

# DREIS AP3: Utvikling av berekraftsindikatorar for handverksprodukt

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# Innhold

- Bakgrunn
- Innleiande oversyn over berekraft-rammeverk generelt
- Kort om metode
- Empiri: Tilbakemeldingar frå workshop, dokumentanalyse, litteraturgjennomgang
- Resultat: Oversyn

# Bakgrunn

- DREIS: Utvikling av berekraft-indikatorar for produksjon basert på handverkstradisjonar
- Dokumentet er skriva på bakgrunn av eit relativt lite omfang, og resultatane kan verta arbeida meir med i eit hovudprosjekt.

# Innleiing

## Berekraft

- Berekraft er i utgangspunktet eit normativt pålegg som tyder at ein ikkje skal vera grådig så ein går tom for ressursar eller natur, slik at det som er bra skal vara so lenge som mogeleg. Ein berekraftig skog skal til dømes kunna henta seg heilt inn att på alle vis etter hogst, og dermed fullstendig absorbera menneskeleg åtferd og aktivitet, utan å på noko vis verta øydelagd på sikt. James Lovelock sin Gaia-teori hevdar, om me skal forenkla noko, at «berekraft» i form av generell sjølvregulering eller homeostase er Jorda sin naturlege langsiktige modus, og at våre moderne samfunn utfordrar dette (t.d. Lovelock & Margulis 1973). Frå eit slikt synspunkt er det kanskje naturleg å skjela mot tradisjon og dei lange linene for å løysa utfordringa med berekraft.

# Innleiing

- Samstundes er det viktig å vera selektiv på kva kriser ein skal unngå, slik at berekraft ikkje vert ei umogeleg oppgåve. Primært er det kriser som gjev irreversibel skade som ein må unngå: Utrydding av plante- og dyreartar og at uerstatteleg immateriell og materiell kulturarv forsvinn, gjerne øydelegging av landskap og naturverdiar, gjerne klimaendring, og gjerne irreversible samfunnsmessige, sosiale og helsemessige konsekvensar både her og no og meir langsiktig. I tillegg trur ein gjerne at økonomisk berekraft er naudsynt, slik at me kan ha overskudd til å òg få prioritert miljøvern og det sosiale. Det er dermed ofte hevda at berekraft har tre pillarar: Miljømessig, sosial, og økonomisk. Somme meiner rett nok at «degrowth» er vegen å gå, slik at økonomisk vekst skal nedprioriterast eller til og med reverserast med medvite (Xue et al. 2017).

# Innleiing

- Over tid har berekraft-omgrepet vorte ein del utvida og fragmentert, og har tilsynelatande for somme vorte eit synonym til moralsk og skikkeleg framferd meir generelt. Det er dermed mange ulike forslag til indikatorar som ein kan nytta til å måla berekraft. Her er det kanskje EU som er mest ivrige, det ser til dømes ut til at European Sustainability Reporting Standards vil få over tusen indikatorar for «berekraft» som føretak er tenkt å rapportera på (European Commission 2023; EFRAG 2023). Både berekraft som eit forkledd system av moralisme og reduksjon og instrumentering av etiske spørsmål til berekraft-indikatorar kan kritiserast, til dels kraftig (Alawattage et al. 2023). So det er kanskje viktig å ikkje blanda hummer og kanari inn i berekraftvurderingar, og å dessutan hugsa at indikatorar alltid må vera komplementært med kritisk tanke og kvalitative vurderingar.

# Innleiing

## Berekraft og handverktradisjonar

- For kultur, materiell og immateriell kulturarv og tradisjonell handverkproduksjon kan ulike aspekt ved berekraft vera relevante. Å utvikla indikatorar for berekraft er ein mogeleg strategi for å få synleggjort det ein kan kalla berekraft-prestasjonen, eller med eit negativt omgrep, berekraft-fotsporet, til eit produkt. Stundom er indikatorar for berekraft gjerne retta inn mot effektar som verkar negativt inn på berekraft, slik at ein kan utarbeida varselampe-vurderingar, der ein ser etter «hotspots» som må gjerast noko med. Andre indikatorsett, som SN sine berekraftsmål, er formulerte positivt, slik at det vert lettare å synleggjera og skryta av kva godt ein gjer for verda. Uansett vil ein samanlikning til dømes mellom fleire produkt, prosessar eller scenario gje resultat der noko vert meir positivt, og anna er meir negativt enn det ein samanliknar med.

# Innleiing

- Indikatorar for å måla eller synleggjera industriell berekraft vert gjerne delt inn i sosiale, økonomiske og miljømessige indikatorar, noko som reflekterer dei tre sulene for berekraftig utvikling. Utover dette er dei konkrete berekraftindikatorane som vert nytta relativt brei (Mengistu & Panizzolo 2023). Harmoniserte eller konsensusbaserte indikatorsett kan gje eit fast grunnlag for samanlikningar mellom produkt, samstundes kan dette også vera opphav til ein viss mangel på fleksibilitet, slik at viktige aspekt risikerer å falla utanfor analysen. Representasjon, maktfordeling og hensyn til ikkje-menneskelege aktørar i harmonisering og konsensusbygging er òg mogelege problem. Når ein ser etter indikatorar, er det kanskje greitt å sjå etter eit kompromiss mellom rigiditet og fleksibilitet, der ein baserar seg på etablert kunnskap, men utan å mista heilheiten i det ein undersøker.
- I tråd med omfanget til DREIS-prosjektet er det handverksprodukt som er objektet for den vidare vurderinga.



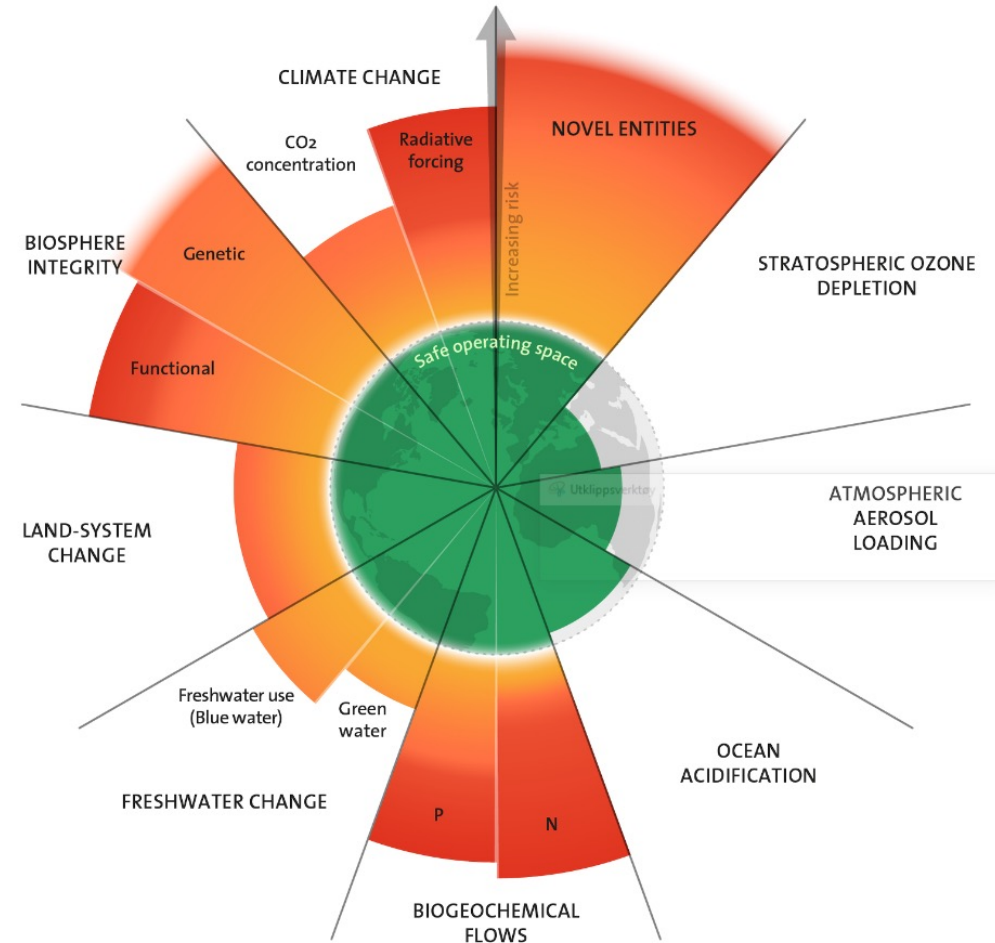
# Metode

- Metoden er ein gjennomgang av relevante praktiske berekrafttrapporatar og teoretiske berekrafttilnærmingar.
- For å belysa dette ytterlegare vart det 16. november 2023 arrangert ein open workshop, der ulike tilnærmingar til berekraft og berekraftindikatorar i kultursektoren vart diskutert. Workshopen vart arrangert på TEAMS, varte 3 timar, 17 var invitert, 11 deltok.
- Metoden kan dermed verta oppsummert som dokumentanalyse, litteraturgjennomgang og workshop.

# FNs bærekraftsmål



# Planetary Boundaries 2023



# Alternativ: Fokus på prosess

## ANBEFALTE STRAKSTILTAK FOR KUNST- OG KULTURVIRKSOMHETER



# Alternativ: Sertifisering og miljømerking

## Reis grønt

Symbolet som gjør det enkelt å feriere miljøvennlig.

«Gressstuten»/Reis Grønt symboliserer at produktet har en offisiell miljøsertifisering og sender deg til grønnere produkter. Symbolet hjelper deg å finne miljøsertifiserte aktiviteter og overnattingssteder når du planlegger norgessturen din. Hver gang du ser en gressstust på Visitnorways sider, vet du at aktøren bak tar et aktivt miljøansvar. Disse sertifiseringene faller inn under Reis Grønt.

Norsk Økoturisme, Svanen, Miljøfyrtårn, ISO 14001, Green Key og Blått Flagg. Hver for seg og samlet garanterer de for at de merkede opplevelsene følger strenge regler og retningslinjer for produksjon og håndtering av avfall, energiforbruk, transport, krav til underleverandører og bruk av kjemikalier. Tiltakene går utover det norske lovkravet.

### Miljøsertifiseringer i Norge



**Norsk Økoturisme**  
Sertifiseringen krever helhetlig, ansvarlig og miljøvennlig drift av virksomheten. Bedriftene må oppfylle 100 strenge kriterier innenfor internt miljøarbeid, natur- og kulturbruk. Det kreves at bedriftene utøver godt vertskap og utfører aktiviteter som gir ny kunnskap. De må ha kunnskap om forvaltning av naturen.



**Svanen**  
Bedrifter må tilfredsstille strenge kriterier knyttet til energi- og vannforbruk, avfallsortering og bruk av kjemikalier. De må også stille strenge miljøkrav til sine leverandører av varer og tjenester. Du møter svanemerket hos restauranter og hotell- og overnattingsbedrifter.



**Miljøfyrtårn**  
En Miljøfyrtårn-sertifisert virksomhet er forpliktet til å jobbe målrettet med å forbedre sine miljøprestasjoner innen områdene arbeidsmiljø, avfallshåndtering, energibruk, innkjøp og transport. Miljøfyrtårn har tilpassede kriterier for ulike bransjer og sertifikatet tildelles etter en uavhengig vurdering. For å sikre kontinuerlig forbedring må alle Miljøfyrtårn-virksomheter resertifiseres hvert tredje år.



**Green Key**  
Internasjonal miljøsertifisering, med anerkjennelsen GSTC Recognition, for hoteller, mindre overnattingssteder, camping og attraksjoner. Det stilles strenge krav innen blant annet avfall, energi, vann, innkjøp, utemiljø, CSR og personalinvolvering. Standarden opprettholdes gjennom årlig resertifisering, grundig saksbehandlingsprosess, krav til dokumentasjon og regelmessige audits.



**ISO 14001**  
Sertifiseringen stiller krav til bedriftens miljøstyringssystem, og finnes hovedsakelig hos hoteller. Bedriften velger selv å konsentrere om de områder hvor miljøbelastningen er størst og hvor det er mest å hente på å gjøre en forbedring.



**Blått Flagg**  
Miljøsertifisering for strender, mariner og bærekraftige aktivitetsbåter, som er basert på strenge krav innen sikkerhet og service, miljøledelse, vannkvalitet og miljøinformasjon. At en strand, marina eller båt er tildelt Blått Flagg er en forsikring ovenfor gjestene om at både omgivelserne og driften er varetatt på best mulig måte.



**Utklippverktøy**

Visit Norway fremhever de miljøsertifiserte reiselivsbedriftene og gjør det lettere for de reisende å finne bedrifter som satser miljøvennlig.

Navigasjonen Reis Grønt (Green Travel) på [www.visitnorway.com](http://www.visitnorway.com) tilbys bedrifter som er miljøsertifiserte og som har en bedriftsoppføring på Visit Norway.

Dette er et godt og kostnadsfritt tilbud til museer som ønsker økt synlighet av sitt miljøansvar.

- Velg en miljøsertifisering som passer din bedrift og dine verdier
- Vær medlem i ett av Visit-selskapene

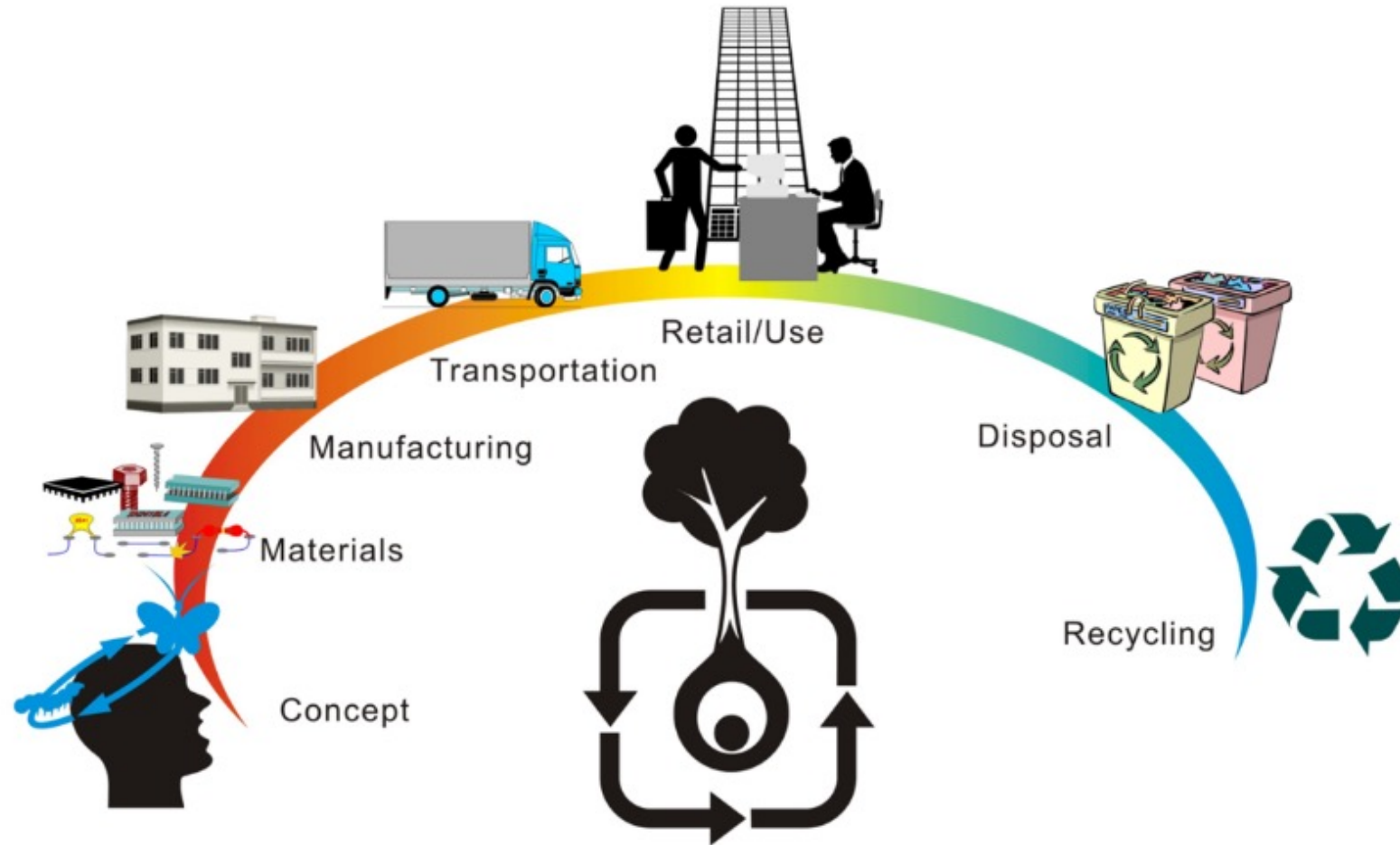
Aksepterte miljøsertifiseringer:  
ISO 14001  
Miljøfyrtårn  
Svanen  
Green Key  
Blått Flagg  
Norsk Økoturisme

[Green Travel - gjestene velger grønt \(visitnorway.com\)](http://www.visitnorway.com)

# EU-taksonomien: >1000 indikatorar

ESRS DR	Paragraph	Name	Data Type	SFDR/BENL H	V [Voluntary]
ESRS 2 BP-1	3	Disclosure of general basis for preparation of sustainability statement	narrative		
ESRS 2 BP-1	5 a	Basis for preparation of sustainability statement	semi-narrative		
ESRS 2 BP-1	5 b i	Scope of consolidation of consolidated sustainability statement is same as for financial statements	narrative		
ESRS 2 BP-1	5 b ii	Indication of subsidiary undertakings included in consolidation that are exempted from individual or consolidated	narrative		
ESRS 2 BP-1	5 c	Disclosure of extent to which sustainability statement covers upstream and downstream value chain	narrative		
ESRS 2 BP-1	5 d	Option to omit specific piece of information corresponding to intellectual property, know-how or results of innovation	semi-narrative		
ESRS 2 BP-1	5 e	Option allowed by Member State to omit disclosure of impending developments or matters in course of negotiation	semi-narrative		
ESRS 2 BP-2	6	Disclosures in relation to specific circumstances	narrative		
ESRS 2 BP-2	9	Medium- or long-term time horizons defined by ESRS 1 have been deviated from	semi-narrative		
ESRS 2 BP-2	9 a	Disclosure of definitions of medium- or long-term time horizons	narrative		
ESRS 2 BP-2	9 b	Disclosure of reasons for applying different definitions of time horizons	narrative		
ESRS 2 BP-2	10	Metrics include value chain data estimated using indirect sources	semi-narrative		
ESRS 2 BP-2	10 a	Disclosure of metrics that include value chain data estimated using indirect sources	narrative		
ESRS 2 BP-2	10 b	Description of basis for preparation of metrics that include value chain data estimated using indirect sources	narrative		
ESRS 2 BP-2	10 c	Description of resulting level of accuracy of metrics that include value chain data estimated using indirect sources	narrative		
ESRS 2 BP-2	10 d	Description of planned actions to improve accuracy in future of metrics that include value chain data estimated using indirect sources	narrative		
ESRS 2 BP-2	11 a	Disclosure of quantitative metrics and monetary amounts disclosed that are subject to high level of measurement uncertainty	narrative		
ESRS 2 BP-2	11 b i	Disclosure of sources of measurement uncertainty	narrative		
ESRS 2 BP-2	11 b ii 12	Disclosure of assumptions, approximations and judgements made in measurement	narrative		
ESRS 2 BP-2	13 a	Explanation of changes in preparation and presentation of sustainability information and reasons for them	narrative		
ESRS 2 BP-2	13 b	Disclosure of revised comparative figures	narrative		
ESRS 2 BP-2	13 c	Disclosure of difference between figures disclosed in preceding period and revised comparative figures	narrative		
ESRS 2 BP-2	14 a	Disclosure of nature of prior period material errors	narrative		
ESRS 2 BP-2	14 b	Disclosure of corrections for prior periods included in sustainability statement	narrative		
ESRS 2 BP-2	14 c	Disclosure of why correction of prior period errors is not practicable	narrative		
ESRS 2 BP-2	15	Disclosure of other legislation or generally accepted sustainability reporting standards and frameworks based on	narrative		
ESRS 2 BP-2	15	Disclosure of reference to paragraphs of standard or framework applied	narrative		
ESRS 2 BP-2	AR 2	European standards approved by European Standardisation System (ISO/IEC or CEN/CENELEC standards) have been used	semi-narrative		V
ESRS 2 BP-2	AR 2	Disclosure of extent to which data and processes that are used for sustainability reporting purposes have been verified	narrative		V
ESRS 2 BP-2	16	List of DRs or DPs mandated by a Disclosure Requirement	narrative		
ESRS 2 BP-2	17	Topic has been assessed to be material	semi-narrative		
ESRS 2 BP-2	17 a	List of sustainability matters assessed to be material (phase-in)	semi-narrative		
ESRS 2 BP-2	17 a	Disclosure of how business model and strategy take account of impacts related to sustainability matters assessed to be material	narrative		
ESRS 2 BP-2	17 b	Description of any time-bound targets set related to sustainability matters assessed to be material (phase-in) and	narrative		
ESRS 2 BP-2	17 c	Description of policies related to sustainability matters assessed to be material (phase-in)	narrative		
ESRS 2 BP-2	17 d	Description of actions taken to identify, monitor, prevent, mitigate, remediate or bring end to actual or potential	narrative		
ESRS 2 BP-2	17 e	Disclosure of metrics related to sustainability matters assessed to be material (phase-in)	narrative		
ESRS 2 GOV-1	21	Information about composition and diversity of members of administrative, management and supervisory bodies	narrative		
ESRS 2 GOV-1	21 a	Number of executive members	Integer		
ESRS 2 GOV-1	21 a	Number of non-executive members	Integer		
ESRS 2 GOV-1	21 b	Information about representation of employees and other workers	narrative		
ESRS 2 GOV-1	21 c	Information about member's experience relevant to sectors, products and geographic locations of undertaking	narrative		
ESRS 2 GOV-1	21 d	Percentage of members of administrative, management and supervisory bodies	Percent		
ESRS 2 GOV-1	21 d	Percentage of members of administrative, management and supervisory bodies	Percent		
ESRS 2 GOV-1	21 d	Board's gender diversity ratio	Percent	SFDR	
ESRS 2 GOV-1	21 e	Percentage of independent board members	Percent	SFDR	
ESRS 2 GOV-1	22	Information about roles and responsibilities of administrative, management and supervisory bodies	narrative		
ESRS 2 GOV-1	22 a	Information about identity of administrative, management and supervisory bodies or individual(s) within body responsible	narrative		
ESRS 2 GOV-1	22 b	Disclosure of how body's or individuals within body responsibilities for impacts, risks and opportunities are reflected	narrative		
ESRS 2 GOV-1	22 c	Description of managements role in governance processes, controls and procedures used to monitor, manage and	narrative		
ESRS 2 GOV-1	22 c i	Description of how oversight is exercised over management-level position or committee to which management's	narrative		
ESRS 2 GOV-1	22 c ii	Information about reporting lines to administrative, management and supervisory bodies	narrative		
ESRS 2 GOV-1	22 c iii	Disclosure of how dedicated controls and procedures are integrated with other internal functions	narrative		
ESRS 2 GOV-1	22 d	Disclosure of how administrative, management and supervisory bodies and senior executive management oversee	narrative		
ESRS 2 GOV-1	23	Disclosure of how administrative, management and supervisory bodies determine whether appropriate skills and	narrative		
ESRS 2 GOV-1	23 a	Information about sustainability-related expertise that bodies either directly possess or can leverage	narrative		
ESRS 2 GOV-1	23 b	Disclosure of how sustainability-related skills and expertise relate to material impacts, risks and opportunities	narrative		
ESRS 2 GOV-2	26 a	Disclosure of whether, by whom and how frequently administrative, management and supervisory bodies are informed	narrative		
ESRS 2 GOV-2	26 b	Disclosure of how administrative, management and supervisory bodies consider impacts, risks and opportunities	narrative		
ESRS 2 GOV-2	26 c	Disclosure of list of material impacts, risks and opportunities addressed by administrative, management and supervisory	narrative		
ESRS 2 GOV-2	AR 6	Disclosure of how governance bodies ensure that appropriate mechanism for performance monitoring is in place	narrative		V
ESRS 2 GOV-3	29	Incentive schemes and remuneration policies linked to sustainability matters for members of administrative, management and supervisory	semi-narrative		
ESRS 2 GOV-3	29 a	Description of key characteristics of incentive schemes	narrative		
ESRS 2 GOV-3	29 b	Description of specific sustainability-related targets and (or) impacts used to assess performance of members of administrative, management and supervisory	narrative		
ESRS 2 GOV-3	29 c	Disclosure of how sustainability-related performance metrics are considered as performance benchmarks or included	narrative		
ESRS 2 GOV-3	29 d	Percentage of variable remuneration dependent on sustainability-related targets and (or) impacts	Percent		
ESRS 2 GOV-3	29 e	Description of level in undertaking at which terms of incentive schemes are approved and updated	narrative		
ESRS 2 GOV-4	30; 32	Disclosure of mapping of information provided in sustainability statement about due diligence process	narrative	SFDR	
ESRS 2 GOV-5	36 a	Description of scope, main features and components of risk management and internal control processes and systems	narrative		
ESRS 2 GOV-5	36 b	Description of risk assessment approach followed	narrative		

# Produkt har ulike effekter over livsløpet:



# Mogleg metoderammeverk: Life cycle sustainability assessment (LCSA)

- Omfattande indikator-rammeverk for «bærekraftig utvikling» (jfr. FN)
- Hovudfokus på negative effekter, over heile livsløpet til eit produkt
- Bærekraftig utvikling:
  - **Sosiale effektar** (*Social LCA, S-LCA*)
  - **Miljøeffektar** (*Livsløpsvurdering, LCA*)
  - **Økonomiske effektar** (*Livsløpskostnader, LCC*)

Meir detaljert i følgjande slides.



# Social Life Cycle Assessment (UNEP)

Stakeholder categories	Worker	Local community	Value chain actors (not including consumers)	Consumer	Society	Children
Subcategories	<ol style="list-style-type: none"> <li>1. Freedom of association and collective bargaining</li> <li>2. Child labor</li> <li>3. Fair salary</li> <li>4. Working hours</li> <li>5. Forced labor</li> <li>6. Equal opportunities/discrimination</li> <li>7. Health and safety</li> <li>8. Social benefits/social security</li> <li>9. Employment relationship</li> <li>10. Sexual harassment</li> <li>11. Smallholders including farmers</li> </ol>	<ol style="list-style-type: none"> <li>1. Access to material resources</li> <li>2. Access to immaterial resources</li> <li>3. Delocalization and migration</li> <li>4. Cultural heritage</li> <li>5. Safe and healthy living conditions</li> <li>6. Respect of indigenous rights</li> <li>7. Community engagement</li> <li>8. Local employment</li> <li>9. Secure living conditions</li> </ol>	<ol style="list-style-type: none"> <li>1. Fair competition</li> <li>2. Promoting social responsibility</li> <li>3. Supplier relationships</li> <li>4. Respect of intellectual property rights</li> <li>5. Wealth distribution</li> </ol>	<ol style="list-style-type: none"> <li>1. Health and safety</li> <li>2. Feedback mechanism</li> <li>3. Consumer privacy</li> <li>4. Transparency</li> <li>5. End-of-life responsibility</li> </ol>	<ol style="list-style-type: none"> <li>1. Public commitments to sustainability issues</li> <li>2. Contribution to economic development</li> <li>3. Prevention and mitigation of armed conflicts</li> <li>4. Technology development</li> <li>5. Corruption</li> <li>6. Ethical treatment of animals</li> <li>7. Poverty alleviation</li> </ol>	<ol style="list-style-type: none"> <li>1. Education provided in the local community</li> <li>2. Health issues for children as consumers</li> <li>3. Children concerns regarding marketing practices</li> </ol>

# Social life cycle assessment: Bakgrunn

- UNEP (2021) Methodological sheets for the subcategories in Social life cycle assessment (S-LCA):  
[https://www.lifecycleinitiative.org/wp-content/uploads/2021/12/Methodological-Sheets\\_2021\\_final.pdf](https://www.lifecycleinitiative.org/wp-content/uploads/2021/12/Methodological-Sheets_2021_final.pdf)
- UNEP (2020) Guidelines for Social Life Cycle Assessment of Products and Organisations 2020:  
<https://wedocs.unep.org/20.500.11822/34554>

# Frå Methodological sheets (2021), s. 66

## 2.4 CULTURAL HERITAGE

### DEFINITION

Cultural heritage includes language, social and religious practices, knowledge and traditional craftsmanship, as well as cultural spaces and objects (e.g. burial grounds; natural, built and archaeological sites; historic cities, etc.). International human rights conventions secure the rights of individuals to preserve their cultural heritage. This includes practicing and revitalizing cultural traditions and religious beliefs that are respectful of human rights.

Organizations can more actively promote the preservation of cultural heritage by encouraging the sustainable use of traditional products and craftsmanship in their product design and production methods. This is especially relevant to agricultural production methods and clothing/craft design as well as the promotion of cultural tourism.

Cultural heritage enriches the social capital as a driving force for the cultural and creative sector and as a resource for economic growth, employment, and social cohesion by supporting the revitalization of urban and rural areas as well as promoting sustainable tourism.

### **Aim and approach of indicator assessment**

This subcategory assesses whether an organization respects local cultural heritage and recognizes that all community members have a right to pursue their cultural development.

# Frå Methodological sheets (2021), s. 66

## POLICY RELEVANCE

### RELEVANCE TO SUSTAINABLE DEVELOPMENT

Globalization can lead to the deterioration of cultural heritage as organizations enter new markets. Organizations should consider historical and evolving cultural traditions to be assets of communities. Organizations that recognize and engage with diverse groups of individuals will take important strides towards protecting the cultural integrity of local communities.



With this subcategory a contribution to SDG 11.4 "Strengthen efforts to protect and safeguard the world's cultural and natural heritage" can be measured. Additionally, this subcategory contributes directly and indirectly to the development of several other SDGs.

# Frå Methodological sheets (2021), s. 66-67

## INTERNATIONAL INSTRUMENTS

- [Convention for the Safeguarding of the Intangible Cultural Heritage](#)
- [Convention on Biological Diversity, Article 8\(j\)](#)
- [Convention on the Protection and Promotion of the Diversity of Cultural Expressions](#)
- [Global Reporting Initiative Standards](#)
- [ISO 26000 Guidance on Social Responsibility](#)
- [Norms on the Responsibilities of Transnational Corporations and Other Business Enterprises with Regard to Human Rights](#)

# Frå Methodological sheets (2021), s. 67

## Generic data source examples

- [Business & Human Rights Resource Centre country reports on discrimination](#), including racial/ethnic/caste/origin discrimination
- [UNESCO Country Reports on Cultural Heritage](#)
- [UNESCO Institute for Statistics database](#)
- [UNESCO List of Intangible Heritage in Urgent Need of Safeguarding](#)
- [U.S. Department of State Country Reports on Human Rights Practices](#)

# Frå Methodological sheets (2021), s. 67

## EXAMPLES OF INVENTORY INDICATORS AND DATA SOURCES

### Specific analysis

Inventory indicator	Data sources
Evidence of policies/management plan(s) in place to protect and/or support cultural heritage	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, management, and NGOs</li><li>• Review of organization-specific reports, such as GRI reports and Social Impact Assessments</li></ul>
Presence of organizational program to include cultural heritage expression in product design/production	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, employees, management, and NGOs</li><li>• Consultation of documents/reports</li></ul>
Presence of relevant organizational information to community members in their spoken language(s)	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, management, and NGOs</li><li>• Consultation of documents/reports</li></ul>
Presence of documented initiatives and activities oriented to support and promote cultural heritage (e.g., funding of cultural activities and events)	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, management, and NGOs</li><li>• Consultation of documents/reports</li></ul>

# Frå Methodological sheets (2021), s. 67

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Presence of organizational program to include cultural heritage expression in product design/production	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, employees, management, and NGOs</li><li>• Consultation of documents/reports</li></ul>
Presence of relevant organizational information to community members in their spoken language(s)	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, management, and NGOs</li><li>• Consultation of documents/reports</li></ul>
Presence of documented initiatives and activities oriented to support and promote cultural heritage (e.g., funding of cultural activities and events)	<ul style="list-style-type: none"><li>• Site visit or site-specific audit</li><li>• Interviews with community members, management, and NGOs</li><li>• Consultation of documents/reports</li></ul>



# Social LCA – er det relevant?

- Social LCA meir relevant for å vurdera «globale» selskaper?
- At cultural heritage finnes i effektkategoriene til S-LCA kan uansett bekrefte at dette er generelt relevant.

# Miljø/LCA

- Relevante aspekt:
  - Levetid/robustheit
  - Utbyte
  - Høve til reparasjon
  - Høve til materialgjenvinning/sirkularitet
- Relevante LCA-indikatorer:
  - Klimagassutslipp
  - Arealbruk/Arealbruksendring
  - Overgjødsling/eutrofiering
  - Toksisitet?
  - Økologisk effekt?

# European Footprint-indikatorer, miljø (LCA)

Impact category	Unit
Climate change	kg CO2 eq
Ozone depletion	kg CFC11 eq
Ionising radiation	kBq U-235 eq
Photochemical ozone formation	kg NMVOC eq
Particulate matter	disease inc.
Human toxicity, non-cancer	CTUh
Human toxicity, cancer	CTUh
Acidification	mol H+ eq
Eutrophication, freshwater	kg P eq
Eutrophication, marine	kg N eq
Eutrophication, terrestrial	mol N eq
Ecotoxicity, freshwater	CTUe
Land use	Pt
Water use	m3 depriv.
Resource use, fossils	MJ
Resource use, minerals and metals	kg Sb eq
Climate change - Fossil	kg CO2 eq
Climate change - Biogenic	kg CO2 eq
Climate change - Land use and LU change	kg CO2 eq
Human toxicity, non-cancer - organics	CTUh
Human toxicity, non-cancer - inorganics	CTUh
Human toxicity, non-cancer - metals	CTUh
Human toxicity, cancer - organics	CTUh
Human toxicity, cancer - inorganics	CTUh
Human toxicity, cancer - metals	CTUh
Ecotoxicity, freshwater - organics	CTUe
Ecotoxicity, freshwater - inorganics	CTUe
Ecotoxicity, freshwater - metals	CTUe

# EPS-metoden (LCA)

Impact category	Unit
Crop growth capacity	kg
Production capacity for fruit&vegetables	kg
Wood growth capacity	kg
Fish&meat production capacity	kg
Drinking water	kg
Irrigation water	kg
Species extinction	NEX
YOLL	PersonYr
Malnutrition	PersonYr
Diarrhea	PersonYr
Gravation of angina pectoris	PersonYr
Working capacity	PersonYr
Asthma cases	PersonYr
COPD severe	PersonYr
Cancer	PersonYr
Skin cancer	PersonYr
Low vision	PersonYr
Poisoning	PersonYr
Intellectual disability: mild	PersonYr
Osteoporosis	case
Renal dysfunction	case
Housing availability	m2
Separations	case
Depletion of abiotic resources	kg

# LCA: inventar-databasar – døme:

- Agribalyse
  - Agri-footprint
  - Ecoinvent
- 
- Databasane kan syna kor miljø-relevante utslepp og innverknad kjem frå, og standard LCA kan bearbeida dette vidare til konkrete potensielle miljøkonsekvensar.

Outputs to technosphere: Products and co-products	Amount	Unit	Quantity	Allocation %	Waste type	Category	Comment
Hemp, grain, Champagne, at farm gate {FR} U	1000	kg	Mass	100 %	not defined	Agricult...Transformation	Allocation ÃfÃ©conomique 41 % entre paille et graine, sauf flux ÃfÃ©nergie et carbone

Outputs to technosphere. Avoided products	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
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# (AGRIBALYSE 3.11)

Inputs from nature	Subcompartment	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
Occupation, annual crop	land	4,80E3	m2a	Undefined				
Transformation, to annual crop	land	185	m2	Undefined				
Transformation, from permanent crop	land	22,1	m2	Undefined				
Transformation, from annual crop	land	163	m2	Undefined				
Carbon dioxide, in air		1415	kg	Undefined				
Energy, gross calorific value, in biomass		17459	MJ	Undefined				

Inputs from technosphere: materials/fuels	Amount	Unit	Distribution	SD2 or 2SD	Comment
Land use change, soil organic carbon changes for annual crops and temporary meadows {FR} U	4800	m2a	Lognormal	1,05407	Carbon flows linked to the trend in stocks by land use category (field crops, temporary meadows)
Additional storage of soil organic carbon due to farming practice, Insertion and lengthening of intermediate crops {FR} U	4800	m2a	Lognormal	1,05407	Additional carbon storage linked to farming practices which favour the storage of soil carbon
Ammonium nitrate phosphate (ANP), as P2O5, at plant {RER} - Adapted from WFLDB U	6,23	kg	Undefined		
Urea, as N, at plant {RER} - Adapted from WFLDB U	6,44	kg	Undefined		
Potassium chloride, as K2O, at plant {RER} - Adapted from WFLDB U	56,7	kg	Undefined		
[Dummy] Organic or farm manure, as N {FR} U	30	kg	Undefined		
[Dummy] Organic or farm manure, as P2O5 {FR} U	32,8	kg	Undefined		
[Dummy] Organic or farm manure, as K2O {FR} U	24,4	kg	Undefined		
Dithiocarbamate-compound {RER} production   Cut-off, S - Copied from Ecoinvent U	0,0295	kg	Undefined		
Diesel {Europe without Switzerland} market for   Cut-off, S - Copied from Ecoinvent U	1,42	kg	Undefined		
Diesel combustion, in tractor {FR} U	1,42	kg	Undefined		
Transport, freight train {Europe without Switzerland} market for   Cut-off, S - Copied from Ecoinvent U	0	tkm	Lognormal	2,01	
Transporting to farm, with 2 axle trailer (15 t) {FR} U	0,0421	hr	Undefined		
Fertilizing, slurry, with tanker {FR} U	0,0177	hr	Undefined		
Transport, freight, inland waterways, barge {RER} processing   Cut-off, S - Copied from Ecoinvent U	12,3	tkm	Undefined		
Transport, freight, lorry 16-32 metric ton, EURO5 {RER} transport, freight, lorry 16-32 metric ton, EURO5   Cut-off, S - Copied from Ecoinvent U	31,5	tkm	Undefined		
Fertilizing or plant protection, with sprayer, 2500 l {FR} U	0,0328	hr	Undefined		
Fertilizing, solid manure or compost (charging and spreading), with frontal bucket and 5t spreader {FR} U	0,507	hr	Undefined		
Fertilizing, with spreader, 2500 l {FR} U	0,0492	hr	Undefined		
Harrowing, with rotary harrow (standard equipment) {FR} U	0,574	hr	Undefined		
Harvesting, with combine harvester {FR} U	0,275	hr	Undefined		

# (AGRIBALYSE 3.11)

Mowing, with rotary mower 7m {FR} U	0,0779	hr	Undefined		
Plant protection, chemical weeding, with atomiser 400 l {FR} U	0,205	hr	Undefined		
Rolling, with roller 9m {FR} U	0,082	hr	Undefined		
Sowing or planting, with classic seeder and harrow {FR} U	1,07	hr	Undefined		
Stubble ploughing, with stubble share 1,5m {FR} U	0,176	hr	Undefined		
Transporting, with forage flatbed {FR} U	0,164	hr	Undefined		
Baling, with round baler (straw) {FR} U	0,41	ha	Undefined		
Haying, with tedder {FR} U	0,205	hr	Undefined		
Transporting, with forage flatbed {FR} U	0,164	hr	Undefined		

Inputs from technosphere: electricity/heat Amount Unit Distribur

### Outputs

Emissions to air	Subcompartment	Amount	Unit	Distribution	SD2 or 2SD	Min	Ma	Comment
Thiram	low. pop.	0,00295	kg	Undefined				Exchange amount calculated with OLCA-Pest, with buffer. Crop: Oil-Bearing crops. Pesticide class: Fun.
Ammonia	low. pop.	5,9	kg	Undefined				
Carbon dioxide	low. pop.	10,2	kg	Undefined				
Dinitrogen monoxide	low. pop.	0,234	kg	Undefined				
Dinitrogen monoxide	low. pop.	0,67	kg	Undefined				
Nitrogen oxides	low. pop.	0,983	kg	Undefined				

Emissions to water	Subcompartment	Amount	Unit	Distribution	SD2 or 2SD	Min	Max	Comment
Thiram	river	4,979786743560782E-7	kg	Undefined				Exchange amount calculated with OLCA-Pest, with buffer. Crop: Oil-Bearing crops. Pesticide class: Fun.
Nitrate	groundwater	56,6	kg	Undefined				
Phosphate	groundwater	0,103	kg	Undefined				
Phosphate	river	0,362	kg	Undefined				
Phosphorus	river	0,31	kg	Undefined				
Cadmium (II)	groundwater	0,0162	g	Undefined				
Cadmium (II)	river	0,0701	g	Undefined				
Chromium, ion	groundwater	8,24	g	Undefined				
Chromium, ion	river	14,6	g	Undefined				
Copper, ion	groundwater	1,59	g	Undefined				
Copper, ion	river	6,27	g	Undefined				
Lead (II)	groundwater	0,0951	g	Undefined				
Lead (II)	river	3,18	g	Undefined				

# (AGRIBALYSE 3.11)

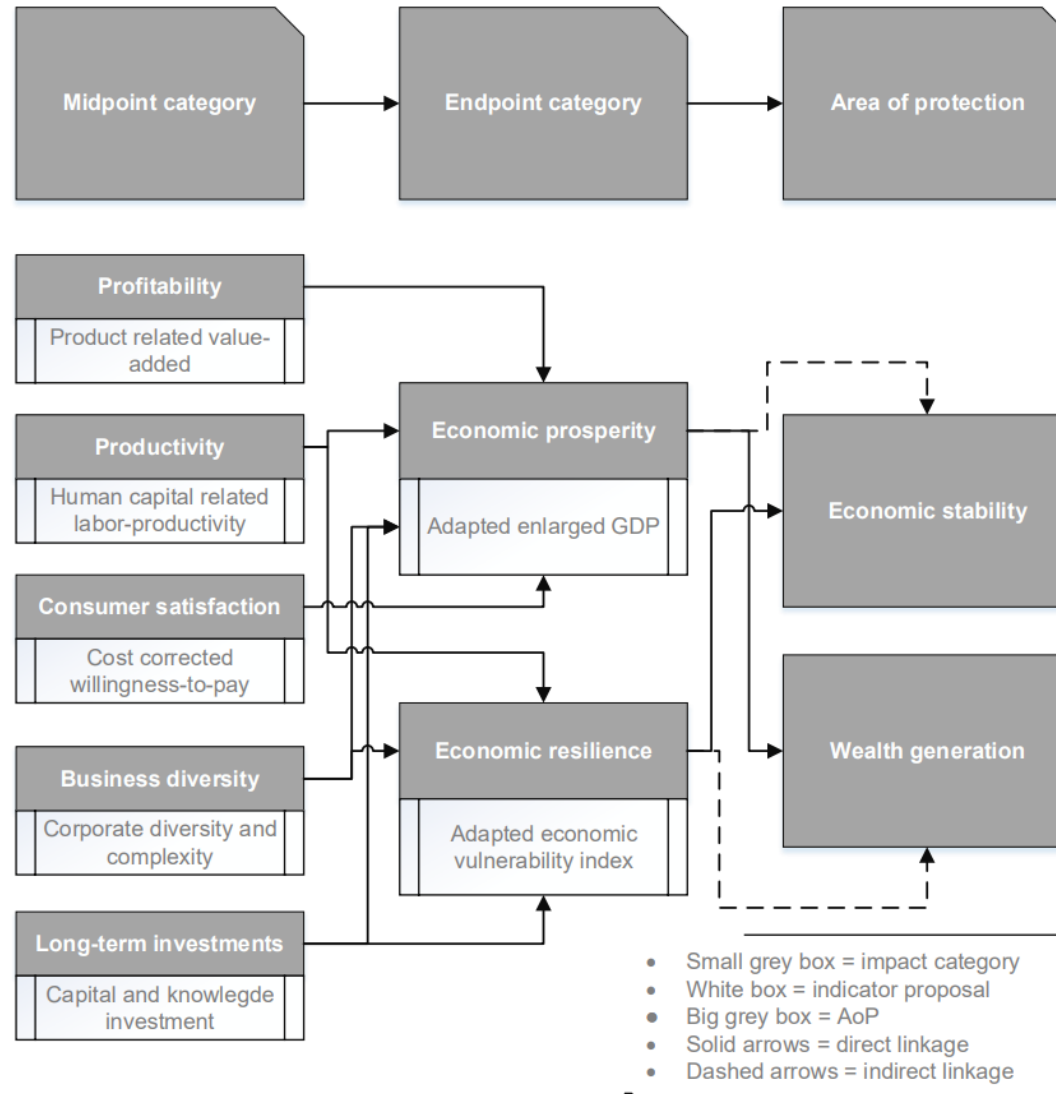
Lead (II)	river	3,18	g	Undefined				
Mercury (II)	groundwater	0,0048	g	Undefined				
Mercury (II)	river	0,0196	g	Undefined				
Nickel (II)	river	6,23	g	Undefined				
Zinc (II)	groundwater	14,7	g	Undefined				
Zinc (II)	river	21,2	g	Undefined				
<b>Emissions to soil</b>								
	<b>Subcompartment</b>	<b>Amount</b>	<b>Unit</b>	<b>Distribution</b>	<b>SD2 or 2SD</b>	<b>Min</b>	<b>Max</b>	<b>Comment</b>
Thiram	agricultural	0,0025200235175	kg	Undefined				Exchange amount calculated with OLCA-Pest, with buffer. Crop: Oil-Bearing crops. Pesticide class: Fun.
Thiram	forestry	1,4441381556326	kg	Undefined				Exchange amount calculated with OLCA-Pest, with buffer. Crop: Oil-Bearing crops. Pesticide class: Fun.
Thiram	agricultural	0,0240150371221	kg	Undefined				Exchange amount calculated with OLCA-Pest, with buffer. Crop: Oil-Bearing crops. Pesticide class: Fun. This exchange is a placeholder for the amount destined for the Crop compartment.
Cadmium (II)	agricultural	0,0	g	Undefined				Original amount <0, Metal flow looping problem identified. Interim approach: set to 0 for Agribalyse 3.1, september 2022. Correction work in progress. Original amount was : -0,017
Chromium, ion	agricultural	0,0	g	Undefined				Original amount <0, Metal flow looping problem identified. Interim approach: set to 0 for Agribalyse 3.1, september 2022. Correction work in progress. Original amount was : -19,6
Lead (II)	agricultural	0,0	g	Undefined				Original amount <0, Metal flow looping problem identified. Interim approach: set to 0 for Agribalyse 3.1, september 2022. Correction work in progress. Original amount was : -1,72
Mercury (II)	agricultural	0,0167692307692	g	Undefined				
Nickel (II)	agricultural	0,0	g	Undefined				Original amount <0, Metal flow looping problem identified. Interim approach: set to 0 for Agribalyse 3.1, september 2022. Correction work in progress. Original amount was : -2,02
Zinc (II)	agricultural	263,0	g	Undefined				



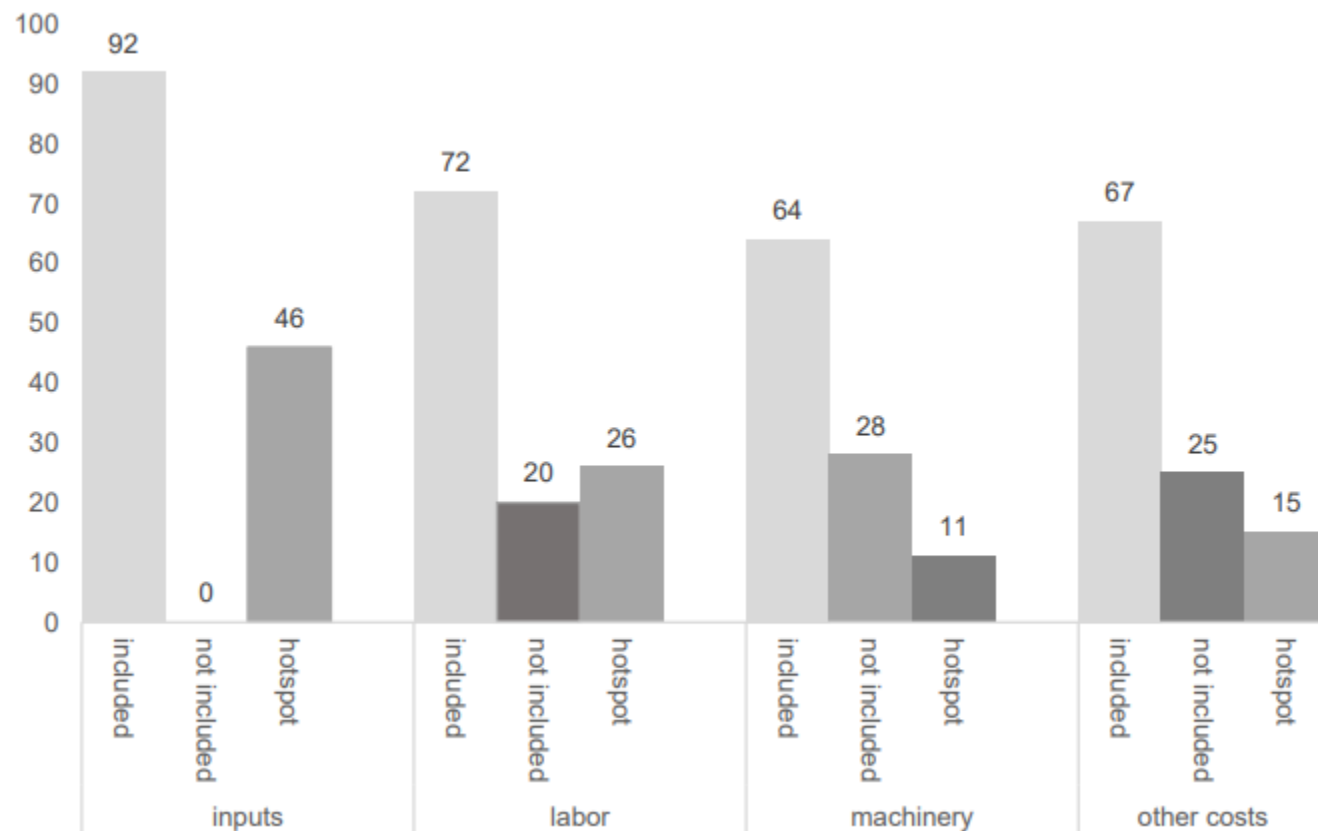
# Økonomiske indikatorar

- Pris
- Bedriftsøkonomisk lønsemd
- Livsløpskostnader
  - Swarr et al. (2011) SETAC guidelines for life cycle costing
- Neugebauer et al. (2016) From life cycle costing to economic life cycle assessment—introducing an economic impact pathway (komplisert)
- Degetier et al. (2022) Life cycle cost analysis of agri-food products: A systematic review
- I ein norsk kontekst er sosialøkonomisk lønsemd gjerne etterspurd.

# Fra Neugebauer et al. (2016)



# Degetier et al. (2022)



PRODUCT	INCLUDED COSTS				
	inputs	labor	machinery	other	externalities
<b>Annual crop</b>					
Baquero et al. (2011)	x	x	x	x	
Baum and Bienkowski (2020)	x*	x	x	x	
Brandão et al. (2010)	x*		x		
Canaj et al. (2021a)	x*				x*
Canaj et al. (2022)	x*		x		x*
Dorr et al. (2017)	x*				
Ekener et al. (2018)	x	x	x		
Escobar et al. (2022)	x*	x*	x*	x	
Fenollosa et al. (2014)	x*	x*	x*		
Holka (2020)	x	x	x	x	
Holka and Bieńkowski (2020)	x*	x	x*	x	
Hong et al. (2015)	x*	x*	x	x*	
Jirapornvaree et al. (2021)	x	x	x	x	
Kim et al. (2018)	x*		x	x	
Lask et al. (2020)	x*	x	x	x*	

# RESULTAT, workshop 16.11.23

Rammeverk	Omfang	Relevans
SN sine berekraftsmål	Berekraftig utvikling generelt	Sosialt, økonomisk, miljømessig
ISO 37101:2016	Berekraftig utvikling i samfunn	Nemnd som potensielt viktig på workshop
UNEP Guidelines for Social Life Cycle Assessment of Products and Organisations 2020 (UNEP 2020)	Sosial livsløpvurdering, kan òg inkludera verdikjeda til produktet	Særleg lokalsamfunn som stakeholder-kategori, potensielt meir
Methodological Sheets for Subcategories in Social Life Cycle Assessment (UNEP/Life Cycle Initiative 2021)	Sosial livsløpvurdering, kan òg inkludera verdikjeda til produktet - metodiske forslag	Særleg relevant for indikatoren Lokalsamfunn→Kulturarv. SDG 11.4 spesifikt nemnd i rapporten.

# Resultat - workshop 16.11.23

	Berekraftmål		Delmål
8	Anstendig arbeid og økonomisk vekst	8.8	Arbeidarrettar og arbeidsmiljø
		8.9	Berekraftig turistnæring
11	Berekraftige byar og lokalsamfunn	11.4	Kulturarv
12	Ansvarleg forbruk og produksjon	12.5	Redusera avfallsmengda
		12.b	...turistnæring som fremjar lokal kultur og lokale produkt
13	Stoppa klimaendringane	13.1	Klimatilpassing og klimaresiliens
17	Samarbeid for å nå måla	?	<i>[Delmåla handlar dels om kor naudsynt det er med globalisering av handel og å utvikla harmoniserte tilnærmingar til berekraft]</i>

# Observasjonar når det gjeld metode

	Delmål	Metode (foreløpige forslag)
8.8	Arbeidarrettar og arbeidsmiljø	UNEP/LCI (2021) S-LCA Methodological sheets - stakeholder group: Workers
8.9	Berekraftig turistnæring	som 12.b
11.4	Kulturarv	<ul style="list-style-type: none"> <li>• UNEP/LCI (2021) S-LCA Methodological sheets - stakeholder group: Local communities</li> <li>• ISO 37101: 2016 Sustainable development in communities</li> <li>• Immateriell kulturarv</li> </ul>
12.5	Redusera avfallsmengda	<ul style="list-style-type: none"> <li>• Operasjonelt: Miljøfyrtårn (ESG)</li> <li>• Kunnskapsmessig: LCA (ISO 14044) og sirkulære indikatorar</li> </ul>
12.b	...turistnæring som fremjar lokal kultur og lokale produkt	som 11.4
13.1	Klimatilpassing og klimaresiliens	Kommuneplanlegging, mer overordnet ISO 14090-serien
(17)	Samarbeid for å nå måla	<ul style="list-style-type: none"> <li>• Internasjonalt samarbeid, reelt tilgjenge til marknad</li> <li>• «Det er noe bærekraftig med at folk reiser og besøker kulturminner og andre kulturer»</li> </ul>

# Diskusjonspunkt

## Økonomisk berekraft

Kva set (og heldt) ting i gong?

## Sosial berekraft

Utvikling av lokal identitet og stoltheit viktig pillar

Fråver av negative sosiale effektar er ikkje ein garanti for at noko vert langvarig – inspirasjon, motivasjon og samhald kan vera viktig.

## Miljømessig berekraft

### Klimagassutslepp

- viktig i seg sjølv
- nokre gonger nytta som «proxy» for total miljøskade

### Arealbruk / arealbruksendring

- svært store direkte og indirekte miljøinngrep
- arealbruksendring kan ha stor klimaeffekt
- viktig ved overgang til bioøkonomi

### Eutrofiering

- viktig ved overgang til bioøkonomi
- overgjødsling er eit oversett miljøproblem

**KOMPARATIVE INDIKATORAR:** Det kan òg vera viktig å få med indikatorar der andre løysingar har betre berekraft-prestasjon enn handverkstradisjonar/handverksprodukt.



# Øvrige dokument nemnde i DREIS-workshopen

- Meld. St. 16 (2019-2020): Nye mål i kulturmiljøpolitikken — Engasjement, bærekraft og mangfold
- Riksantikvaren sin klimastrategi for kulturminneforvaltning
- med fleire!

# Andre aktivitetar og initiativ

- I tillegg var ei rekke *initiativ* tema under workshopen
  - Det ser særskilt viktig ut å dyrka og ivareta slike initiativ og råma deira
  - Fleire interessante innspel om råmer:
    - Muleg å ankerfesta ein stad sin identitet og stoltheit
    - Innhald til turistar so dei kan ha opplevingar
    - Sosiale aktivitetar for tilflyttande
    - Ei rekke case,
      - Materialbank
      - Kartlegging av bioressursar
      - Praktiske og teoretiske perspektiv mellom anna frå PhD-kandidat Lisbeth Iversen
      - Kva set ting i gong?
        - Finansiering
        - Det immaterielle?

# Referansar

- Alawattage, C., Jayathileka, C., Hitibandara, R., Withanage, S. (2023) Moral economy, performative materialism, and political rhetorics of sustainability accounting. *Critical perspectives on accounting* 95. <https://doi.org/10.1016/j.cpa.2022.102507>
- EFRAG (2023) First Set of draft ESRS. <https://www.efrag.org/lab6>. Vitja 16.11.2023
- European Commission (2023) The Commission adopts the European Sustainability Reporting Standards. [https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31\\_en](https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31_en). Vitja 16.11.2023
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- Mengistu, A. T., Panizzolo, R. (2023) Analysis of indicators used for measuring industrial sustainability: a systematic review. *Environment, Development and Sustainability* 25: 1979-2005. <https://doi.org/10.1007/s10668-021-02053-0>
- Xue, J., Walnum, H. J., Aall, C., Næss, P. (2017) Two Contrasting Scenarios for a Zero-Emission Future in a High-Consumption Society. *Sustainability* 9(1): 20. <https://doi.org/10.3390/su9010020>