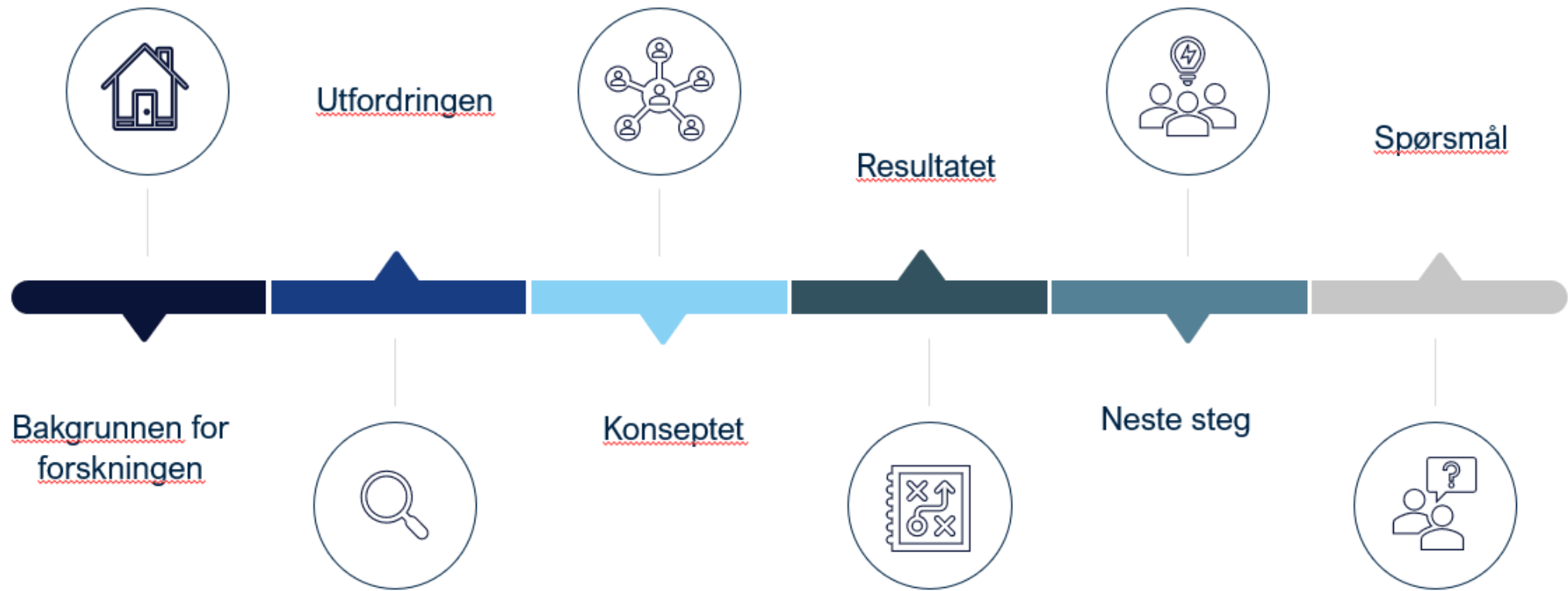


The Port Environmental Performance Index (PEPI)

Et strategisk verktøy for målrettet og offensiv utvikling av bærekraftige havner

Bjørnar Thorsen
Prosjektleder SETS II

Agenda



Bakgrunnen for forskningen

SETS II



Reduksjon av CO₂ utslipp i nordiske havner 2030 2050



Elektrifisering av nordiske havner



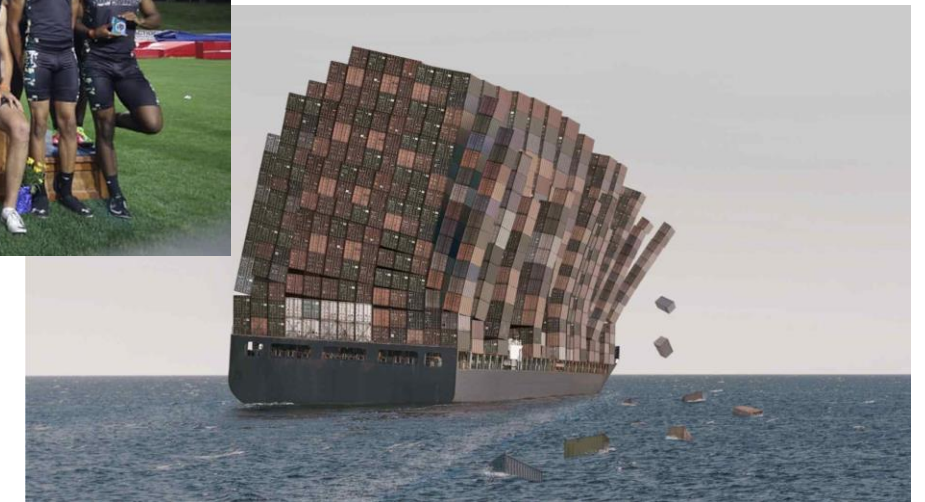
Bærekraftige strategier for nordiske havner



Norges mest miljøvennlige havn

Visjon og Strategi

- Karmsund Havn
- Larvik Havn
- Oslo Havn (Verden)
- Bergen Havn
- Trondheim Havn
- Drammen Havn
- Kristiansand Havn
- Risavika Havn
- Moss Havn
- etc.....



*"People can't respond to information they don't have."
(Meadows, 1998)*



Det moralske imperativet ved
bærekraftig utvikling

eller


Business as usual?



Utfordringen

- Økte krav og forventninger
- Usikkerhet
- Unøyaktig informasjon





Hva med det åpenbare?

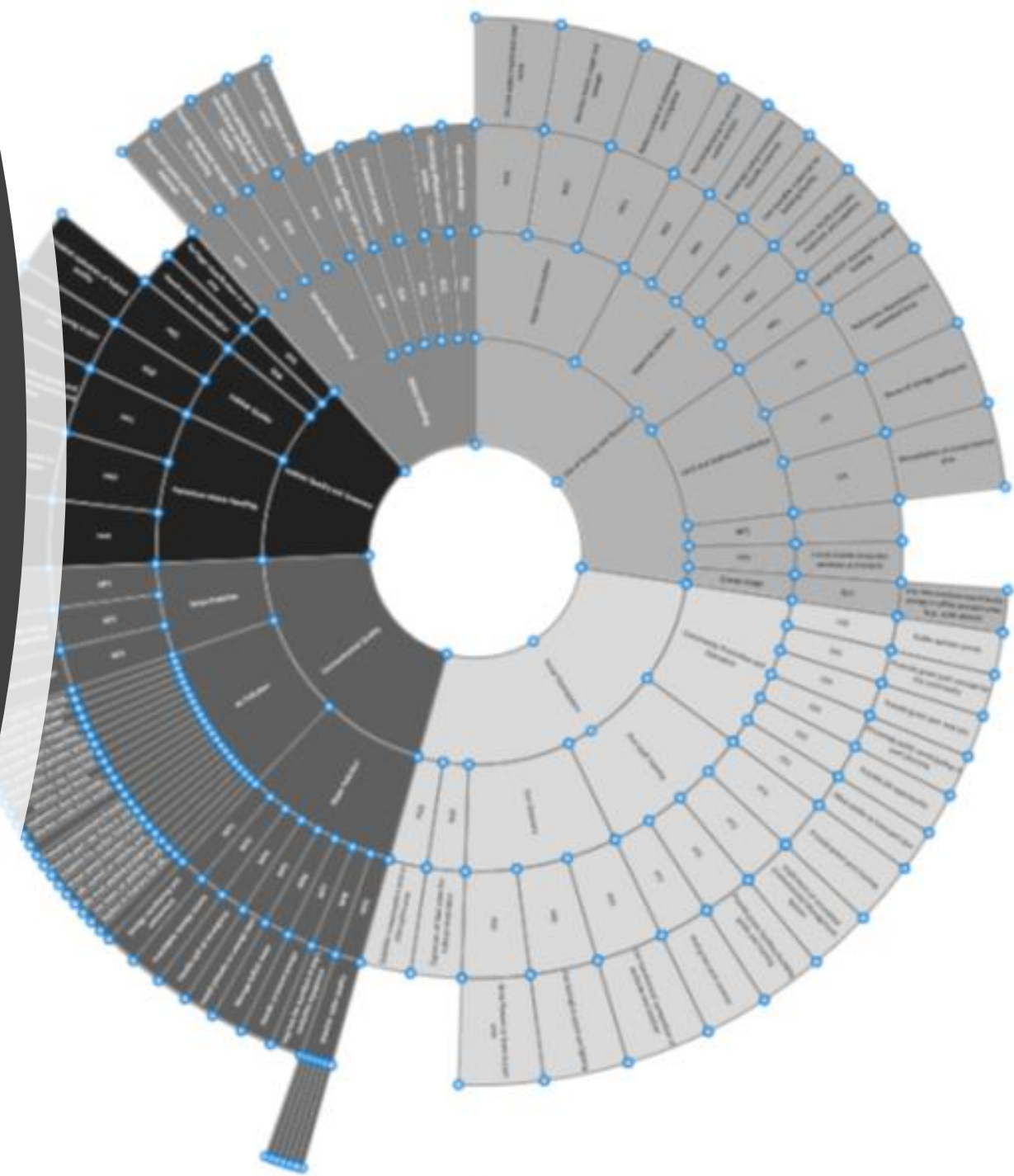
- Klimaforandringer
- Areal begrensninger
- Befolkningsvekst og endret demografi
- Behovet for å takle forurensning av luft, vann og grunn
- Reguleringsmål
- Politiske mål, f.eks. SDG, de-carbonization
- Kunstig intelligens, blokkjede og automatisering
- Verdier og etikk

Er Business as usual levedyktig for havnene om 5/10/25/50 år?

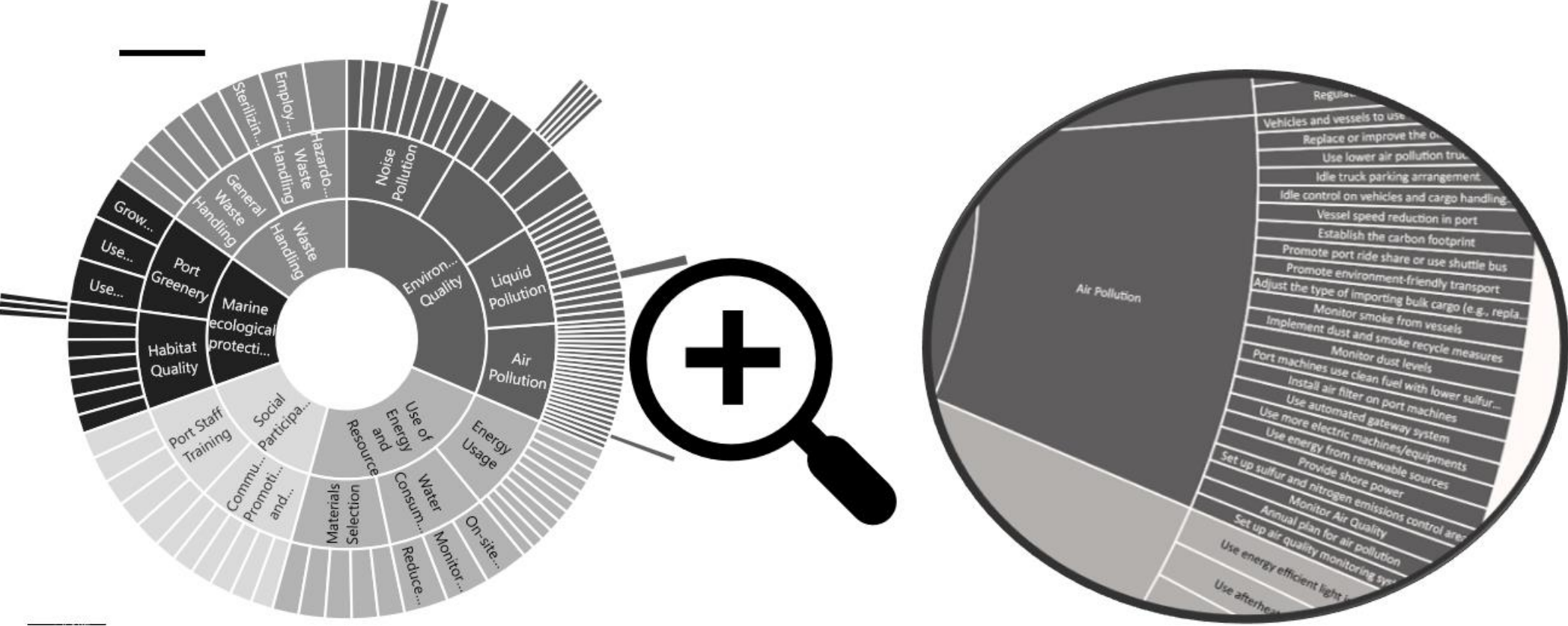


PEPI Modellen

- Et strategisk verktøy
- Et multidimensjonelt rammeverk
- En strategisk tilnærming

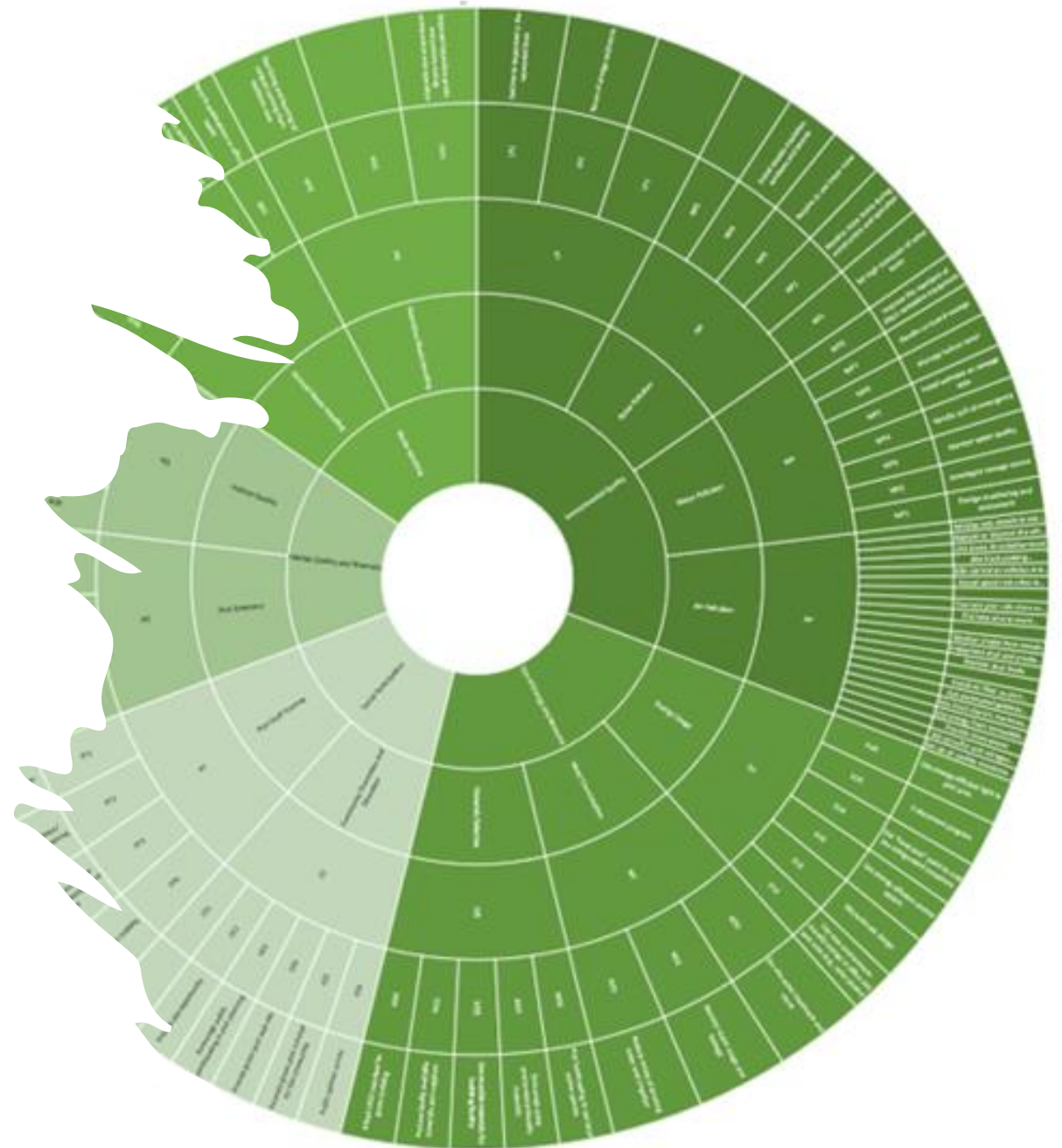


Den konseptuelle PEPI -modellen med detaljerte handlinger av elementet i luftforurensning forstørret.



De generelle målene for PEPI modellen er:

- Bidra til en miljøvennlig og bærekraftig beslutningsprosess for havner
- Forbedre havnepolitikk, plan og programkvalitet
- Styrke og legge til rette for havners miljøvurderinger
- Fremme nye metoder for å ta beslutninger i havnen
- Visuelt og Transparent



Resultatet

- Hver havn er unik
- Miljømåling av havner er komplisert
- Dårlig definisjon av miljømessige KPI -er
- Det er et større sprik i havnemiljøkunnskap
- Det er behov for et systematisk og forståelig rammeverk





PEPI -modellen som brukes i en strategisk tilnærming har tre veldig konkrete mål:

- Integrasjonsfunksjonen
- Vurderingsfunksjonen
- Valideringsfunksjonen



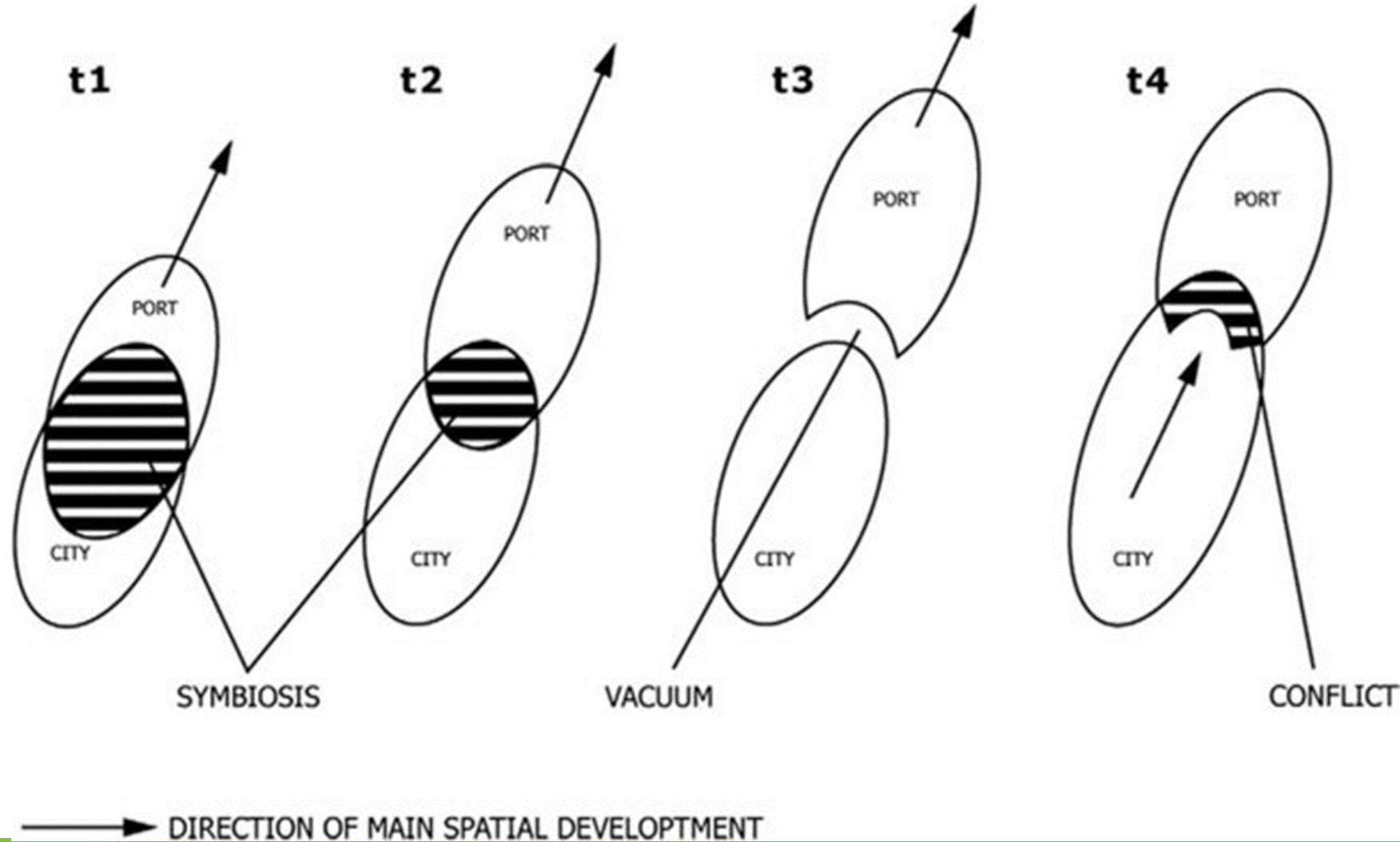


PEPI kan bidra til :

- Et strategisk syn innenfor et bærekraftig rammeverk
- Å identifisere, velge og begrunne miljø- og utviklingsmål
- Oppdage strategiske miljøutfordringer og muligheter i havna
- Sikre deltakende og transparente prosesser
- Fremme integrerte beslutninger
- Visualisering

Neste fase

- Testing i virkeligheten
- Implementering
- Operasjonalisering
- Indikatorpilot
- Interaktiv modell
- WWW



FORHOLDET MELLOM HAVN OG KOMMUNE/EIER

“Port-City Symbiotic Collaboration in Norway” by Joanne Gamiao 2022

Forholdet mellom havn og kommune/eier

- Ustabil forhold mellom havn og kommune
 - Uklar kommunikasjon
 - Upresis rollebevissthet
 - Manglende samarbeid
 - Politisk påvirkning
 - Arealbruk
 - Miljøspørsmål som støy/trafikk

Port-City Symbiotic Collaboration in Norway

The port-city relationship has deteriorated over time since the early 20TH century. The need for land, pollution, social welfare, and fast-paced globalization contribute to the evolution of the port-city relationship.

The study has identified the challenges of achieving port-city symbiosis and the drivers for a symbiotic collaboration in business development and project implementation. In addition, the study analyzes the relationship between municipalities and small and medium landlord ports in Norway located inside or near the city center and the community.

It is crucial to have a consistent and honest dialogue, commitment to cooperation, and competent trust to create a symbiotic collaboration. Thus, exerting focus on sustainability as a starting point allows synergy. Furthermore, it builds trust among city/state politicians and the community to cooperate, openly communicate, collaborate, and be innovative in achieving port-city sustainability goals

The result of the study underline two relevant themes, i.e., areas of conflict/challenges and drivers in working symbiotically. The port-city relationship in Norway is unstable due to unclear communication, imprecise role awareness, failure to cooperate, political influence, land use, and environmental issues such as noise/traffic. On the other hand, it also shows that symbiotic collaboration is achievable through consistent dialogue and cooperation, a clear role, and acknowledging competence, shared vision, and sustainability as a starting point. It is relevant to emphasize that symbiotic collaboration is achievable in large ports and small-medium landlord ports regardless of whether it is commercialized or corporatized.

The findings also show that few ports and municipalities in Norway are interdependent or in synergy toward achieving a common goal.









Indeed, ports in Norway are likely to achieve great collaborative relationships; however, it boils down to one's commitment to cooperation, honesty in communication, and trust in creating value for each other. As stated by Patrick Verhoeven (2021), it requires government-owned ports' input to establish trust in sharing data or information. Thus, trust competency is vital in building the relationship between the port authorities and municipalities. Lastly, the non-response and decline for interviews of four municipalities show the city's lack of engagement in improving relationships.

Table 1: Evolution of the port city interface (Hoyle, 1989;1998)

STAGE	SYMBOL	PERIOD	CHARACTERISTICS
I Primitive port/city		Antient/modern to 18 th century	Close spatial and functional association between city and port
II Expanding port/city		18 th , early 20 th century	Rapid commercial / industrial growth forces port to develop beyond city confines
III Modern industrial port/city		Mid 20 th century	Industrial growth and introduction of containers / ro-ro require separation / space
IV Retreat from the waterfront		1960s - 1980s	Changes in maritime technology reduce growth of separate maritime industrial development areas
V Redevelopment of the waterfront		1970s - 1990s	Large-scale modern port consumes large areas of land / water space, urban renewal of original core
VI Renewal of port/city links		1990s - 2000s	Globalization and intermodalism transforms port roles, port-city associations renewed; urban redevelopment enhances integration

Samarbeid er oppnåelig

- Tett dialog og samarbeid
- Tydelig roller
- Anerkjennelse av kompetanse
- Felles visjon/strategi (feks. miljø)
- Bærekraft som utgangspunkt
- Godt utgangspunkt for samarbeid er:
 - Forpliktelse til samarbeid
 - Ærlighet i kommunikasjon
 - Tillit til å skape verdier for hverandre

STAGE	SYMBOL  City  Port	PERIOD	CHARACTERISTICS
I Primitive port/city		Ancient/medieval to 19 th century	Close spatial and functional association between city and port
II Expanding port/city		19 th - early 20 th century	Rapid commercial / industrial growth forces port to develop beyond city confines
III Modern industrial port/city		Mid-20 th century	Industrial growth and introduction of containers / ro-ro require separation / space
IV Retreat from the waterfront		1960s – 1980s	Changes in maritime technology induce growth of separate maritime industrial development areas
V Redevelopment of the waterfront		1970s – 1990s	Large-scale modern port consumes large areas of land / water space, urban renewal of original core
VI Renewal of port/city links		1980s – 2000+	Globalization and intermodalism transform port roles, port-city associations renewed; urban redevelopment enhances integration

Takk for oppmerksomheten!

Bjørnar Thorsen

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