

Towards a Joint Nordic Bioeconomy Strategy

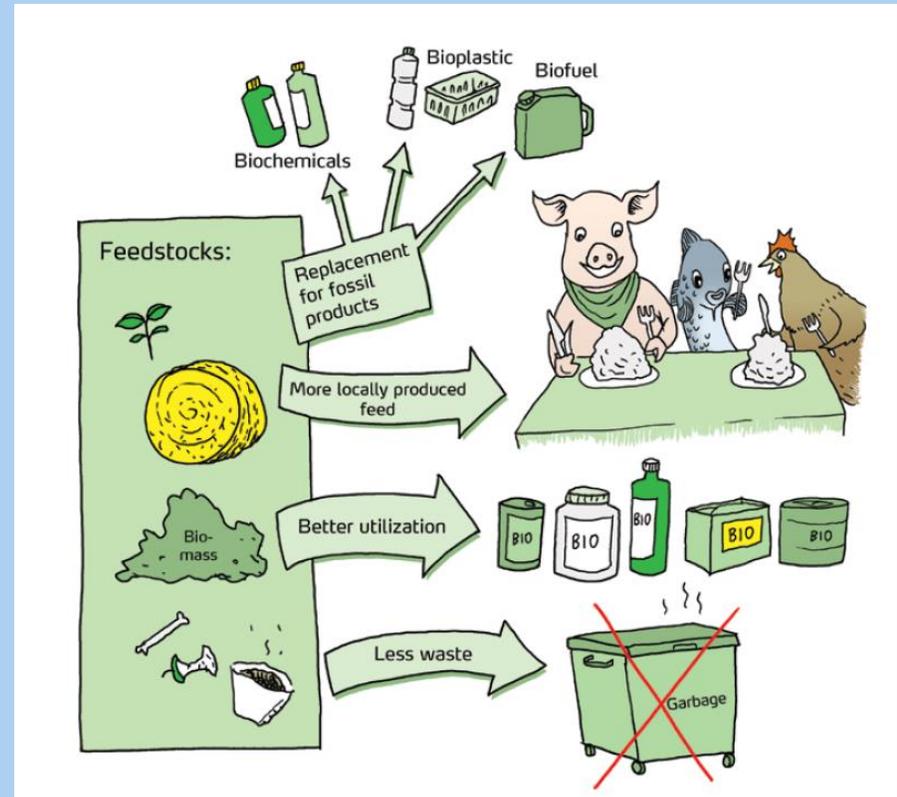
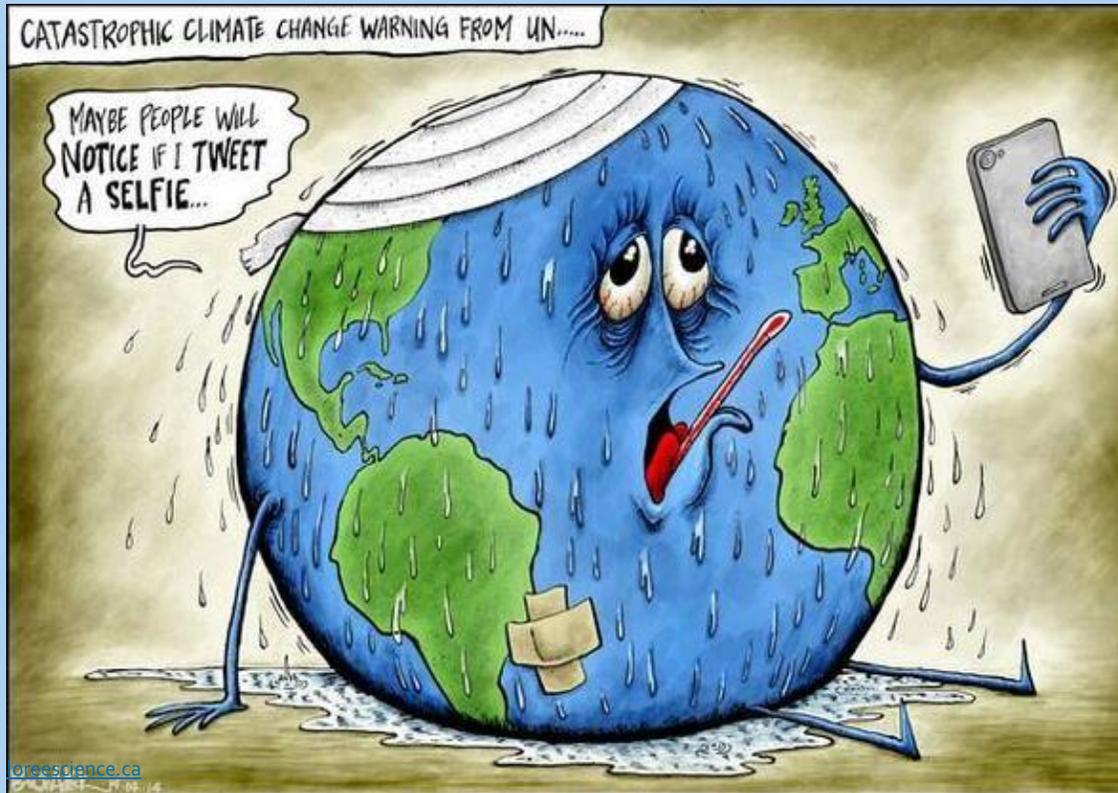
Sustainability criteria & Good Nordic Bioeconomy Cases





The times they are a-changin'

Bob Dylan, 1964





The times they are a-changin'

Bob Dylan, 1964

...

If your time to you is worth savin'

Then you better start swimmin' or you'll sink like a stone

For the times they are a-changin'





UNITED NATIONS

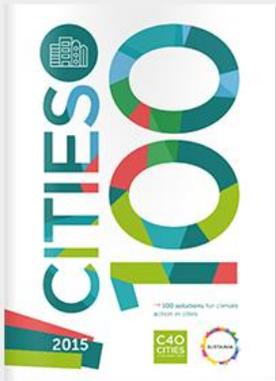
TRANSFORMING OUR WORLD:



THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Contribution of the Bioeconomy to the SDGs – draft 19/02/2016





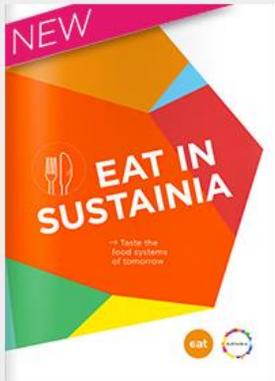
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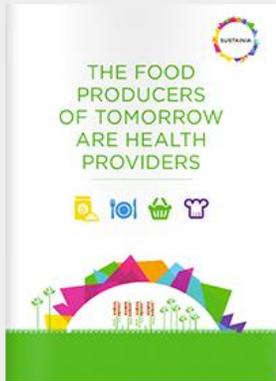
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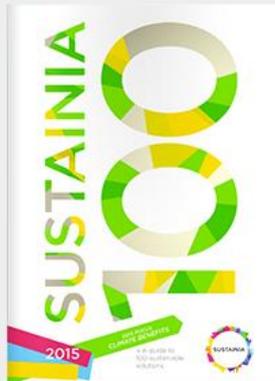
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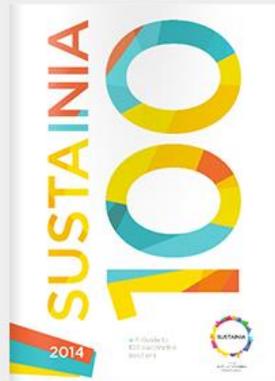
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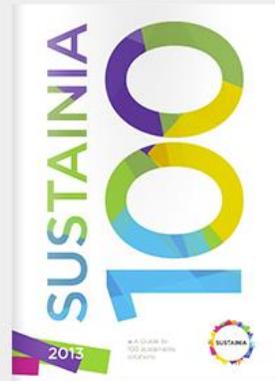
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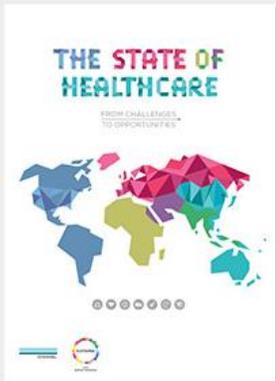
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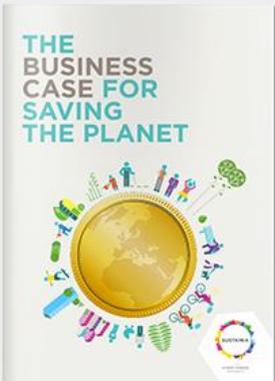
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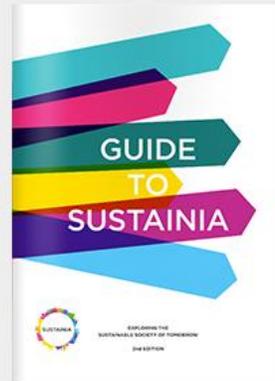
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NORDIC
BIOECONOMY

25

CASES FOR
SUSTAINABLE
CHANGE

#bioeconomy



7

COUNTRIES

5

CRITERIA

4

STRONGHOLDS

25

CASES

**NORDIC
BIOECONOMY**

25

**CASES FOR
SUSTAINABLE
CHANGE**





Criteria for a sustainable and innovative bioeconomy

1.
SUSTAINABLE USE OF
NATURAL RESOURCES



2.
TECHNOLOGICAL
INNOVATION



3.
ENVIRONMENTAL
BENEFITS

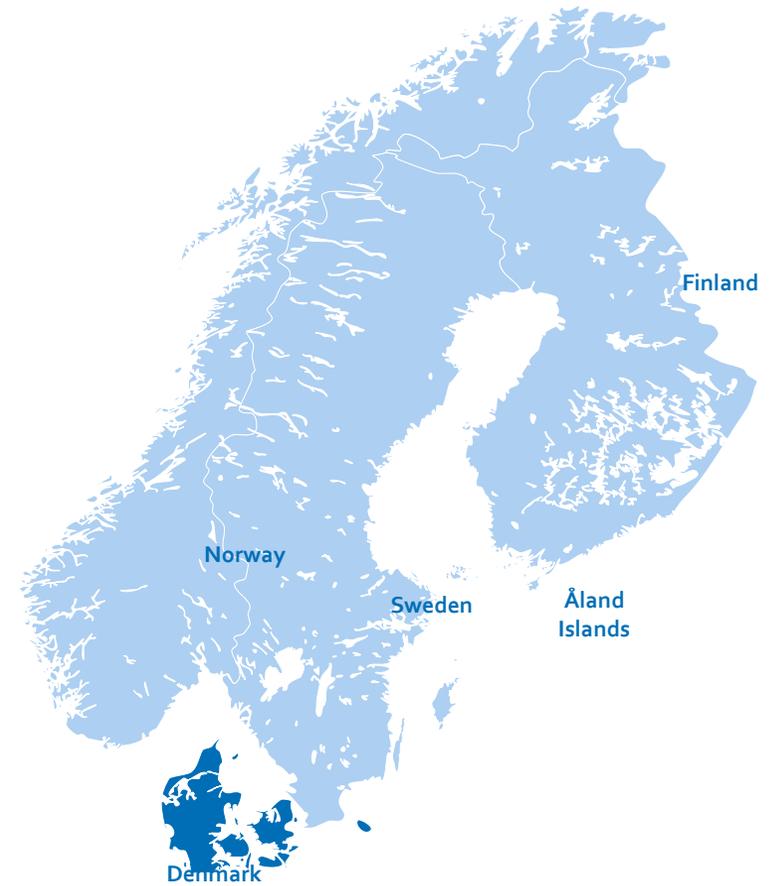
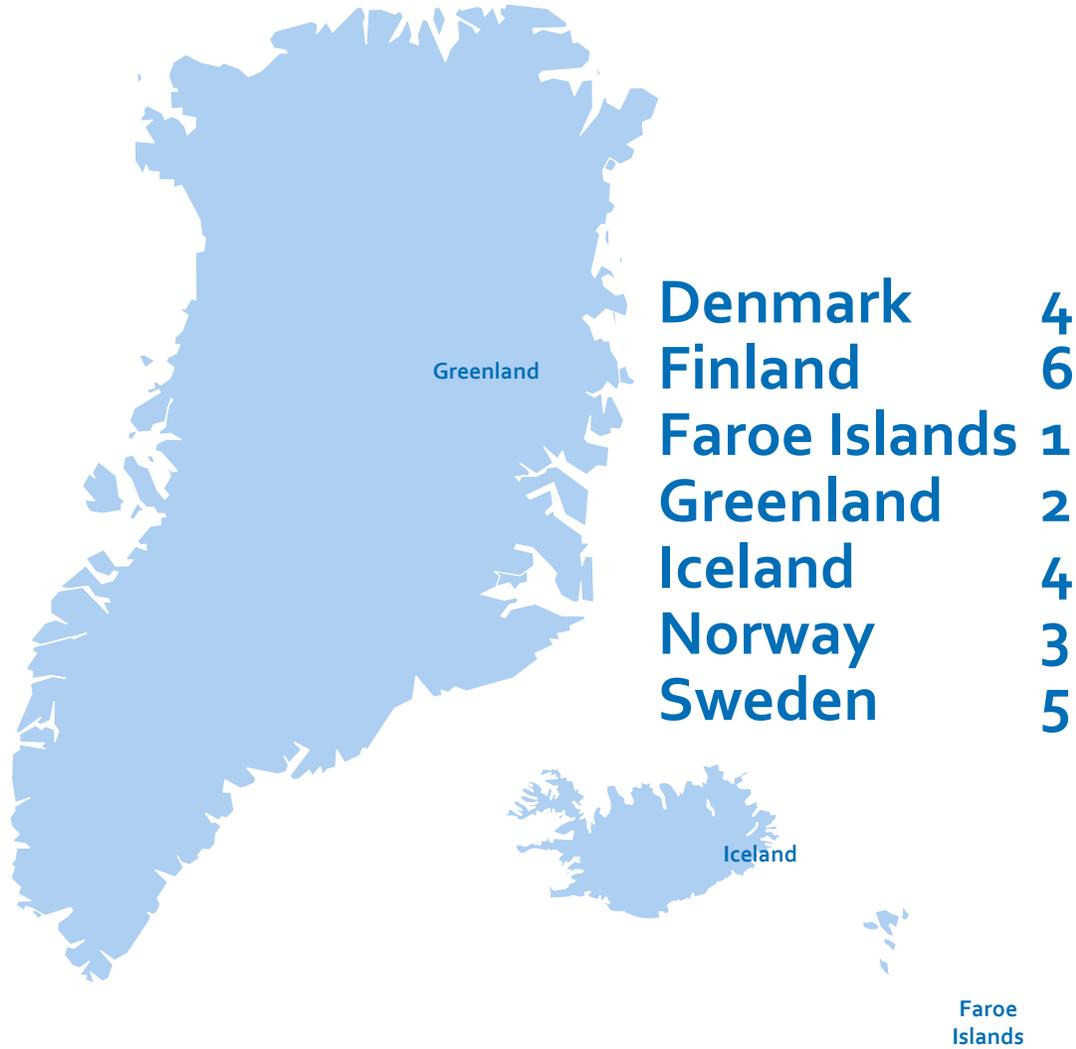


4.
SOCIETAL
BENEFITS



5.
BUSINESS MODEL
INNOVATION





NORDIC BIOECONOMY

25

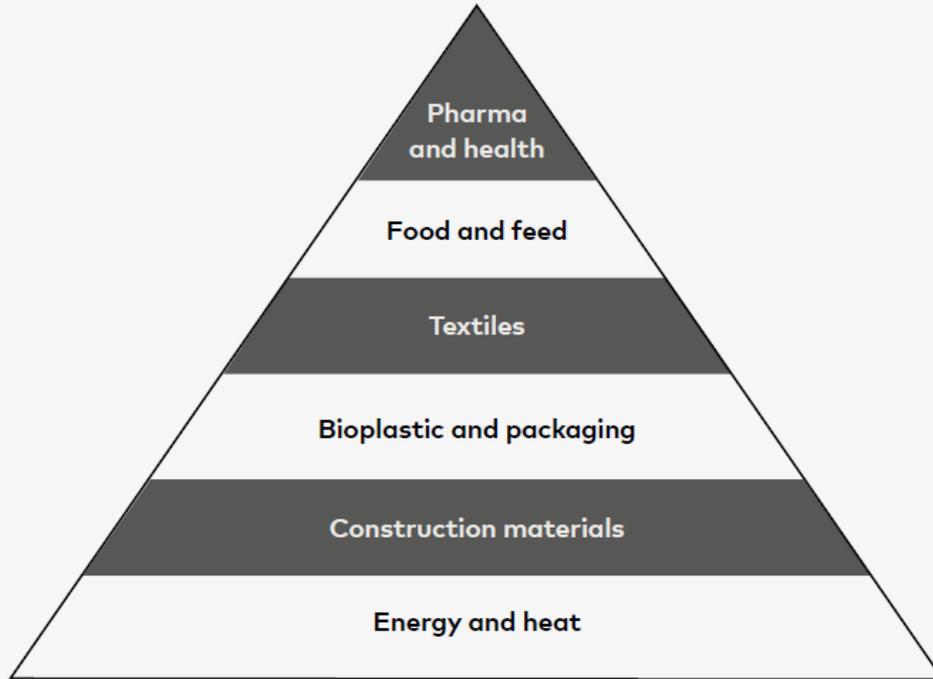
CASES FOR SUSTAINABLE CHANGE



HIGH VALUE



LOW VALUE



Biomass cascade: high value compounds at the top, residual biomass for production of low value energy, electricity and heat at the bottom.

#bioeconomy

4 strongholds of the nordic bioeconomy

REPLACE

– in search of
responsible
resources

UPGRADE

– unlocking the
full potential
of sidestreams
and waste

CIRCULATE

– creating
selfsustainable,
local and circular
bio-solutions

COLLABORATE

– because we
are smarter
together

Strongholds of the Nordic bioeconomy.





REPLACE

In search of responsible resources

CRITERIA 1
Sustainable use of natural resources



GrowDex® represents a new utilisation area for wood pulp by replacing synthetic and animal-derived materials in the pharmaceutical industry.

CRITERIA 3
Environmental benefits



When UPM BioVerno is used by vehicles as a replacement for fossil diesel, it reduces CO₂ emissions by around 250,000 tonnes annually, according to the company.

CRITERIA 4
Societal benefits



Trefokus engages teachers and schools to inspire youth to think of sustainable solutions in the building sector.

CRITERIA 3
Environmental benefits



Full industrial ramp-up of the biorefinery to 10,000 tonnes of seaweed will sequester 4,300 tonnes of CO₂, equivalent to the emissions from 2,600 households.

CRITERIA 4
Societal benefits



The Exilva project at Borregaard is estimated to create around 50 full-time positions.

CRITERIA 1
Sustainable use of natural resources



By processing crude tall oil, a residue from pulp production, UPM Biofuels is able to utilise the wood used for its pulp production in a more efficient way without increasing wood harvesting or land use.

CRITERIA 5
Business model innovation



Trefokus inspires stakeholders to create a new market for wood-based building solutions in large-scale construction and urban environments.



CRITERIA 1 Sustainable use of natural resources



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CRITERIA 4
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CRITERIA 3
Innovation



... stakeholders to create
... wood-based building
... -scale construction and
urban environments.





UPGRADE

Unlocking the full potential of sidestreams and waste

CRITERIA 1
Sustainable use of natural resources



Polar Seafood has gone from utilising 50% of the halibut to 90% by using all parts of the fish except the skin, thereby eliminating a big waste problem.

CRITERIA 2
Technology innovation



The company is building a plant with new technology to produce collagen from marine materials.

CRITERIA 3
Environmental benefits



By working towards sustainability and farm optimisation, Porvaldseyri saves an estimated 18 tonnes of CO₂ annually.

CRITERIA 5
Business model innovation



Due to intensive market monitoring and a subsequent successful market development, the company now sells fish heads, tails, and bones to Asian markets, making profit out of former waste.

CRITERIA 4
Societal benefits



Arla estimates that around 300 jobs have been created from the new business model revolving around whey protein.

CRITERIA 5
Business model innovation



Codland will be the first Nordic producer of collagen peptides. The company estimates the value of the cod skin will be increased by 300% from the current low value.



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CRITERIA 2
Technology innovation

By w
farm
estim

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A photograph of a wooden pier extending into the ocean. In the foreground, there is a curved concrete structure, possibly a part of a pier or a breakwater, with some dark rocks and seaweed. The water is a light blue color. The background shows a hazy coastline with buildings and trees.

CIRCULATE

Creating circular bio-solutions

CRITERIA 3 Environmental benefits



Compared to fossil fuels, the carbon footprint from using the geothermal energy is less than 5%.

CRITERIA 1 Sustainable use of natural resources



New steel products created in the region contain an average of almost 90% of recycled steel.

CRITERIA 4 Societal Benefits



One of every four new jobs created in Iceland's Southern Peninsula can be attributed to The Resource Park.

CRITERIA 5 Business model innovation



The initiative focuses on creating new value chains and viable business cases based on the 1.7 million tonnes of by-products and residues annually.

CRITERIA 2 Technology innovation



The project partners plan to involve digital technologies enabling customers to track the end-product back to an individual fish farm.

CRITERIA 3 Environmental benefits



Algae do not require input of energy, fertiliser, or water, which lessens the environmental impact compared to conventional farming and fuel production.



CRITERIA 3
Environmental benefits



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CRITERIA 4
Business

The iron chain
the 1.7 million tonnes of by-products and residues annually.



COLLABORATE

Because we are smarter together



CRITERIA 2 Technology innovation



The biorefinery is a test bed for constantly applying existing and new technology for sustainable purposes.

CRITERIA 4 Societal benefits



One of BioInnovation's projects, "Renewable bio-based products in the health area" develops antibacterial and easily washable surfaces with integrated sensors to improve conditions in the health-care sector.

CRITERIA 3 Environmental benefits



Paper Province's business incubator has supported the development of a dewatering screw press that reduces the energy consumption by 95% compared to traditional thermal drying processes.

CRITERIA 5 Business model innovation



Sodankylä is improving conditions for entrepreneurship in the municipality by creating demand for local produce and increasing profitability by cutting logistics costs.

CRITERIA 1 Sustainable use of natural resources



Sodankylä municipality has decreased food waste by 20% by reinventing the supply chain and logistics around food.

CRITERIA 3 Environmental benefits



The long-term investments in renewable energy, energy efficiency, and a zero-waste society have reduced CO₂ emissions by 63,000 tonnes from 2007 to 2013, making li a frontrunner in carbon reductions in Finland according to the Finnish Environmental Institute.

**CRITERIA 2
Technology**

The biorefinery is applying existing sustainable

**CRITERIA 4
Societal benefits**

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**CRITERIA 3
Environmental benefits**

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Environmental benefits**

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Communicating the Bioeconomy



NORDIC BIOECONOMY

25

CASES FOR SUSTAINABLE CHANGE



The screenshot shows the NordPub portal interface. At the top, there is a blue header with the 'Nordic Co-operation' logo and the text 'NordPub'. Below the header, there are three search buttons: 'Simple search', 'Advanced search', and 'Statistics'. A search bar contains the text 'Nordic Bioeconomy - 25 cases for sustainable change'. Below the search bar, there are links for 'English Svenska Norsk'. The main content area displays the title 'Nordic Bioeconomy - 25 cases for sustainable change' and the responsible organization 'Nordic Council of Ministers, Nordic Council of Ministers Secretariat, 2017 (English)'. There is an 'Abstract [en]' section with a paragraph of text. To the right, there is a red box with the text 'NORDIC BIOECONOMY 25 CASES FOR SUSTAINABLE CHANGE'. At the bottom right, there is a section for 'Open Access in DiVA' with a 'Fulltext (7658 kB)' link and '1614 downloads'.

<http://norden.diva-portal.org>

Activities

- Successful campaign on social media
- Activating relevant networks
- Press release
- 3 articles on norden.org
- NCMS Secretary General blog in Huffington Post
- EU-observer: articles, video (upcoming)
- Joint NMRS and Sustainia blog (upcoming)
- EUSBSR blog, main page (soon after this meeting)



Great interest

- 1,614 downloads and 13,084 hits (NordPub as of 01/03/2017).
- The greatest rate of downloads of any Nordic publication ever.
- Presented to the Nordic Ministers for Co-operation.
- Massive exposure in social media
- Demographics on sharing direct link varies between different Nordic Countries (see: <https://norden.altmetric.com/details/15579045>)



GermanBioeconomy Retweetede
Norden Centrum @NordenCentrumPL · 7 feb.
#Nordic #Bioeconomy – 25 cases for #sustainable change. norden.diva-portal.org/smash/record.j...
Översätt från engelska
1 2

majja kale Retweetede
NEFCO @NefcoNordic · 7 feb.
Acquaint yourself with 25 fascinating cases of #Nordic #bioeconomy creati sustainable change. bit.ly/2jYcb33 #greengrowth
Översätt från engelska
1 4

Nordic Co-operation @nordenen · 2 feb.
#Sustainability criteria can pave the way forward! New #longread about 25 Nordic #bioeconomy cases #strongholds norden.org/en/news-and-ev...
Översätt från engelska

“
Nordic bioeconomy is about sustainable change
”
10 5

Geir Oddsson och 1 till Retweetede
Esben AislundLanthén @EsbenLanthen · 30 jan.
25 Nordic #bioeconomy solutions (incl. #dkgreen cases: @ArlaDanmark, @DONGEnergy, @danishcrown). Great collaboration @nordenen & @Sustaina

Sustainia @Sustainia
How can we secure basic needs while limiting our impacts? We present w/ @nordenpub 25 #bioeconomy solutions→bit.ly/2jChUC #NordPub

So far, Altmetric has seen 124 tweets from 85 users, with an

Showing items 1–100

Emil Damgaard Grann @Emil_Grann
RT @nordenpub: Nordic Bioeconomy – 25 cases for susta
<https://t.co/UgrIZIW...>
15 Feb 2017

Nordic Publications @nordenpub
Read the publication "Nordic Bioeconomy – 25 cases for
<https://t.co/fjiBfdL6Am>
14 Feb 2017

GermanBioeconomy @OfficeBECouncil
RT @NordenCentrumPL: #Nordic #Bioeconomy – 25 cases
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Nordic Co-op @nordenen
RT @MAHoysti: urn:nbr

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1543 downloads



Developing a Joint Nordic Bioeconomy Strategy



What's next?

- from best Nordic cases to a common strategy



”

**Nordic
bioeconomy
is about
sustainable
change**



Sustainable growth from bioeconomy

THE FINNISH BIOECONOMY STRATEGY



Familiar resources – undreamt of possibilities

The Government's Bioeconomy Strategy

The Nation



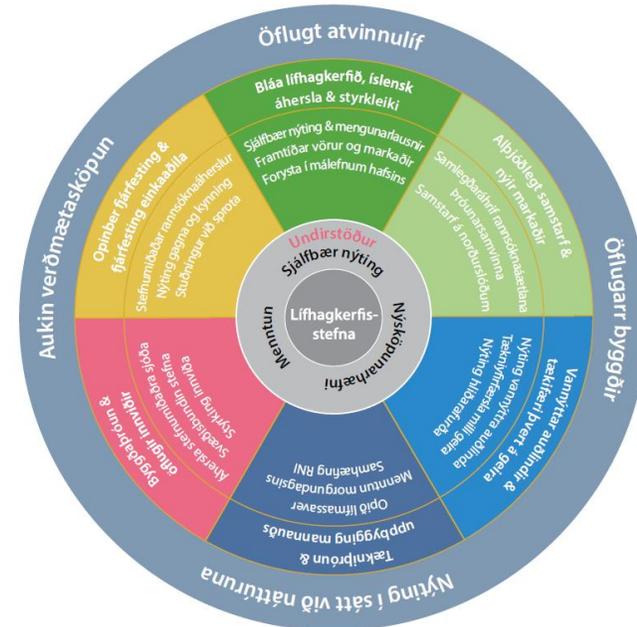
Norwegian Ministry

Swedish Research and Innovation Strategy for a Bio-based Economy



Denmark as growth hub for a sustainable bioeconomy

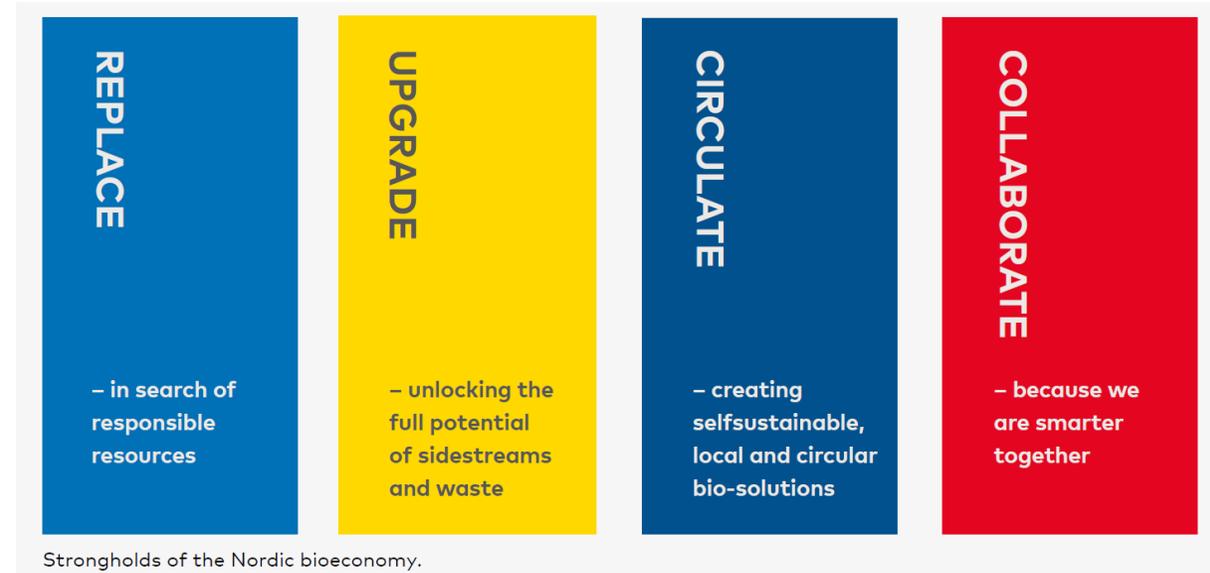
Statement by the National Bioeconomy Panel
September 2014



LÍF-HAG-KERFIS-STEFNA 2016

Nordic Bioeconomy Strategy

— A joint strategy should focus on areas that will add value to national efforts



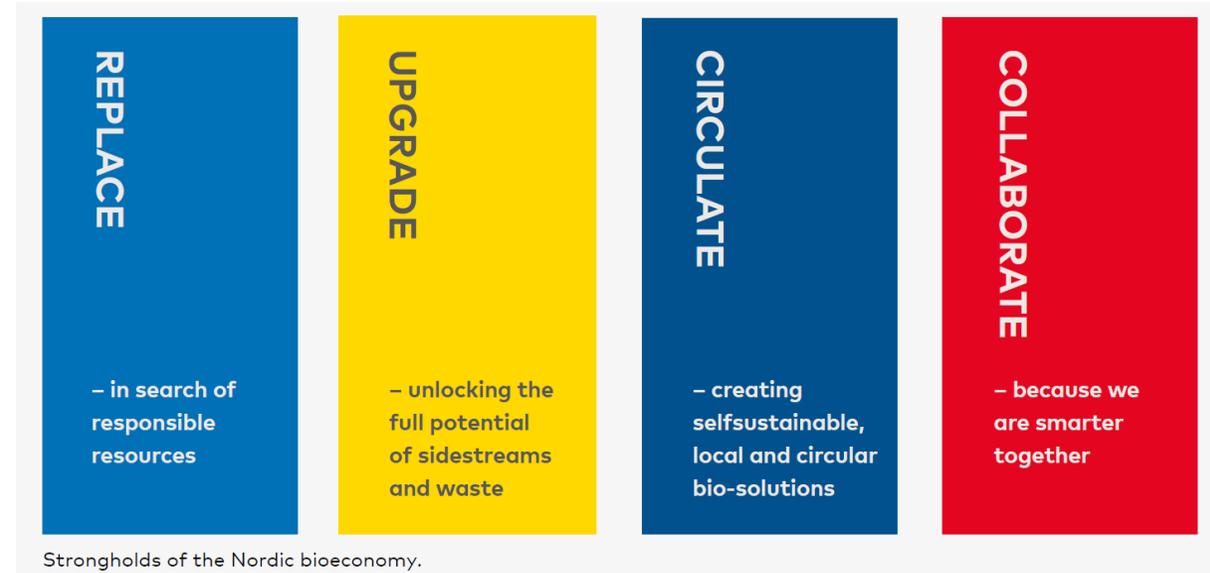
Is there a Nordic Bioeconomy?

- Biomass producers
- Blue – Green – Yellow
- Research and Innovation
- Biorefineries – Testcenters
- Nordic Solutions



Nordic Bioeconomy Strategy

— The strategy will focus on issues that can engage decision makers, industry, academia, civil society and the general public



Focus on both short- and long-term actions

- Networks and Centres of Excellence
- Knowledge sharing
- Certification and labelling
- Bioeconomy in education



Thanks.