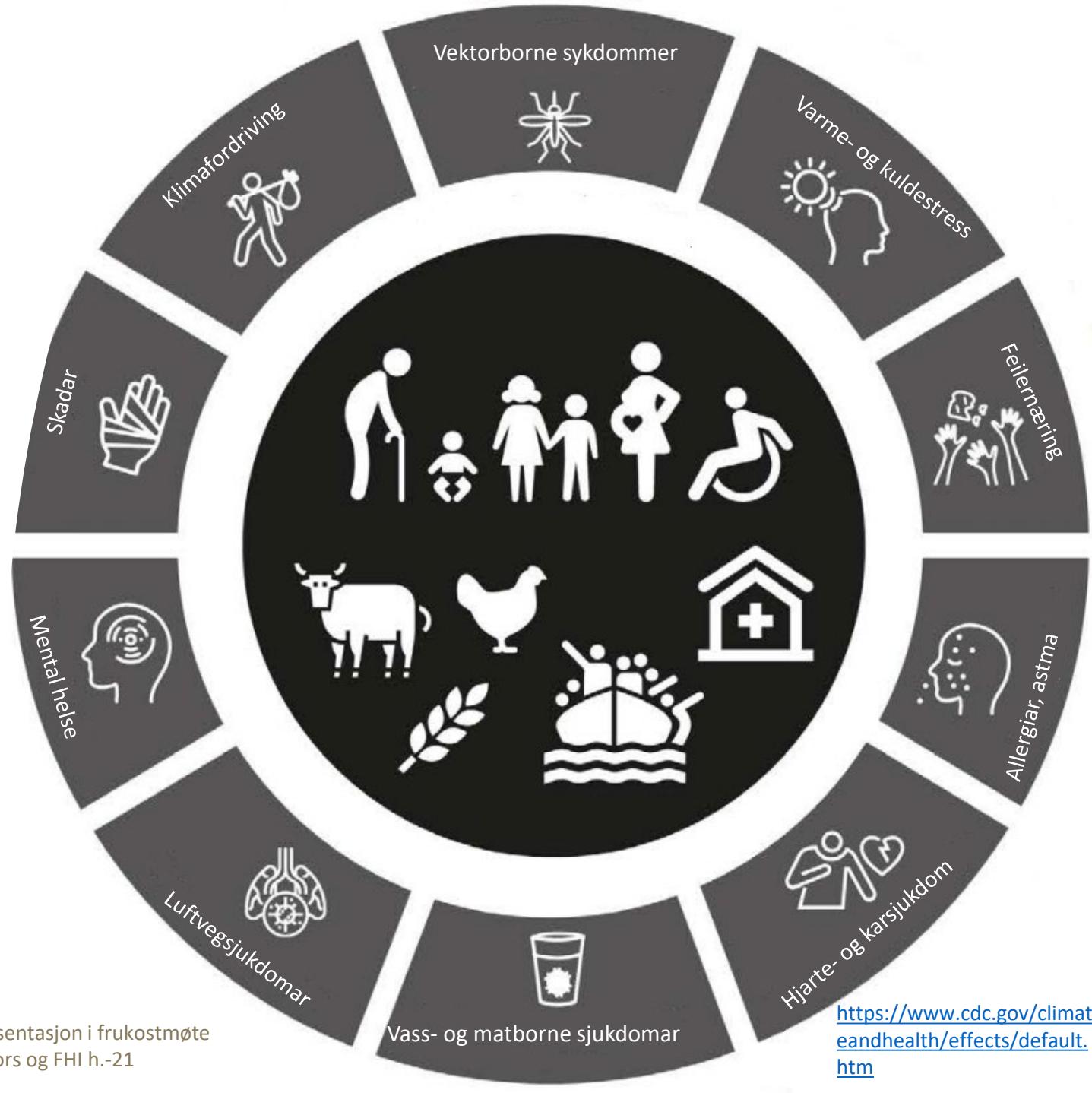
Rike land må gjøre mye mer – og mye raskere
SIDE 1138, 1141, 1152, 1156, 1164

Helse, politikk og stortingsvalg
SIDE 1148, 1149, 1152, 1156, 1164

Moderne avansert kreftbehandling
SIDE 1142, 1190, 1195, 1199, 1202

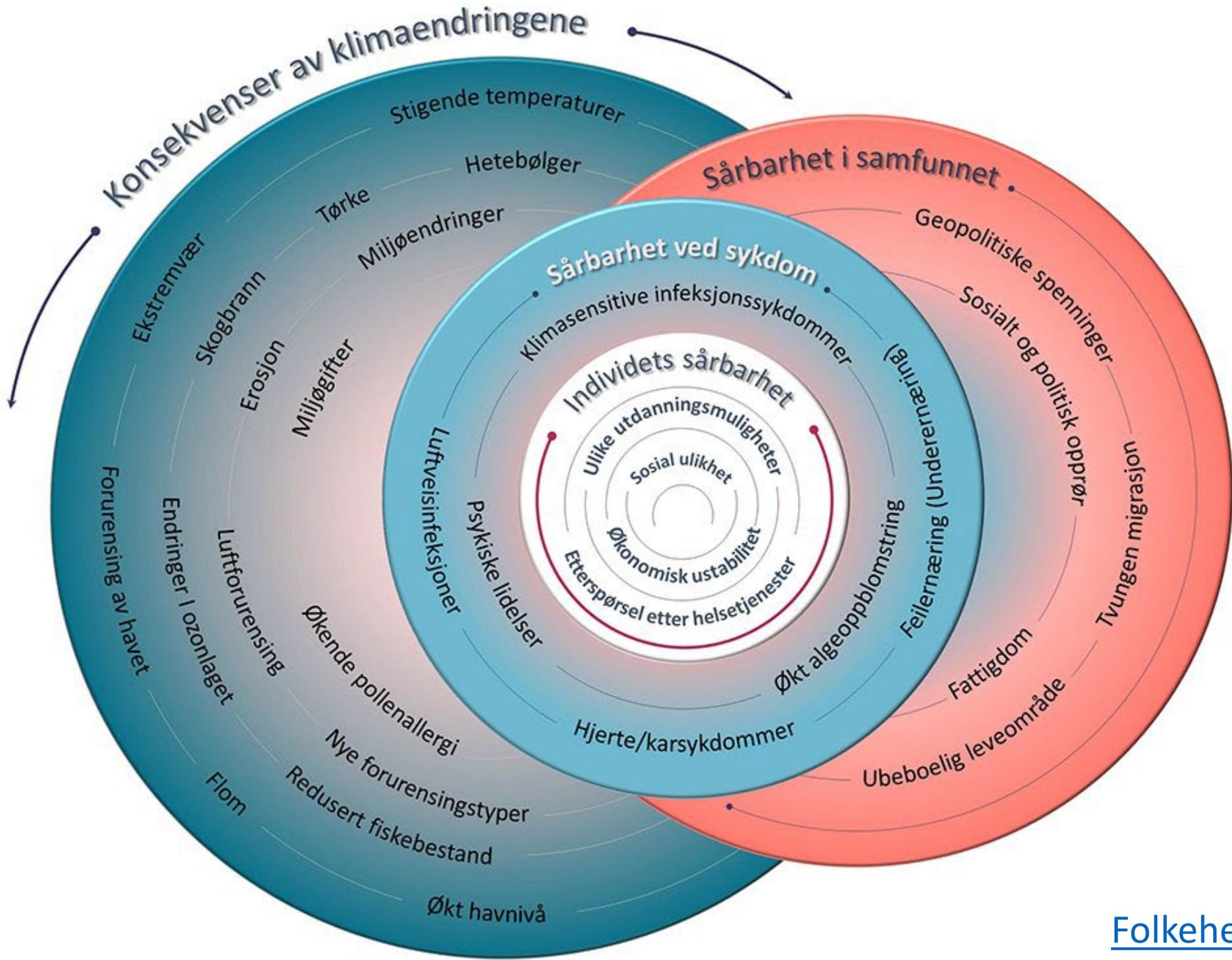
Frå farar til helsekonsekvensar

- Ekstremvîr og –temperaturar som vi merkar på kroppen
- Endringar i vatn- og matkvalitet som verkar på helsa
- Endra risiko for vektor-, vatn- og matborne sykdommer
- Mental helse
-



Figur kopiert frå presentasjon i frukostmøte
arrangert av Røde kors og FHI h.-21

<https://www.cdc.gov/climateandhealth/effects/default.htm>



Helse bidrar til løysingar
Berekraftig kosthald og matsystem



Mat og kosthald: Utfordring for helse klima og natur, globalt og nasjonalt

- Økosystema

- Jordhelse
- Biologisk mangfold

- Klima

- Folkehelse

- Feilernærings (frå underernærings og manglar til overvekt og fedme)
- Kosthaldet vårt er ikkje i samsvar med nasjonale tilrådingar, og «matmiljøet» sikrar ikkje at dei sunnaste alternativa er dei enklaste. Kosthald i følgjer tilrådingar, vil redusera miljøavtrykk frå matsystema vesentleg («Farm to fork»)
- Nye nordiske kosttilrådingar er under arbeid,

- Matkast

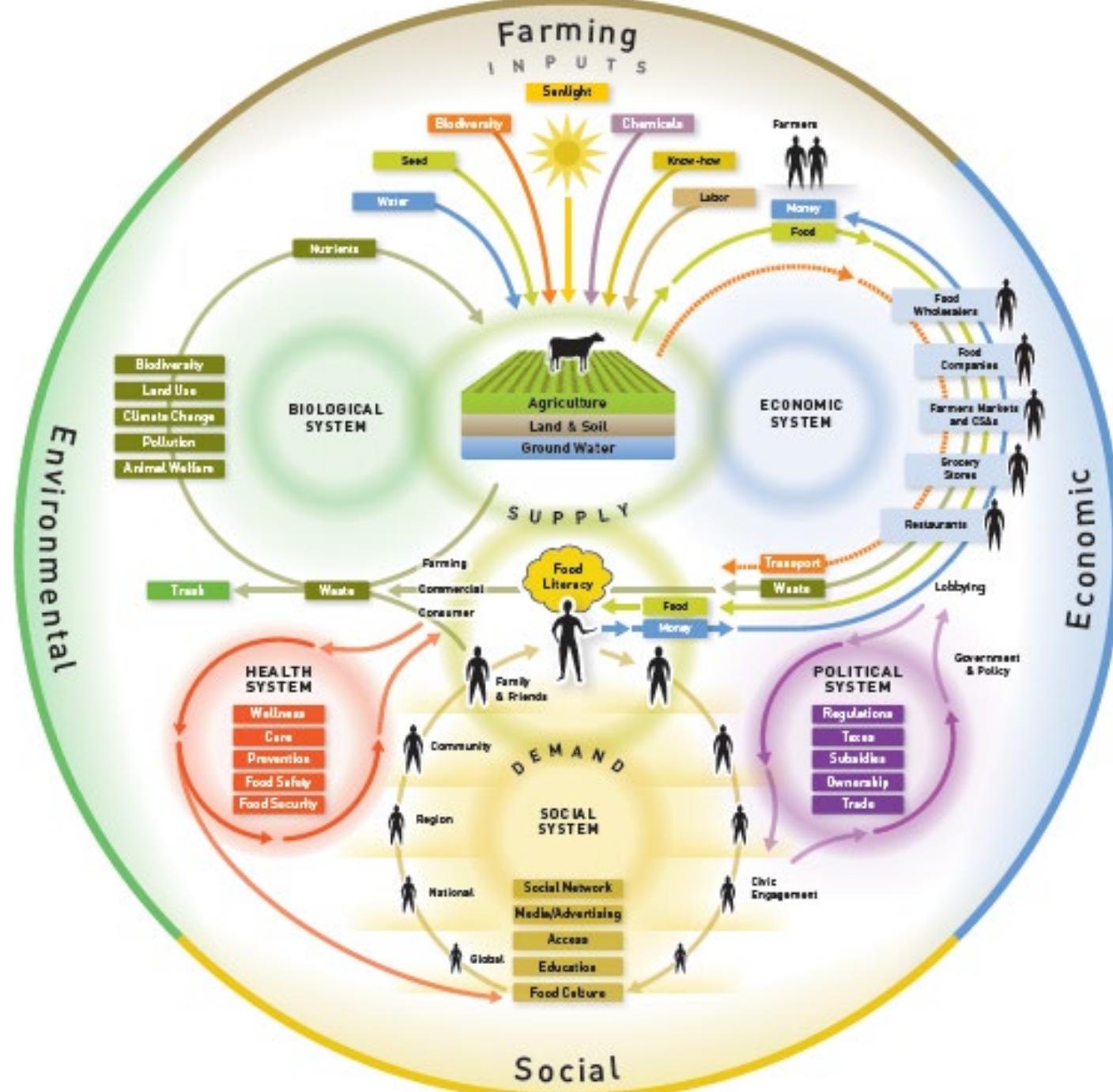


Matsystemet

- alle aktivitetar som har med produksjon, prosessering, transport, konsum og avfallshandtering av mat

Stort og komplekst!

- Matsystemet må gå i meir berekraftig retning, frå jord og fjord til bord og tilbake til jord
 - *Korleis* maten blir produsert
 - *Kva folk et*



From : <https://www.nourishlife.org/>

Sjå også: matdugnaden.no

Senter for berekraftig kosthald

f.o.m 2023

'Det nasjonale kunnskapssenteret som banar veg mot eit meir berekraftig kosthald gjennom innovativ overvaking og framifrå forsking'

Visjon: Betre helse for alle gjennom eit sunt, trygt og berekraftig kosthald



Innovativt program

Utvikla framtidsretta nasjonalt program for overvaking av kosthald og eksponering for miljøgifter



Ny kunnskap

Skal svara på:

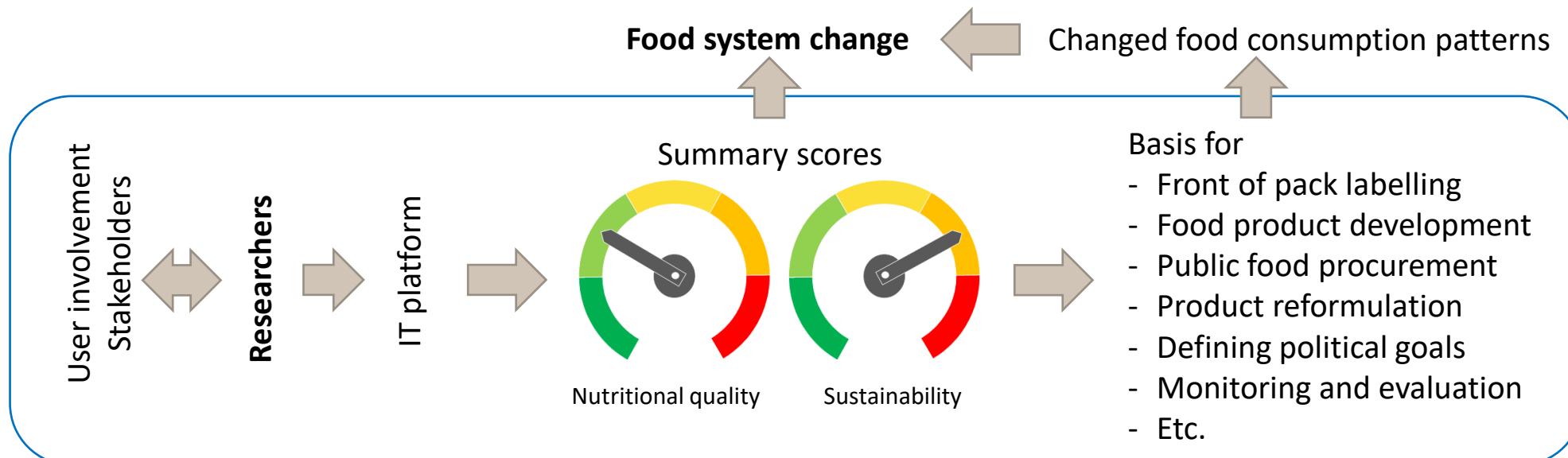
- Korleis endringar i klima og miljø, samt berekraftstiltak, påverkar det norske kosthaldet, inkludert inntaket av næringsstoff og miljøgifter
- Korleis endra kosthald påverkar helse
- Kva som er viktige drivrarar, barrierar og tiltak for eit berekraftig kosthald



God formidling

Skal formidla ny kunnskap om berekraftig kosthold og helse på god måte til folket, styresmakter og aktørar i det norske matsystemet

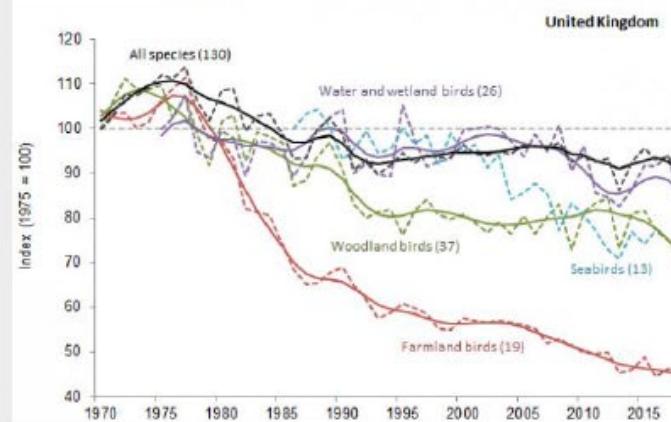
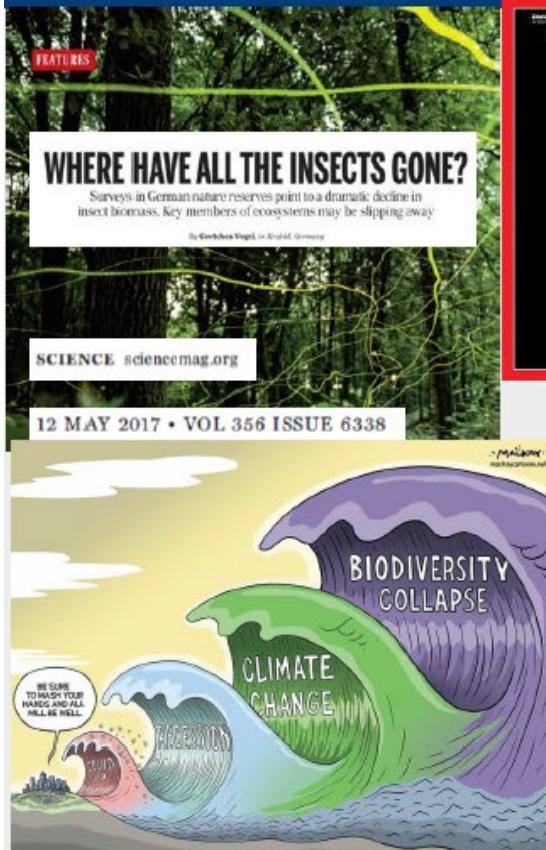
'Developing tools for food system transformation,
including food summary scores for nutrition and
sustainability'



Helse bidrar til løysingar
Luftkvalitet, naturmangfald,
naturbaserte løysingar



Naturmangfaldet minkar



nature

NEWS | 06 May 2019 | Update 06 May 2019

Humans are driving one million species to extinction



The Human Drivers of World's Biodiversity Crisis

A report released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) shows that many human-caused drivers are destroying plant and animal species worldwide.

DRIVERS

- INDIRECT DRIVERS
 - DEMOCRATIC AND SOCIOCULTURAL
 - ECONOMIC AND TECHNOLOGICAL
 - INSTITUTIONS AND GOVERNANCE
 - CONFLICTS AND FRONTERIES

EXAMPLES OF DECLINES IN NATURE

- ECOSYSTEM EXTENT AND CONDITION
 - 47%
Natural ecosystems have declined by 47% on average relative to their earliest estimated states.
- SPECIES EXTINCTION RISK
 - 25%
Approximately 25% of species are already threatened with extinction in most animal and plant groups studied.
- ECOLOGICAL COMMUNITIES
 - 23%
Biotic integrity—the abundance of naturally present species—has declined by 23% on average in terrestrial communities.*
- BIO MASS AND SPECIES ABUNDANCE
 - 82%
The global biomass of wild animals has fallen by 82%. Indicators of vertebrate abundance have declined rapidly since 1970.
- NATURE FOR INDIGENOUS PEOPLES AND LOCAL COMMUNITIES
 - 72%
72% of indicators developed by indigenous peoples and local communities show ongoing deterioration of elements of nature important to them.

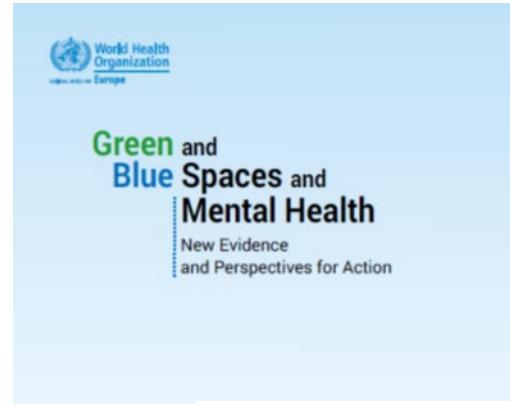
SOURCE: IPBES

*Intergovernmental Panel on Climate Change

InsideClimate News

Naturen er bra for helsa

- Betre humør
- Gir større kjensle av tilknyting
- Meining og føremål
- Fremmar miljøvenleg handling
- Bu nær naturen, sjå på naturen, arbeida i naturen
- Alle grøntarealtypar og - eigenskaper har vist seg å ha positive effektar på psykisk helse og velvere



Bowler et al. BMC Public Health 2010, 10:456
<http://www.biomedcentral.com/1471-2458/10/456>

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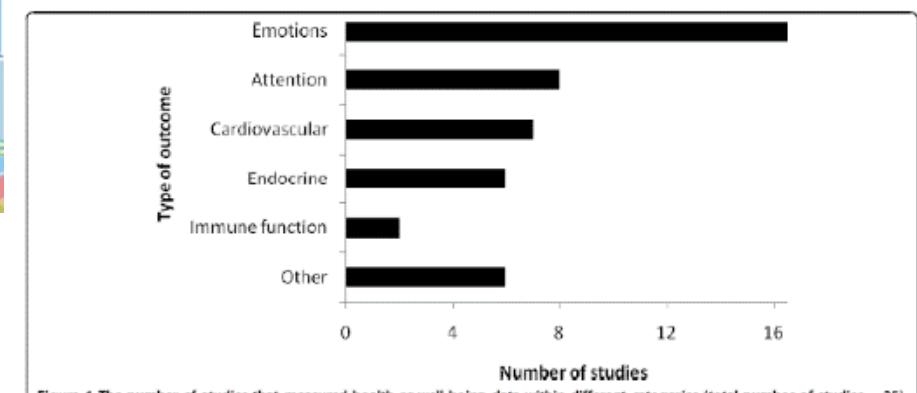
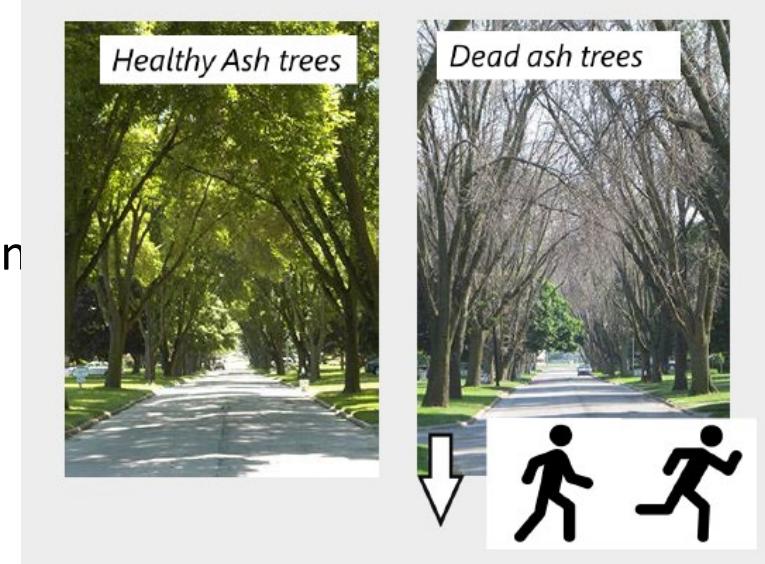


Figure 1 The number of studies that measured health or well-being data within different categories (total number of studies = 25). 'Emotions' included self-reported emotions based on questionnaire scores; 'Attention' included tests of attention (e.g. Digit Span test) and symptoms of ADD/ADHD; 'Cardiovascular' included blood pressure and pulse; 'Endocrine' included measurements of hormone concentrations; 'Immune function' included measurements of factors involved in immune function and 'Others' are detailed within the text.

Natur og naturmangfald reduserer helseskade

- Reduserer eksponering for luftforureining
 - Luftforureining er lågare i grøntområde
 - Vegetasjon fjerner luftforurensninger
- Redusert eksponering for varmestress
 - Vegetasjon absorberer solstråling og kjøling gjennom transpirasjon
- Reduserer eksponering for støy:
 - Vegetasjon kan absorbera og avleia støy
 - Grøn infrastruktur kan redusera støynivået vesentleg
- Vegetasjon fremmar fysisk aktivitet



*Sjå t.d. Markevych et al (2017) Environmental Research
Jones (2016) Ecological Econ.*

Korleis naturbaserte løysingar kan dempa klimakonsekvensar

- Handtering av styrregn og overvatn
- Demping av «Urban Heat Island»-effekt (komfort)
- Energisparing
- Fangar opp svevestøv
- Bidrar til å redusera naturtap
- Leveområde med høgare livskvalitet
- Dempa støy, betre lydmiljø



Foto v/David V. Brasfield

Helse bidrar til løysingar: COP26-helseprogrammet, norske plikter



Noreg har klimaplikter på helsefeltet

-helseministernes klimainitiativ: Oppfølging av COP26-helseprogrammet

- Klimaendringane er den største helsetrusselen verda står overfor
 - Noreg nokså godt rusta, men endringane VIL få helsekonsekvensar også her
- Tilslutning til [klimakonferansens helseprogram](#)
- Etablera vegkart (strategi) som gir:
 - retninga mot berekraftig og lågutslepp-helsesektor innan 2050
 - klimanøytral drift i helseforetaka innan 2045, i tråd med klimasatsinga i regionale helseforetak.
- Mål om kutt på 55 prosent av norske klimagassutslepp, målt mot 1990, innan 2030.
 - Helsesektoren stod for ca 5 % av utsleppa (jordbruk: 4,5%)
- Norsk næringsliv og offentleg forvaltning, inkludert sjukehusa, har lenge arbeidd med å skapa medvit om eigne utslipp og for å redusere karbonavtrykket.
 - Klimainitiativet bygger på godt og alt påbegynt arbeid i sektoren.

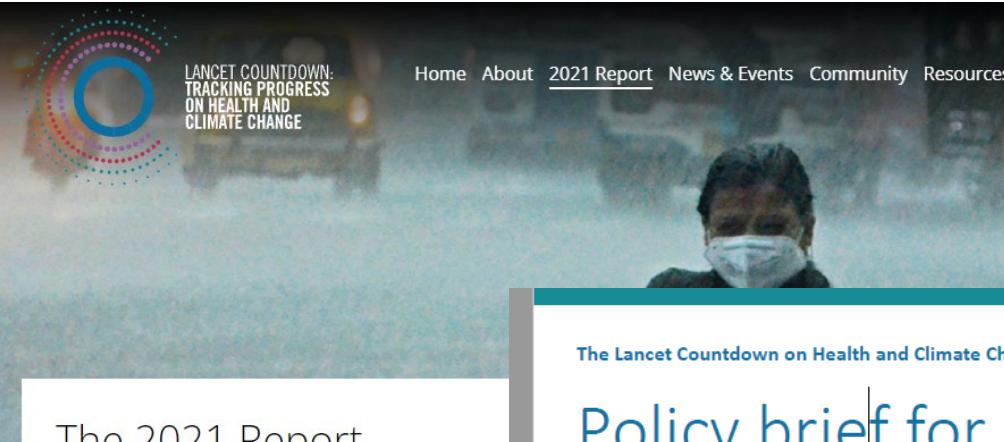
Kva er Noregs klimaplikter på helsefeltet?

- Nasjonal analyse av sårbarhet og tilpassingsbehov som knyter seg til klimaendringar og helse (i 2022)
- Utvida evaluering av status for klimagassutslipp frå helse-og omsorgssektoren
- Veikart som skal gi retning mot berekraftig lågutslepps helse-og omsorgssektor innen 2050, utarbeidd i samarbeid mellom stat, kommunar og relevante aktører

Takk for meg!

Agot.Aakra@fhi.no





The 2021 Report

People in every region of the world are increasingly seeing trends seen in previous Lancet Countdown Reports around health and social inequities—the 2021 report gives a more detailed analysis of these trends and what can be done about them.

3 forslag

1. Helsestyresmaktene, saman med NVE og DSB, bør utvikla offentlege risikoanalysar som viser koplingane mellom klimaendringer og fysisk og psykisk helse.
2. Helseberedskap og beredskapsplanar må tydelegere ta omsyn til hendingar som skuldast klimaendringar og naturøydelegging, og bør vera koordinert av HOD
3. Media bør løfta og formidla klimaendringar som folkehelsetrussel.



Meld. St. 40

(2020–2021)
Melding til Stortinget

Mål med mening

Norges handlingsplan for å nå bærekraftsmålene innen 2030



Meld. St. 19

(2018–2019)
Melding til Stortinget

Folkehelsemeldinga

Gode liv i eit trygt samfunn



Meld. St. 41

(2016–2017)
Melding til Stortinget

Klimastrategi for 2030
– norsk omstilling i europeisk samarbeid



Meld. St. 13

(2020–2021)
Melding til Stortinget

Klimaplan for 2021–2030



Meld. St. 14

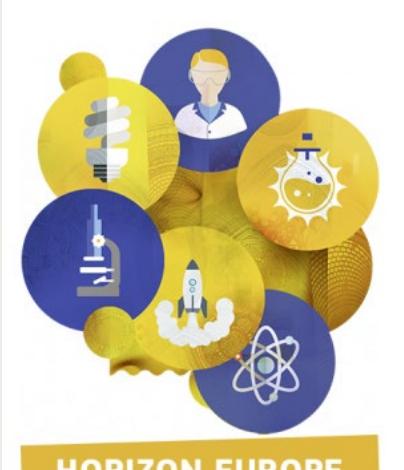
(2015–2016)
Melding til Stortinget

Natur for livet

Norsk handlingsplan for naturmangfold



Klimakur 2030: Klimaeffekt på kort sikt og tilleggseffekter



Er nokon naturtypar meir helsefremmande enn andre?

- Alle grøntarealtypar og -eigenskaper har vist seg å ha positive effektar på psykisk helse og velvere
- Det ser ikkje ut til at nokre enkeltypar grøntområde skil seg ut som best for alle, overalt og støtt

Fig. 1. Number of studies per green space category and study type

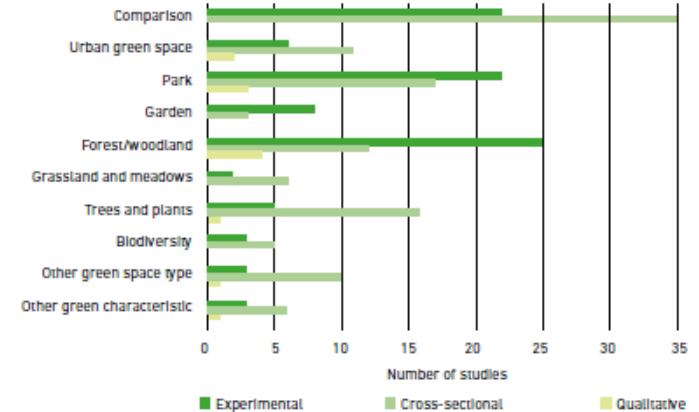
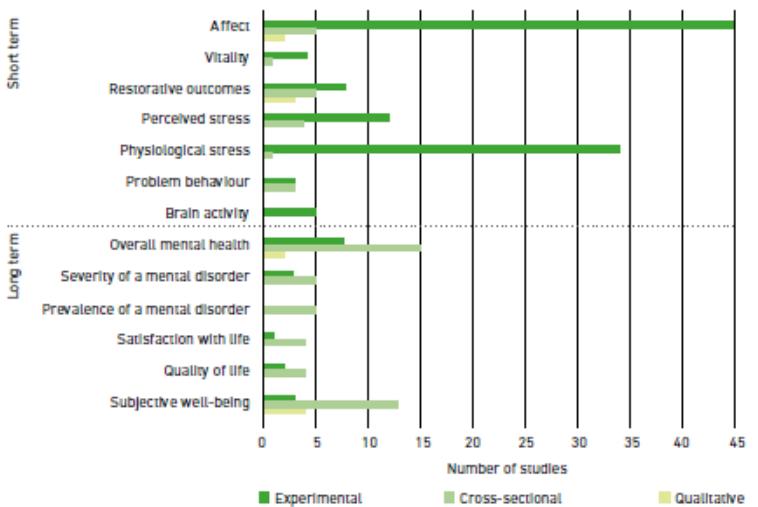


Fig. 2. Number of studies per mental health outcome and per study type



Bekkeåpning Gaustadbekken, Oslo





Gaustadbekken, Oslo



Polish Science Foundation, Warsawa Kiosk, Aker brygge



Grønne tak på Munch brygge, Bjørvika (Oslo)



Grønne tak på Økern Portal, Oslo



Biosolar grønne tak, Ryen gjenvinningsstasjon, Oslo



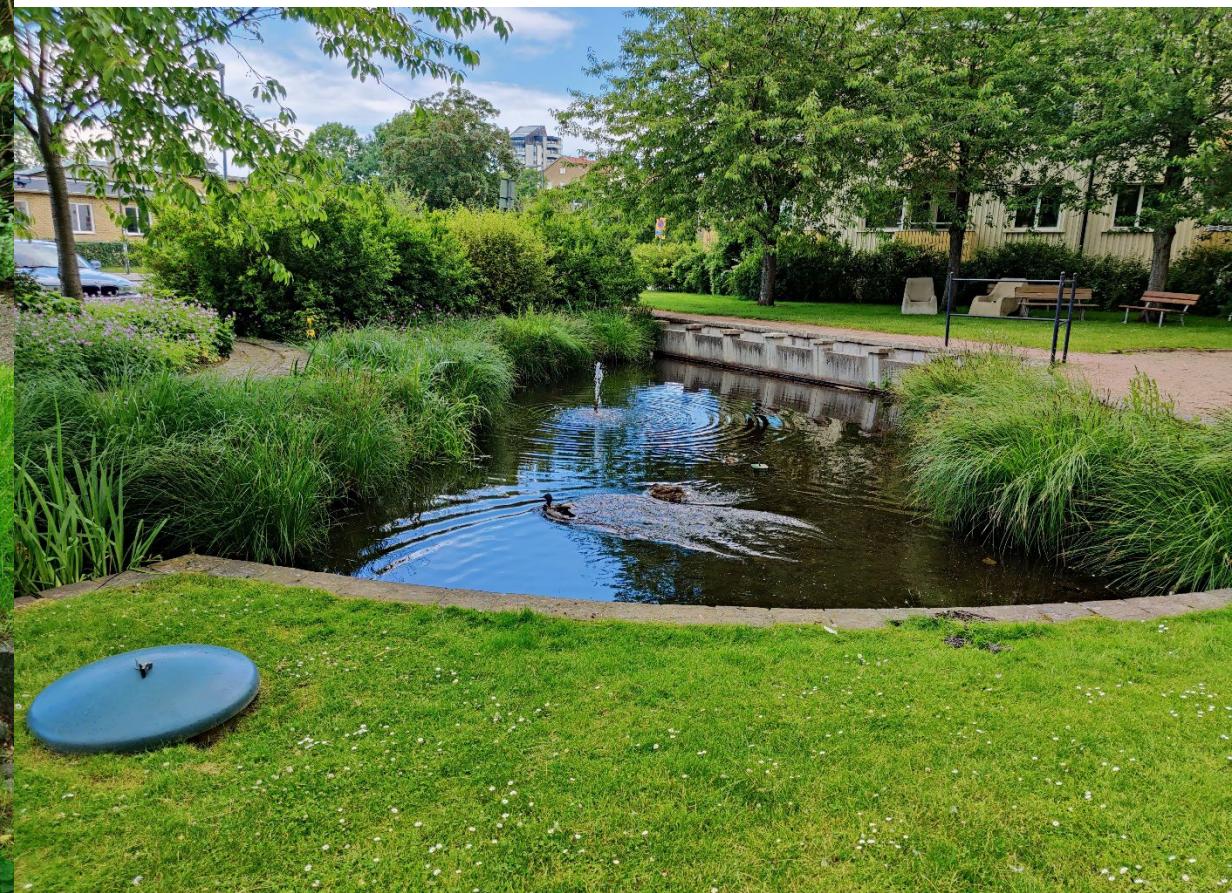
Rainbeds og grønne tak, Nøddehegnet barnehage, Søborg



Novo Nordisk hovedkvarter, København



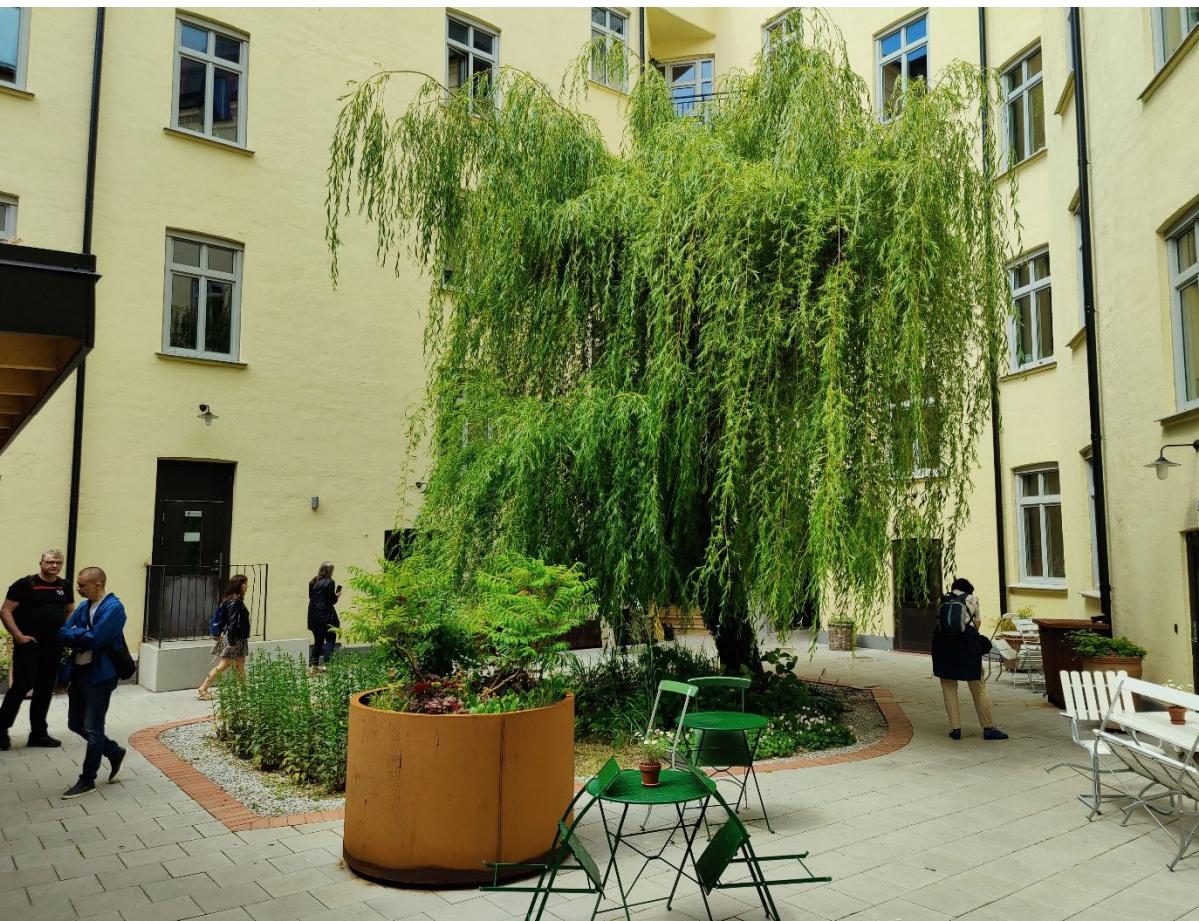
Etablering av åpne overvannsløsninger i eksisterende boligområde, Augustenborg, Malmö



Tak på «Greenhouse» boligprosjekt, Malmö



Rainbeds i gårdsrom i bostadsområde, Malmö



Gateombygging med treplanting, Malmö



Grønne tak og våtmark på tak i Malmö



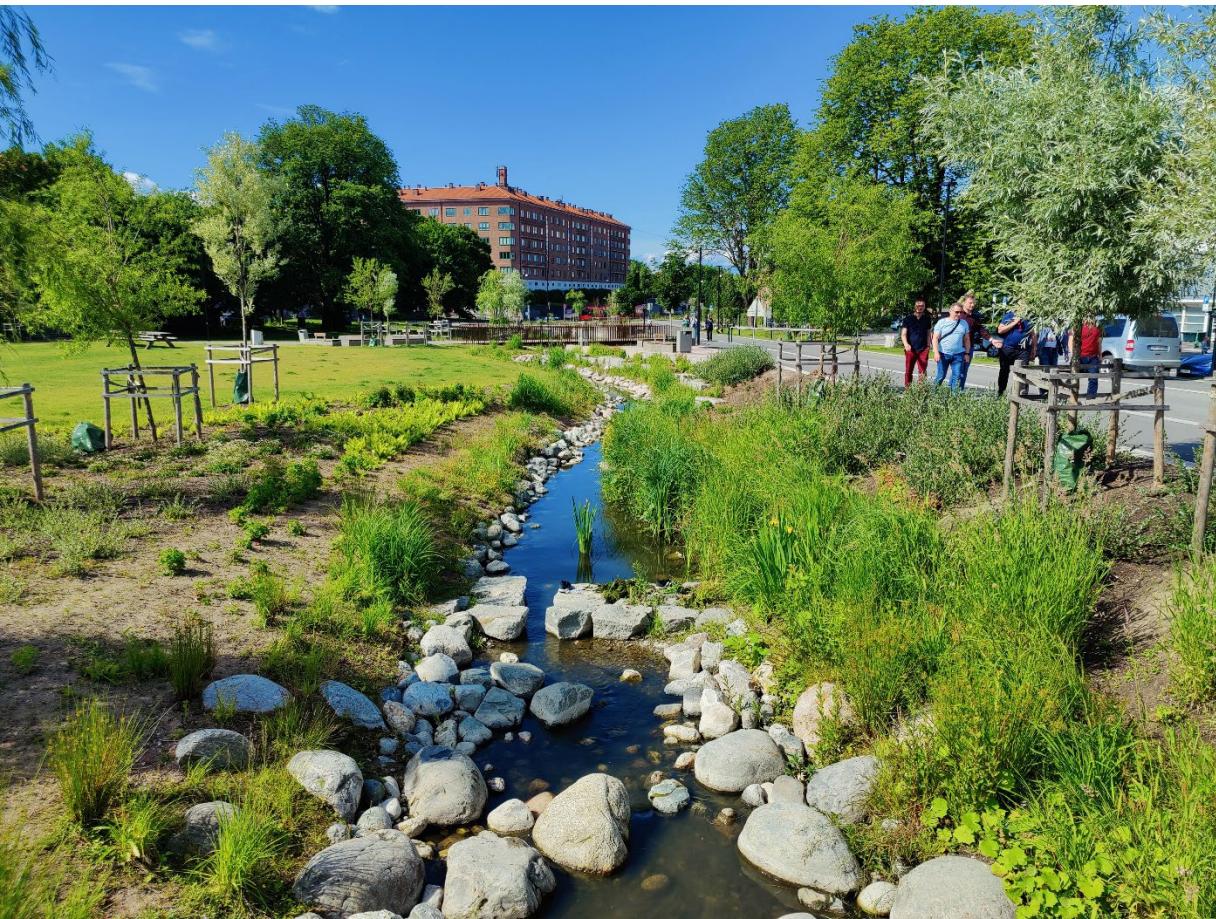
Bo01 boligutstilling, Västre Hamn, Malmö



Flomveier og gateombygging København



Bekkeåpning, Jordal, Oslo



Bekkeåpning, Hovinbekken på Ensjø, Oslo



FN-rapport 6. juli 2021

<https://unstats.un.org/sdgs/report/2021/>

As we enter the second year of the COVID-19 pandemic, it is abundantly clear that this is a crisis of monumental proportions, with catastrophic effects on people's lives and livelihoods and on efforts to realize the 2030 Agenda for Sustainable Development.

Historically, pandemics have served as catalysts for political, economic and social change, and that still holds true today. The year 2021 will be decisive as to whether or not the world can make the transformations needed to deliver on the promise to achieve the SDGs by 2030 – with implications for us all.

The Sustainable Development Goals Report 2021





END POVERTY IN ALL ITS FORMS EVERYWHERE

COVID-19 HAS LED TO THE FIRST RISE IN EXTREME POVERTY IN A GENERATION

AN ADDITIONAL 119-124 MILLION PEOPLE WERE PUSHED BACK INTO EXTREME POVERTY IN 2020



THE GLOBAL POVERTY RATE IS PROJECTED TO BE 7% IN 2030



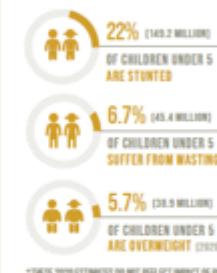
END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

THE GLOBAL PANDEMIC IS EXACERBATING WORLD HUNGER

WORLDWIDE, AN ADDITIONAL 70-161 MILLION PEOPLE ARE LIKELY TO HAVE EXPERIENCED HUNGER AS A RESULT OF THE PANDEMIC IN 2020



PANDEMIC WILL WORSEN CHILD MALNUTRITION



2.37 BILLION PEOPLE ARE WITHOUT FOOD OR UNABLE TO EAT A HEALTHY BALANCED DIET ON A REGULAR BASIS (2020)



Years, or even decades, of progress have been halted or reversed. In 2020, the global extreme poverty rate rose for the first time in over 20 years. Hundreds

1 UTRYDDE FATTIGDOM



2 UTRYDDE SVOLT



Disrupted food supply chains and economic slowdowns have affected food systems worldwide and threatened people's access to food, making the

3 GOD HELSE OG LIVSKVALITET



The COVID-19 pandemic has interrupted one or more essential health services and poses major health threats beyond the disease itself.

THE PANDEMIC HAS HALTED OR REVERSED PROGRESS IN HEALTH AND SHORTENED LIFE EXPECTANCY



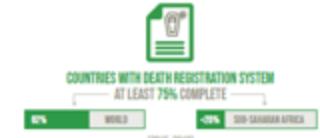
90% OF COUNTRIES ARE STILL REPORTING ONE OR MORE DISRUPTIONS TO ESSENTIAL HEALTH SERVICES

A DECADE OF PROGRESS IN



COULD BE STALLED OR REVERSED BY COVID-19

A LACK OF DATA HINDERS UNDERSTANDING OF THE TRUE IMPACT OF COVID-19



SCALING UP INVESTMENT IN UNIVERSAL HEALTH COVERAGE IS ESSENTIAL

HEALTH WORKERS

- IN SHORT SUPPLY IN MANY REGIONS - HAVE BEEN STRETCHED TO THEIR LIMITS BY THE PANDEMIC



Beyond millions of deaths worldwide, the full toll of the COVID-19 pandemic on health is not yet known

A decade of progress in reproductive, maternal and child health could be stalled or reversed by the pandemic

The COVID-19 pandemic is aggravating the burden of non-communicable diseases

COVID-19 is amplifying health inequalities

A lack of data is the main stumbling block to understanding the true impact of COVID-19

Klima, miljø og helse



- Varmare, våtare, og villare:
 - Ekstremvær (nedbør) kjem oftere, blir kraftigare og varer lenger
- Flaumar, ras og skred
- Og omvendt: heitebølgjer, tørke og skogbrannar
- “Dei store endringane”:
 - Temperaturnivå
 - Havnivå
 - Årstider

Human miljøbiobank



Systematisk innsamling av biologiske prøvar frå representativ del av folket

NEDFROSNE TIDSKAPSLaR

Blod

Urin

(morsmelk)

(hår)

Volum

Prøvetaking

Spørsmål

Jamnlig

moba



KOMPLEMENTÆRE DATA

Spørreskjemadata eller intervju om livsstil og kosthald

Antropometriske målingar

Helseregisterdata

Ny kunnskap om

- Kjende og hittil ukjende miljøforureiningar og naturlege toksiske stoff
- Tidstrendar
- Effekt av tiltak
- Kjelder til eksponering
- Populasjonar med risiko for høgare eksponering
- Samanheng med helse
- Endringar i kosthald og ernæringsstatus over tid

Både kosthaldsinformasjon og biomonitoreringsdata er svært viktige som kunnskapsgrunnlag for risikovurderingar