MEETING POINT URBANMAGMA MARCH 18-19 2015

Milan Obradoviç

Deputy mayor of infrastructure and environment

Malmö Stad



MEETING POINT URBANMAGMA MARCH 18-19 2015

Urban Magma - propelling the region into a centre of excellence for Sustainable Cities

Per Simonsson

Managing director • Sustainable business hub

Liisa Fransson

R&D manager • Kraftringen

MEETING POINT URBANMAGMA MARCH 18-19 2015

Keynote – Sustainable Cities – innovation and sustainable growth, the Swedish perspective

Charlotte Brogren

Director general • Vinnova

Innovation and sustainable growth,

the Swedish perspective

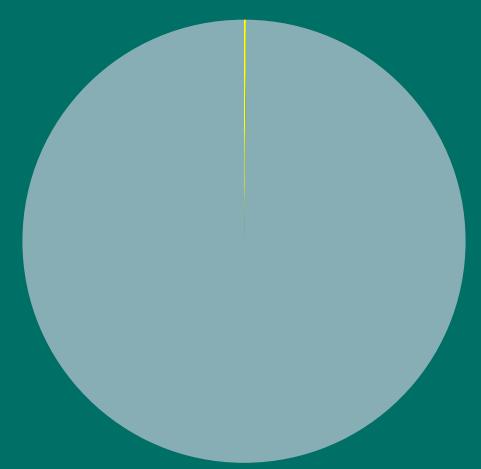
History...



VINNOVA



Sweden: 0,14% of the world's population



20 cities in the world have a larger population than Sweden



VINNOVA Raison de être







1987

- Berlin wall
- IBM was a hardware company
- Telephone was a place
- Big Brother was a person in a book
- Hilton was a Hotel



2002 - these companies didn't exist







Of the world's 500 largest enterprises more than 30% are gone in 10 years



Bild 15





We are facing a number of grand challenges











It took:

Rom

Vienna

Vancouver 115 years

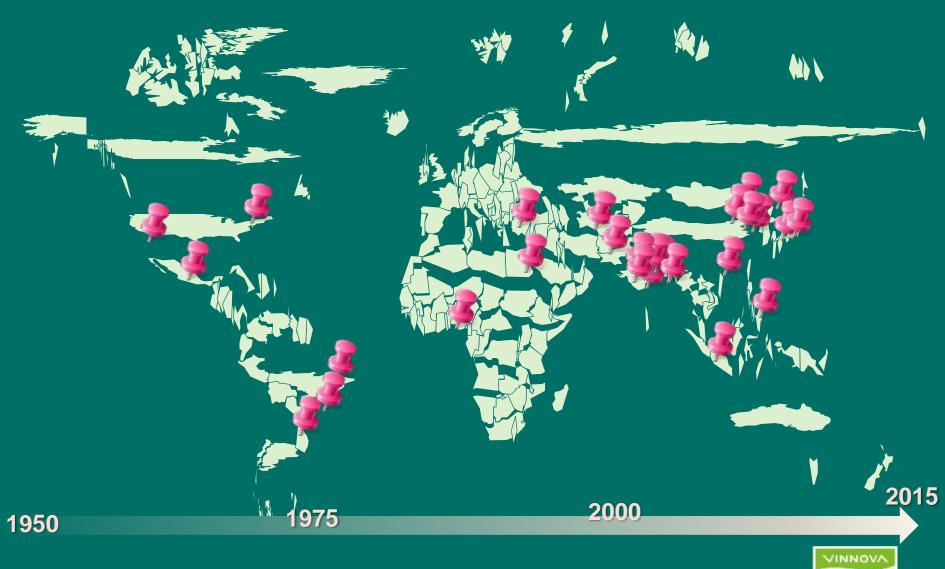
Shenzhen 20 years

....to reach a population of 2 million

2000 years

00 years

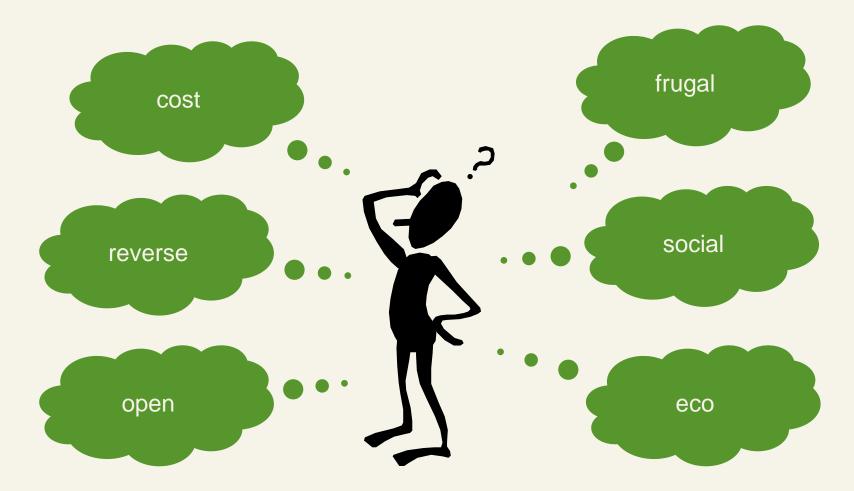
Cities with a population of +10 million







2015-03-27 Bild 20



Technological innovation alone will not be enough to meet the challenges of the 21st century





...innovation is very much about people and leadership!





This requires new ways of working together



Sustainable Cities excellent platform for innovation



How do we manage waste?

How to handle water management of tomorrrow?

How can waste water become an asset?

How can ICT help us with more safe drinking water?

How to integrate drain water into an eco cycle?



How can the traffic be better managed?

How do we transport goods in a sustainable way?

Better infrastructu passenger transpo

How do we integrate green areas

How to find sustainable restauration methods ?

How to improve the sustainability of tourism?

How to develop sustainable cities in a cold climate?



MALMÖ From industrial area to city of tomorrow

Think differently



Swedish Governmental Agency for Innovation Systems

MEETING POINT URBANMAGMA MARCH 18-19 2015

Keynote

– Circular Reference – How the chain of companies, research institutes, and (port) authorities can kickstart the circular economy

Titus Tielens

Manager strategy & business development • Port of Amsterdam





Circular reference

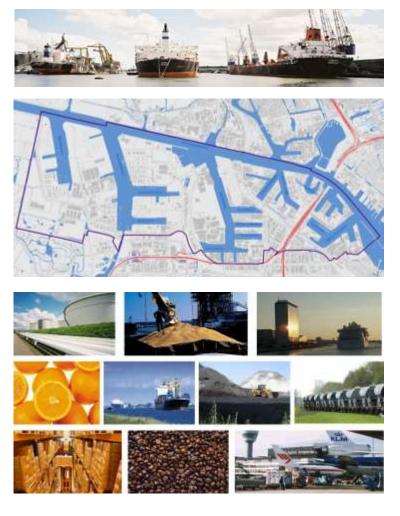
how to stimulate the circular economy

Titus Tielens, Strategy & Innovation

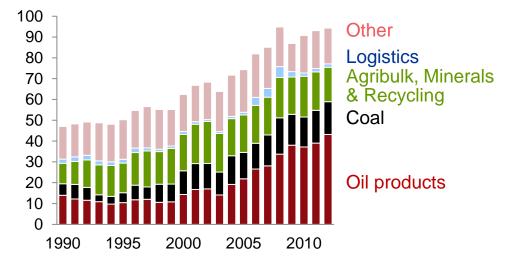


1. The circular economy is already happening

Port of Amsterdam is a large industrial area



Annual throughput (million ton)



- Number 4 sea port in Europe
- Leading port in oil products, coal, cocoa
- Multipurpose: agribulk, minerals, logistics
- Top 10 cruise destination in Europe
- Excellent waterways, roads, rail
- Attractive metropolitan area, Schiphol
- Lively business community: 2,000 companies

Gradual shift toward distributed energy

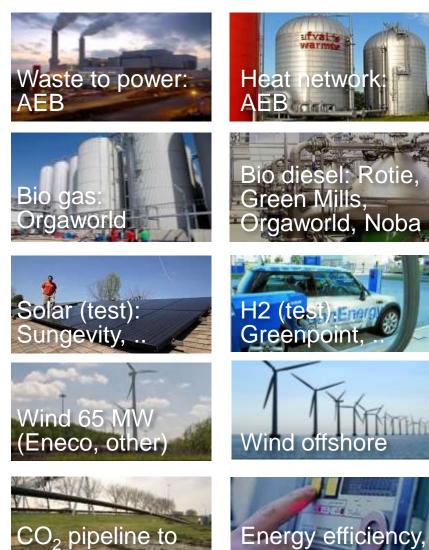
From ..







То ..



smart grid (test

Westland (OCAP

Biobased and circular economy emerging

Established and new activities in port of Amsterdam

Biobased economy

- Maja, OBA, IGMA, CWT Turnover of biomass
- NWB

Collection of alcohol, bio-ethanol

- Westway
 Collection of melasse
- Chaincraft Startup producing biochemicals
- Bioplastics
 Planned production of bioplastics
- Bin2Barrel Startup plastic waste to fuels, materials
- The Circular Company Planned Amsterdam Waste Exchange

Circular economy

- Sita, Icova, Van Gansewinkel
 Waste collection for AEB waste-to-power
- SCS Multiport Collection of waste and furnace slags for construction
- EMR, HKS, Alba
 Collection of waste metals, appliances, cars

Paro, Beelen

Recycling waste to construction materials, supply to concrete producer Voorbij

Granuband

Collection of car tires, production of shock absorbers

Example AEB

Traditional activities

- Collection of 1.4 million ton municipal waste per year
- Production of 960 GWh electricity
- Production of 560 TJ heat



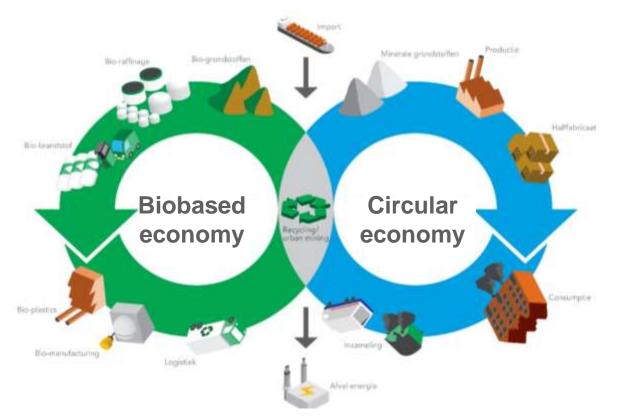
New activities

- Shift toward higher value-added applications of waste
- Recycling: ferro, non ferro, steel, gypsum, construction materials (0.4 million ton)
- Clean Capital Partnership with Waternet and Port of Amsterdam, projects including:
 - Bio-LNG plant
 - Liquid waste recycling
 - Wind
 - Steam net
 - Bio plastics
 - Port pilot plant



2. Key to success is adaptability and symbiosis

How can innovations succeed?



Key success factors

- Access to feedstocks
- Reverse logistics
- Scale-up of technologies
- Secure demand
- Flexibility, adaptability
- Stable regulations

On a company level, the key is adaptability

Uncertainties

- Supply of feedstocks
- New technologies
- Changing customer needs
- Changing competitive landscape
- Myriad possible value chains

Requiring adaptability

- Diverse set of feedstocks
- Flexible technologies
- Portfolio of customers
- Agility to capture opportunities
- Network of partners

On a city or port level, the key is symbiosis

2. Each treatment process or intermediate product
 can be used in many chains

Each product (bio chemicals, etc) can be made via different chains

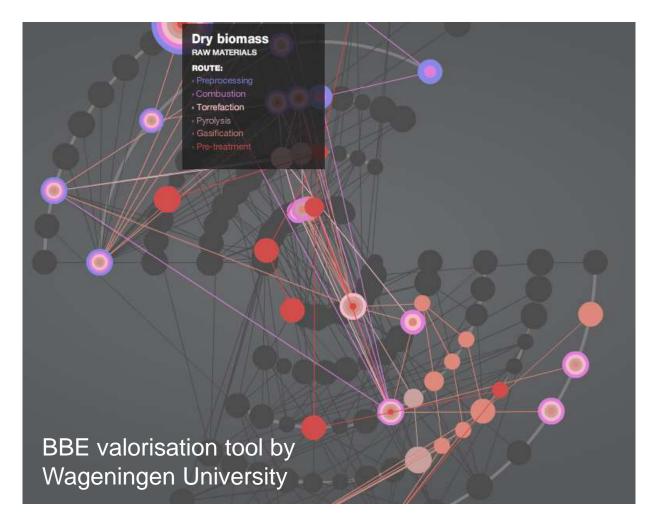
1. Each biomass source (wood, potatoes, algae, etc) can follow many chains

Agriculture APPLICATION ROUTE:

Biorefinery of sugar beet
 Anaerobic digestion
 Biorefinery of agro residues

Please try this at home

http://www.biobasedeconomy.nl/routekaart/index_en.html



3. City and port planners can stimulate symbiosis

Why do we care?



Distributed (virtual) power plant, logistics hub and sustainable biobased and circular production area

What can city and port planners do?



- Provide location and conditions for business
- Facilitate transport and transhipment
- Provide grid and network infrastructure

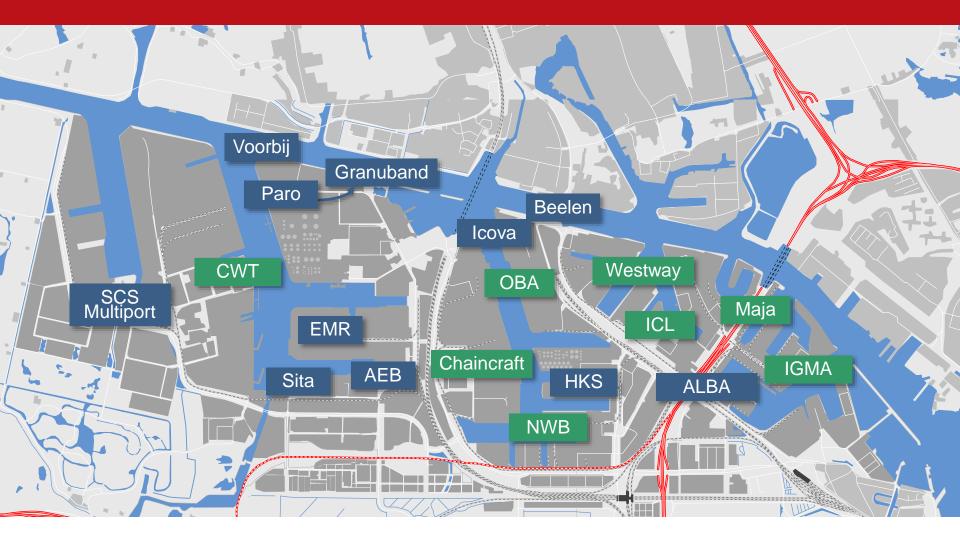


- Organize business community
- Promote clustering for plug & play environment
- Fill in whit spots (steam, hydrogen, feedstocks)



- Provide incubator, small scale and flexible area
- Participate and invest, facilitate financing

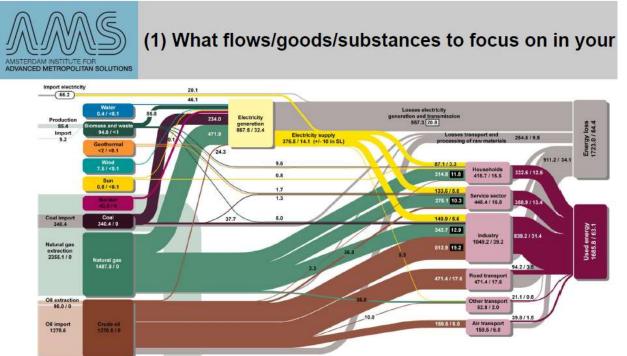
Port and city planners can promote clustering



Port and city planners can provide grids



Research institutes may contribute – example



AMS

- MIT, Delft University of Technology, Wageningen University
- Advanced solutions
- Research valorisation
- Living lab projects
- Networking

Urban Pulse project

- Big data
- Mapping of materials and energy flows
- Spin off projects

[Additional examples]

Example Waternet

Traditional activities

- Waternet is water treatment and management company
- Collection and filtering of sewerage sludge



New activities

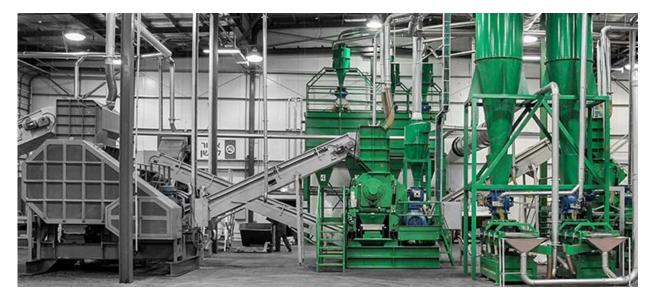
- Production of green gas and struvite, production of phosphates
- Largest phosphate production plant in Netherlands



Example Granuband





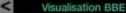


Company profile

- Collection of 1 million car tires per year through 1,250 collection points
- Recycling of 30,000 ton per year

- Production of rubber tiles, granulates, shock absorbers, padding material, playground toys
- Rubber recycling technology knowledge center

Mapping chains and filling white spots is key



Explanation Colophon

Biorefinery of sugar beet

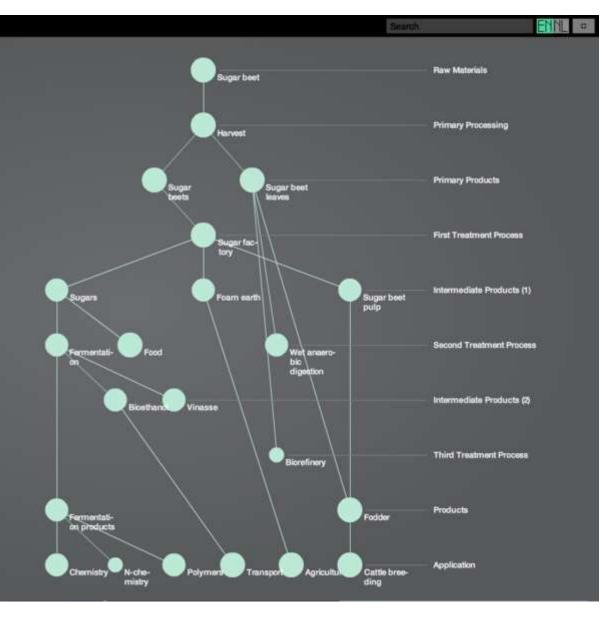
The current facilities that process sugar beets into sugar can be seen as biorefineries. Not only sugar, but also foam earth, beet pulp and molasses are produced. All of these can be used as feedstocks for production of higher added value products. Molasses is already used in the fermentation industry for the production of medicine and ethanol. Sugar beet leaves are currently used as cattle feed or simply left in the field. These sugar beet leaves could be processed in a modified version of the grass refining process to yield raw materials for the biobased economy.

View the infographics

Fermentation



Back



MEETING POINT URBANMAGMA MARCH 18-19 2015



WE START AGAIN 10.40



Keynote – Key factors for Cleantech business growth

Johan Möllerström

Managing director • Malmberg Water AB

Key factors for cleantech business growth

Urban Magma 2015-03-18







Our mission

Fure energy. Clean Water. and a constant fpcus of caring for our planet.



Malmberg in brief

Founded 1866

Family-owned in fifth generation

Turn-over appr. 65 MEUR

180 employees

Companies in Sweden, Germany, Lithuania, Norway, England Repr. in Denmark, Finland, Italy,France







pure energy clean water

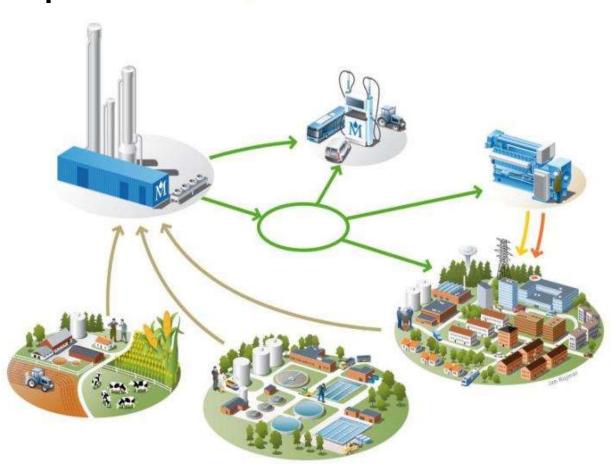
Our values

Competence Creativity Openness and joy



clean water

LIP & Klimp







Malmberg Biogas Upgrading





The beginning

Today



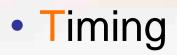
pure energy clean water

Go to market... Take the risk!





Three "T" for a successful breakthrough



- Tempo
- "Tur"/Luck



- Uppsala (SE) 4 Fall
- Stockholm (SE) -
 - Norrköping (SE)
- Kristianstad (SE)
 - Helsingborg (SE

- Schuby (DE) 1800 Nm3/h (Agriculture, sugar beets /grid)
 - Haßlau (DE) 1400 Nm3/h (Agriculture/grid injection)
 - Hallertau (DE) 2200 Nm3/h (Agriculture/grid injection)
- Brålanda (SE) 300 Nm3/h (Agriculture/vehicle) GR BAS+
- Itzig (LUNEW 6000 Nor 348 (Nor a Stering Act Offered from October 2012

E. Malmberg.

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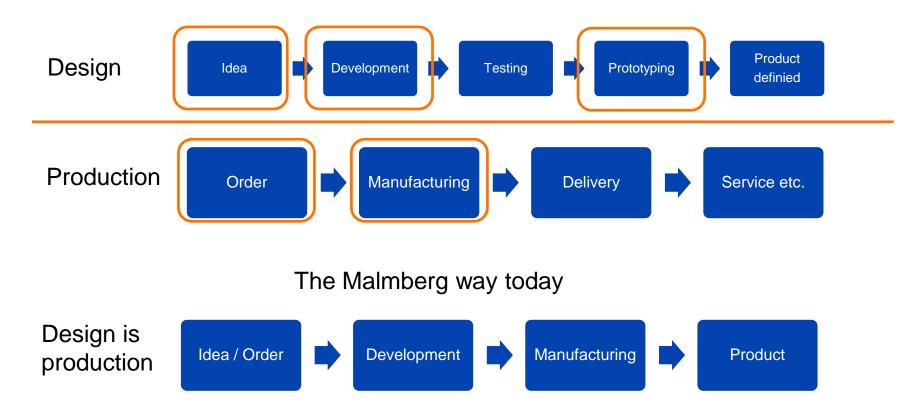






From idea to product

An ordinary product company







Biogas Upgrading Concept – Malmberg COMPACT[®]



Malmberg COMPACT® is pre-fabricated, standardized container solution in stainless steel for the upgrading of biogas. The biogas technology is based on water scrubbing and has been developed by Malmberg over 20 years. The COMPACT stands out for its high availability, the lowest LCC in the market, and the Graphical operating system Malmberg feniX[™].





Biogas by Malmberg

The Swedish Water Experience



Background

- The idea that the Swedish Water Industry shall coorporate in the export market has been around for over 30 years
- VARIM has changed and has become a real trade organization
- Water –Mobilization (VA-Kraftsamling) was founded and funding was granted during 2010 by Swedish Agency for Economic and Regional Growth (Tillväxtverket).
- Steering committee
 - Läckeby Water
 - Malmberg Water
 - Nordic Water
 - SWECO
 - Sustainable Business Hub

Each individual company is too big for Sweden but too small for the World

• The result out of this was Swedish Water Experience



It is better to get a part of something than all of nothing

- Employees: ~ 500
- Turnover 2014: + 200 MEUR
- > 10 000 references
- > 100 countries
- Started 1866



NORDIC WATER





Why Ukraine

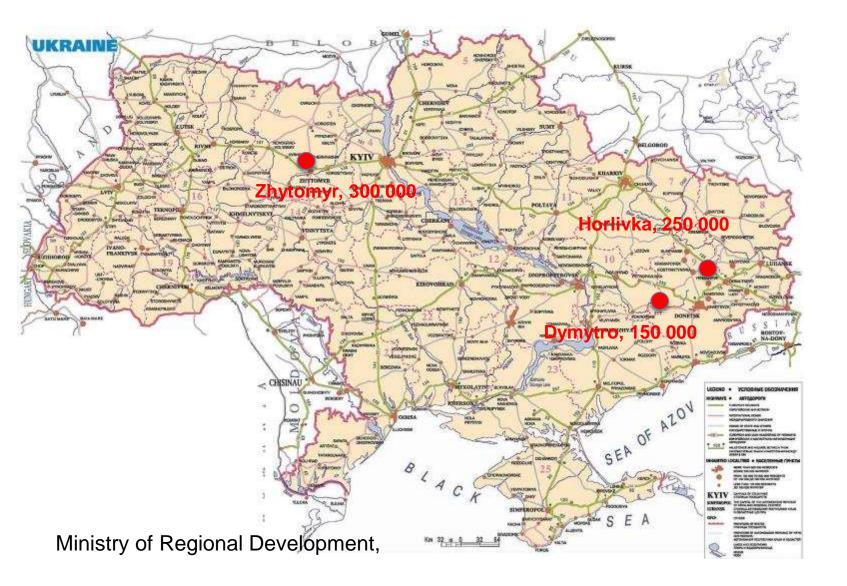
- Common history
- Geography
- Climate
- Growing market
- Need for waste water treatment
- Swedish experience can be used and is wanted

Ministry of Regional Development

- Want to adopt the Swedish model in Ukraine
- Three pilot projects identified
- MoU signed 13th March 2012
 - Using the Swedish model for the development of Ukrainian water and waste water











Thank you for your attention!

Johan Möllerström Managing Director Malmberg Water AB Johan.mollerstrom@malmberg.se +46 44 780 18 01

MEETING POINT URBANMAGMA MARCH 18-19 2015

Keynote -The utility as a driver for innovation

Sylvia Michel CEO • Kraftringen





The utility as a driver for innovation

Sylvia Michel CEO Kraftringen



Benefiting the community and business

- Operational in about 20 Swedish municipalities
 - Electricity, heating, cooling, gas, fibre, contracted services, etc.
- Owned by four municipalities
 Lund, Eslöv, Hörby and Lomma
- 430 employees
- Total number of customers: Approx. 300,000
 - 115,000 electricity grid customers
 - 158,000 electricity accounts
- Turnover approx. 2,6 billion SEK
 - Result approx. 250 million SEK / year



Ø kraftringen



ENERGY for future generations - our vision

TOGETHER

with conscientious customers and partners, we provide energy that leads the way to a sustainable society



Research & Innovation – interaction with added value

- To be an attractive and reliable research partner for universities, colleges and businesses
- To use applied research as a foundation in our drive towards sustainability
- To invite people in for research and innovation by being open about the challenges we are facing
- Our energy system can be used for research, and our facilities for testing new solutions
- To increase students' understanding of, and interest in, the energy industry





Together we create new energy solutions and smarter consumption patterns



Collaboration with Region Skåne

- Region Skåne's goal: to be a fossil fuel-free region by 2020
- Kraftringen's contribution: to present a solution for how this goal will be achieved
- Local energy solutions promote local employment opportunities, and hence regional economic growth
- Declaration of intent: the first of its kind in Sweden





A new, sustainable neighbourhood

- A good example in Europe
- A destination for research, cultural and recreational excursions in the region
- The world's best research and innovation environment



MAXI

Science EUROPEAN Village SPALLATION SOURCE Scandinavia





The Brunnshög contract – Energy partner Kraftringen

- The Brunnshög contract creates the foundation for the technical supply systems, in cooperation with VA Syd and the Lund municipality
- Kraftringen involves developers and property owners
- From commercially accessible solutions to test beds

The town as a power plant





The world's largest research facility with synchrotron light MAX IV

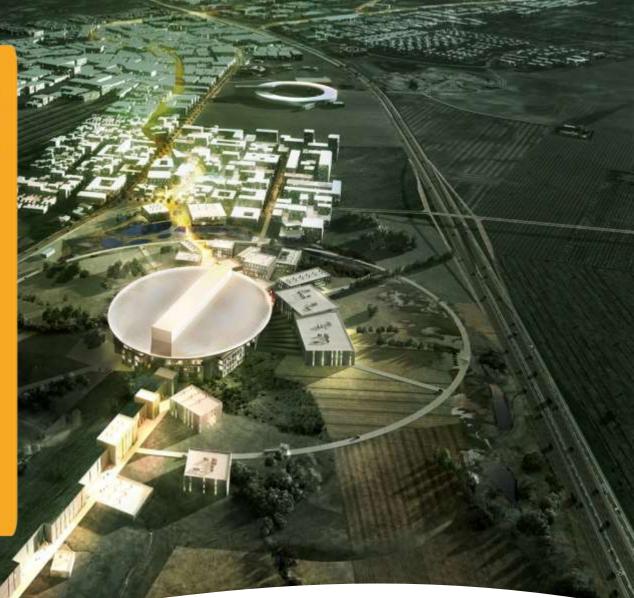
Supplying cooling and heatingRecycling waste heat

0.00



A world-class research facility

- Designing energy systems & efficiency measures
- Responsible, Renewable, Recyclable, Reliable
- Recycling waste heat



















The technical supply system of the future - for energy, water and sewage

















INNOVATION CULTURE

 where the academic world the business world and society in general join forces to solve global challenges - with products and services for the sustainable cities of the future. Mobility

Energy efficiency







An EU project in three cities

Increasing energy efficiency in existing homes. Three cities have been chosen to become the forerunners for smart cities.

- To reduce the demand for energy
- To reduce emissions of greenhouse gases
- To increase the use of renewable energy sources





Spänningssökarna- energy for future generations

- To increase awareness of energy and the environment
- **C** To create engagement and a sense of participation
- To get help of upcoming generations to find solutions for our future energy needs
- A successful project!
 - 42 classes and over 1 000 students participated, >90 %





How do our research and innovation projects contribute to a sustainable society?

- The Energy Industry leading investor in Swedish economy, 300 Billion SEK within the next 8 years
- Kraftringen invests 400-500 Million SEK annually
- We open up for cooperation beyond our own sphere
- Reduce resource consumption
- Promote understanding of sustainability issues
- Offer renewable resources and sources of energy
- Put sustainability and innovation on the agenda!

ENERGY for future generations - our vision



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Build and the loss and loss

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 And Million of Manhatine AND IS NOT THE OWNER THE OWNER OF THE OWNER OWNER

----CHINA MARKING



Thank you for your attention !



MEETING POINT URBANMAGMA MARCH 18-19 2015

LUNCH

WE START AGAIN 12.30



Panel Discussion

Success factors for innovation, growth and sustainability



MEETING POINT URBANMAGMA MARCH 18-19 2015

Keynote

Sustainable development through innovation in the Baltic Sea Region

Björn Grönholm

Head of secretariat • UBC - Commission on Sustainable Cities

Sustainable development through innovation in the Baltic Sea Region

Björn Grönholm: Head of Secretariat UBC – Commission on Sustainable Cities Urban Magma Conference 18 – 19 March 2015

Union of the Baltic Cities





City Network Established 22 years ago, in 1991

Today 101 member cities in 10 countries around the Baltic Sea Region

Focusing on Policy and Urban development

UBC Commission on Environment and the Sustainability Action Programme 2010 – 2015

Improved internal cooperation New more efficient types of actions & cooperation Connect our work to the EU Strategy for the BSR Strengthening UBC profile as a good partner. Need and request!!



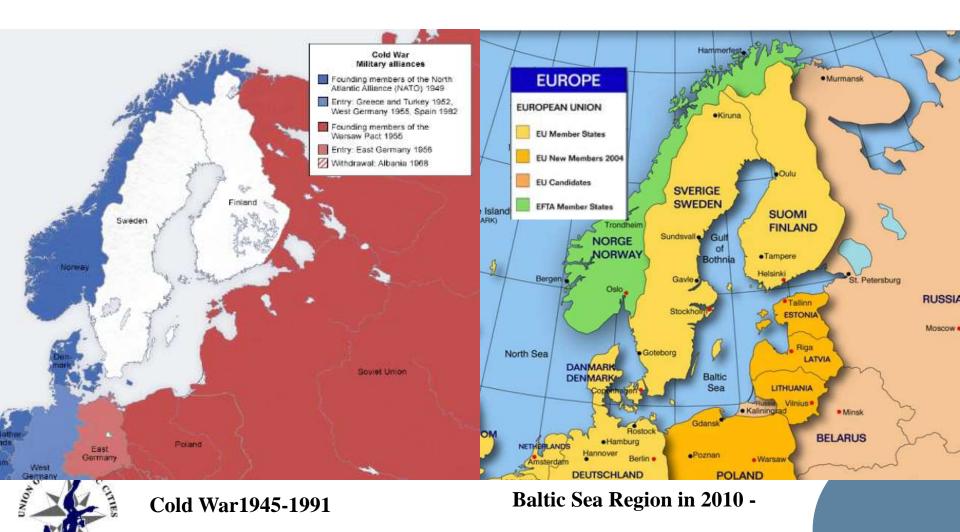


The Baltic Sea Region 2014

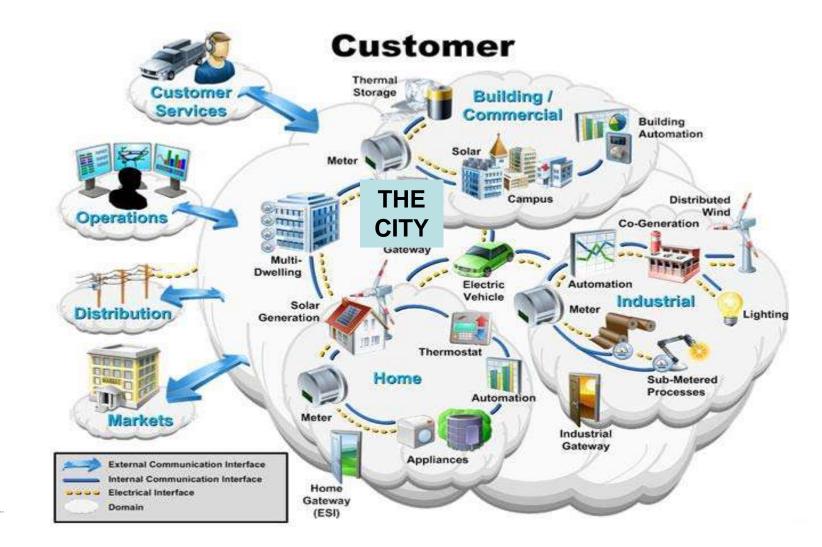
East – West arena Enormous changes in a short time! A region with a similarities and differences A region with common challenges and problems A region with common goals



Europe and Baltic Sea Region - enormous change in a short time!



Cities are "Owners" of a huge organization and thereby a big customer





What makes BSR a good framework for Innovation, Growth and Sustainability?

Similarities and differences but also Common challenges

Big and small - west and east - different governance traditions but also Common interest

A lot of **structures**; CBSS, HELCOM, UBC, University networks

→ Enabling cooperation on innovating, piloting and mainstreaming of Green Innovations, growth and Sustainability



Change and development

Behind all kind of change and development there are **driving forces**, issues making things happen:

The main driving forces in public sector are ;
A) policies (often verified by the budget)
B) legislation (federal and local)
C) economic tools (taxes, incentives etc)

Market forces creating (private) demand leading to many

106

Case:

NORDLEAD project: Success factors in Climate work

Basic success factors:

- Awareness of local situation and needs
- Political leadership and engaged
- Sufficient budgeting and resourcing
- Individual enthusiasm

Additional success factors:

- Good cross-sectoral cooperation
- •"External pressure" or support such as EUSBSR

•Making climate issues into economic profit

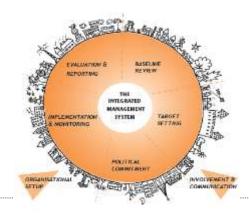


Sustainable Development through Innovation in the Baltic Sea Region

> 20 years of cooperation = reached results Cooperation based on traditions

Next development steps demand new types of cooperation CLOSER CONCRETE COOPERATION RESULT ORIENTED COOPERATION MORE TRIPPLE HELIX COOPERATION INTEGRATED APPROACH





Keys to success for Sustainable Development in BSR

- Proactive networking and involvement in national, EU and international actions!
- Concrete ambitious projects & work.
- Look for Good Practices and Success Factors!
- Courage to test, and make a change!

Together with partners and funders we can improve our practices our, environment, the living and social conditions, the economical development and cultural life...or promoting efficent and sustainable development of cities.



MEETING POINT URBANMAGMA MARCH 18-19 2015

Practical Information

4 DIFFERENT BREAK-OUT SESSIONS

STUDY VISITS TOMORROW BUSES LEAVES FROM STORTORGET 8.30 TOMORROW. BUSES TAKE YOU BACK TO S:T GERTRUD AFTER THE STUDY VISITS.

WORKSHOPS DON'T FORGET TO SIGN UP FOR TOMORROWS WORKSHOPS AT THE REGISTRATION AREA.



Carolinahallen: Session 1 Dynamic clusters – formula for high competetiveness

Salmson: Session 2 Industrial symbiosis – reuse resources, raise values and save the environment

Session 1 Dynamic clusters – formula for high competetiveness

Moderator: Bengt Malmberg

Business development • Sustainable business hub

MEETING POINT URBANMAGMA MARCH 18-19 2015

Session 1 Urban Magma from a theoretical lense

Caroline Wigren

PHD • Lund University





Urban Magma from a theoretical lense

CAROLINE WIGREN-KRISTOFERSON, STEN K JOHNSON CENTER FOR ENTREPRENEURSHIP, SCHOOL OF ECONOMICS AND MANAGEMENT



We know quite a lot!

Inspired by: One size fits all? Towards a differentiated regional innovation policy approach by Franz Töödtling, Michaela Trippl in Research Policy 2005.

- A RIS consists of two subsystems/building blocks:
 - » The knowledge application and exploitation subsystem
 - The Cluster
 - » The knowledge generation and diffusion subsystem
 - Public research institutions, technology licensing offices, innovation centers, universities, polytechnics, vocational training institutions



The two buildning blocks



Those actors are in different ways involved in Urban Magma !



And Policy!









Intensive interaction within and between the subsystems!



Exchange of knowledge, resources and human capital!



It will also fail if there are...

- too strong ties between organizations, which might result in serious lock-in effects.
- poorly developed international external links; the region is not enough.
- too few or no clusters...



Cont.

- lack of specialization OR an overspecialization in traditional industries and outdated technologies.
- missing or inappropriate organizations in the subsystem of knowledge generation and diffusion.
- too strong orientation on existing institutions and traditional economic and technological structures.



Urban Magma in a metropolitan region

- Metropolitan regions are centers of innovation because of the many actors localized there.
 - R&D activities, patenting and major product innovations are usually above average.
- However not always...
 - If they are lacking dynamic clusters of innovative firms!
 - Or if there are no interaction within or between the subsystems!



So, in metropolitan regions we might find...

- Many industries/services but lack of high profile and knowledge based clusters.
 - Sustainable Business Hub and additional clusters and firms.
- Innovation activities take place through R&D in headquarters of large firms and in high-tech companies, as a consequence product innovation and new firm formation is often below expectations.

- Don't forget the new firms!



Cont.

• Large variety of schools and other educational organizations of good quality but weak links to industry...

- Make sure those links are developed.

• Market links dominate, often few cluster and innovation related networking; lack of networks and interactive learning seems to represent an important innovation barrier in such regions. Weak networks between firms too.

- Urban Magma is important, but make sure all who should are included!



Cont.

- The RIS subsystems operate separately.
 - Make sure that there are interactions, find out how and whom!



Keep up the good work and be aware!

CAROLINE.WIGREN@FEK.LU.SE





LUND UNIVERSITY

MEETING POINT URBANMAGMA MARCH 18-19 2015

Session 1

Cluster development – steps for success

Lars Gunnarsson

Phd • Tunberg AB





CLUSTER DEVELOPMENT STEPS FOR SUCCESS

The challenging Questions

- How can a Cluster initiative in Region Skåne help to provide innovative sustainable solutions for Urban supply systems?
- How can Technology Innovation System, TIS, lead to a new way of interacting within a region?
- What should we do to achieve:
 - Technical development
 - New Business models
 - Trust among actors



Cluster

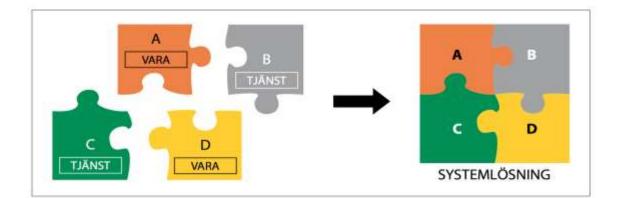
An agglomeration of businesses with growth potential that exists within a geographic area





System delivery

A collection of elements associated with each other so that they form an ordered whole



¹ Denna indelning är hämtad från underlagsrapporten, Studie om systemlösningar inom miljöteknikområdet, som IVL Svenska Miljöinstitutet gjorde på uppdrag av Nutek år 2008.



TIS

`A dynamic network of agents interacting in a specific economic/industrial area under a particular institutional infrastructure and involved in the generation, diffusion, and utilisation of technology.

Carlsson and Stankiewicz



Urban Magma, a future Cluster

a regional cluster for system delivery to the international market

A multi helix collaboration

urban supply systems, sewage, heating, waste management

Urban Magma is the catalyst to create a culture of co-operation for system delivery



VISION

For the south of Sweden to become an internationally leading location for the development of knowledge and technology for integrated urban supply systems: wastewater. waste and energy.





Strategic Idea

- To tie together companies, research community and municipalities to mobilize for accelerated innovation and international
- To develop a system perspective and business models to create leverage for growth





Objectives

- Recycle
- Energy efficiency
- Resilient
- Multi-helix
- Increase knowledge
- Social aspects
- Speed of innovation and change
- Gender perspectives



Goals

- New jobs
- Tax revenues
- Early access to efficient solutions
- Increased demand for knowledge
- Power of innovation and international sales



SWOT

Strength

All stakeholders co operate Strong R & D in the region Large industrial base Great interest and **commitment** from all parties Support from the region Strong International connections

Threats

Political decisions that complicates To small resources to start up **Fragmentation** due to the many initiatives Lacking major contractor for international assignments

Weaknesses

Difficult to do benchmarking Limited experience, the project breaks new ground Most small businesses in the region No established communication platform Undeveloped structure / culture

Opportunities

Establish a strong **cluster** in the region Growing international competitive enterprises Develop attractive testbeds Develop working model with checkpoints Increased gearing towards Horizon 2020



General concern

• We are our own worst enemy

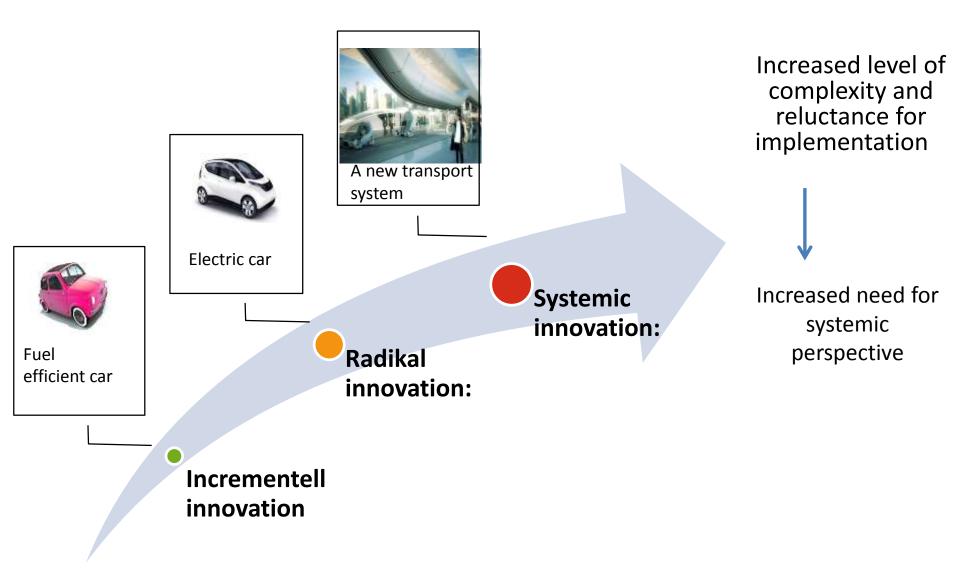


METHODOLOGY

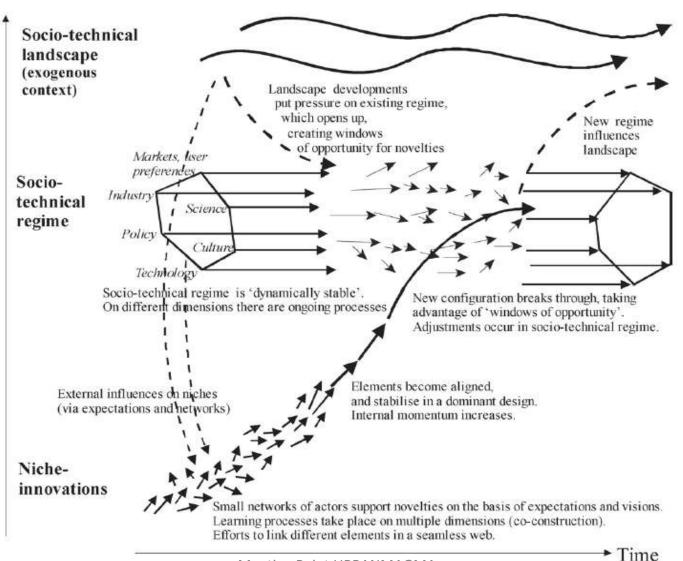


Innovation processes





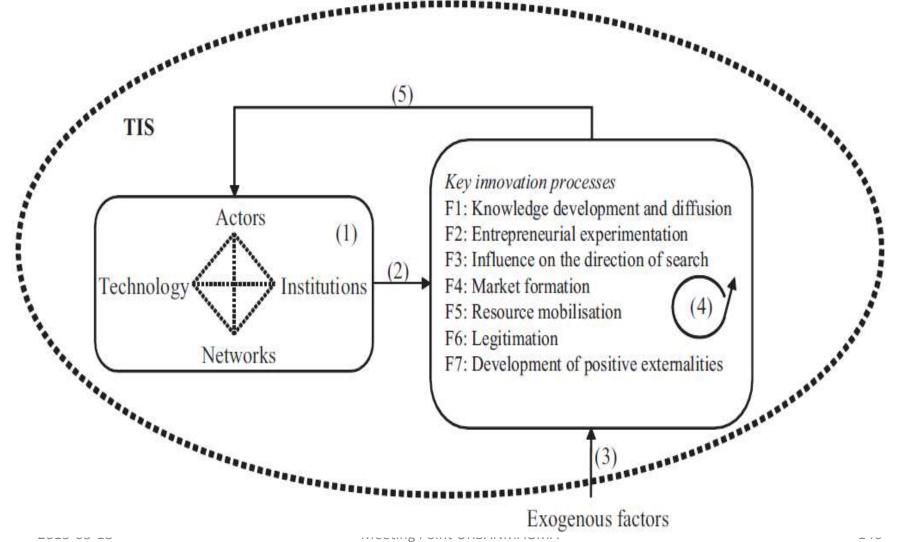
Multi-level Perspective (MLP)



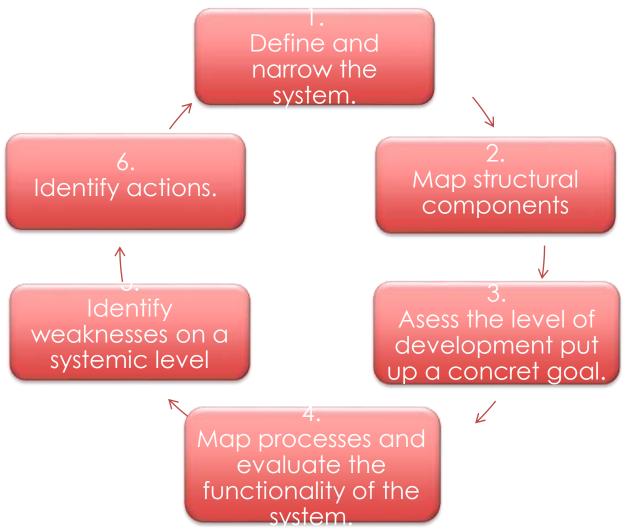


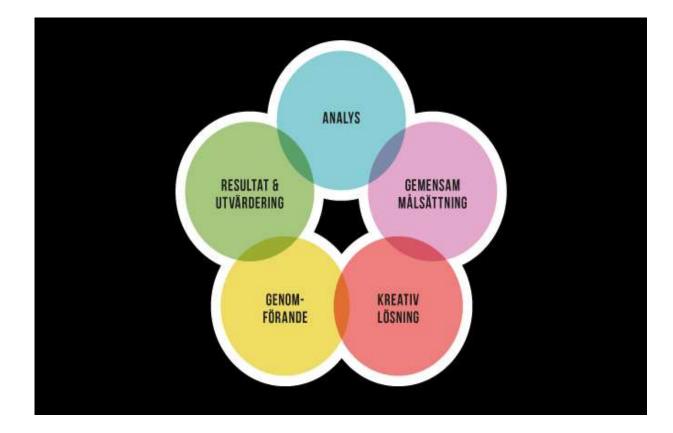
URBANMAGMA

Technology Innovation System



The analytical path in a TIS





TACTICS AND ACTIONS



CLUSTER DEVELOPMENT STEPS FOR SUCCESS

MEETING POINT URBANMAGMA MARCH 18-19 2015

Session 1

Sustainable Urban Development network, the benefits of a triple helix cluster

Karin Fagerberg

Chairman of the board • Sustainable business hub Scandinavia AB

Sustainable Urban Development network, the benefits of a triple helix cluster

Karin Fagerberg, Chairman of the board, Sustainable Business Hub Scandinavia AB

Architect, Urban designer, partner and and CCO at FOJAB architects

Meeting point Urban Magma 20150318





Sustainable Urban Development SUD Cluster



The network

Public sector

- Municipalities
- Regions
- Utilities
- Swedish Trade Council
- Embassies

Academy

- Lund University
- Malmö University
- Swedish University
 of Agricultural
 Sciences

Business

- Cleantech companies
- Trade associations
- Cleantech networks

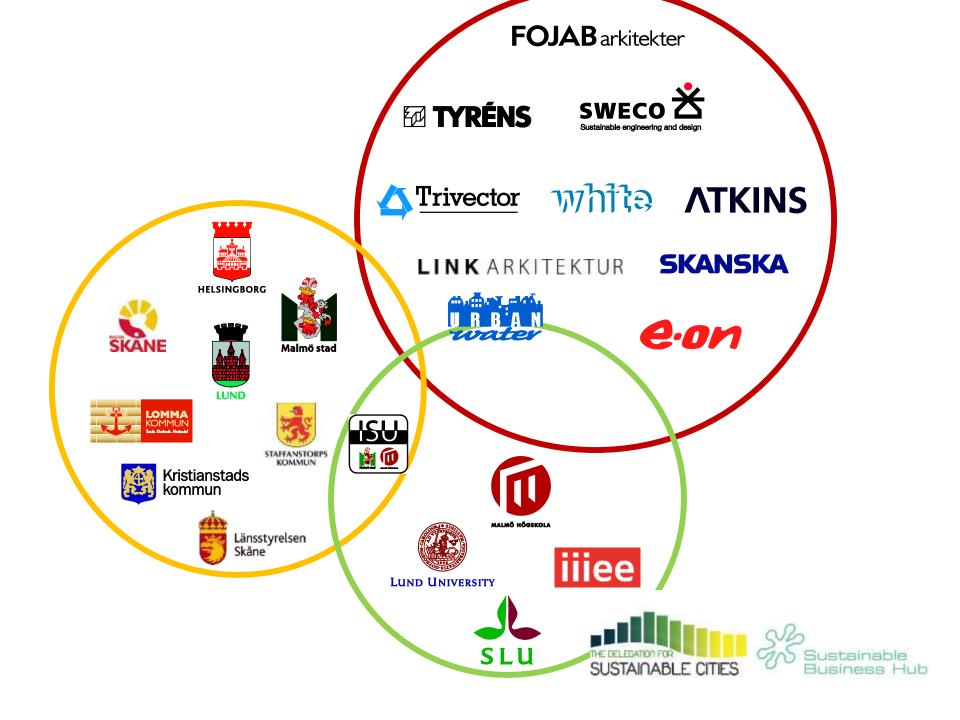
.....more than 100 members within the network





SUSTAINABLE CITIES









OUR PROPOSAL:

- Learning visits
- Crash- courses
- Consulting and design
- Second opinions



Attractive urban developments

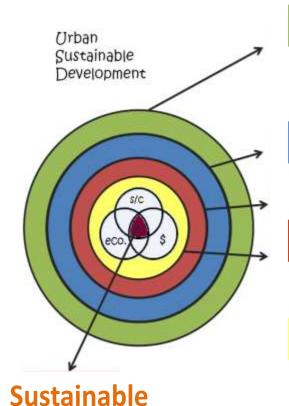
Technical expertise





Liveable cities





development

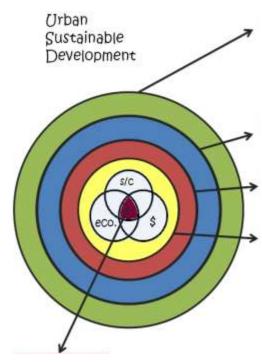
Urban Governance

Urban Strategies

Urban Resource management

Urban Planning and design





Sustainable development

Urban Governance

Political leadership, democratic values City managment, Network managment

Urban Strategies

Scenarios, strategies

Urban Resource management

Implementation, daily management

Urban Planning and design

Design, physical shape, Structure Attractive and functional

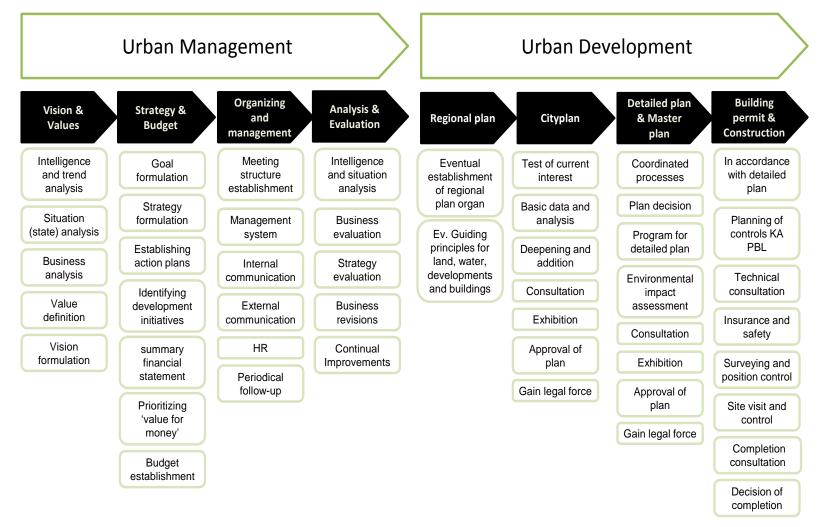


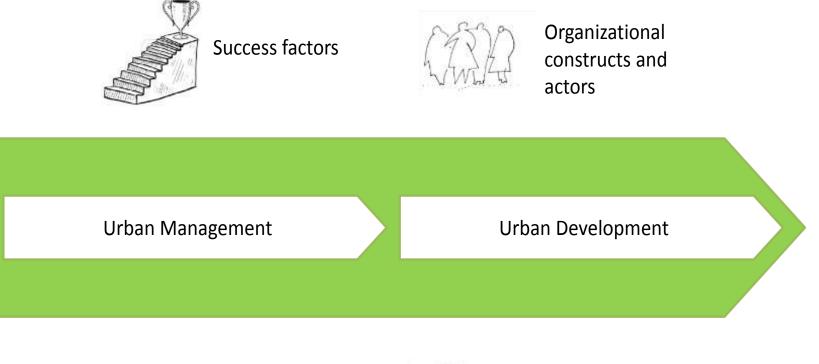
Focus on both :

Urban Management

Urban Development

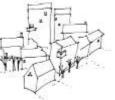
Main activities







Methods and tools



References and showcases

People- centered designs!





What *are* the benefits?



The aim for Sustainable Business Hub as a whole is to promote:

Increased exports World class Domestic market Collaboration within R & D

....for clean-tech organisations in our region



Sustainable Urban Development network, the benefits of a triple helix cluster

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Meeting point Urban Magma 20150318



 brings together companies and institutions with a high environmental profile



Sustainable Urban Development network, the benefits of a triple helix cluster

Karin Fagerberg, Chairman of the board, Sustainable Business Hub Scandinavia AB

Architect, Urban designer, partner and and CCO at FOJAB architects

Meeting point Urban Magma 20150318



• promotes knowledge-sharing



 increases our visibility (intl. and reg.) as well as our credibility



Some examples:





25 MARS KL, 13:00-16:00 . REGION SKANE, DOCKPLATSEN 26, MALMÖ

Välkommen till det fjärde seminariet i serien

Hållbar Stadsutveckling i Framkant

STADSKÄRNORNAS TRANSFORMATION

Städer som växer förändras; innerstaden fär konkurrens av andra centra längre ut och trender och förändrade mänskliga beteenden påverkar stadens utbud

Vart är vi på väg? Vilka är trenderna? Hur kan innerstadens attraktionskraft čka? Och vad är en hålbar utveckling?

Dessa frågor kommer seminariet att belysa utfrån olika perspektiv.

Välkommen till en eftermiddag om stadskärnornas transformation. 22 SEPTEMBER Ett förändrat klimat i stadsplaneringen

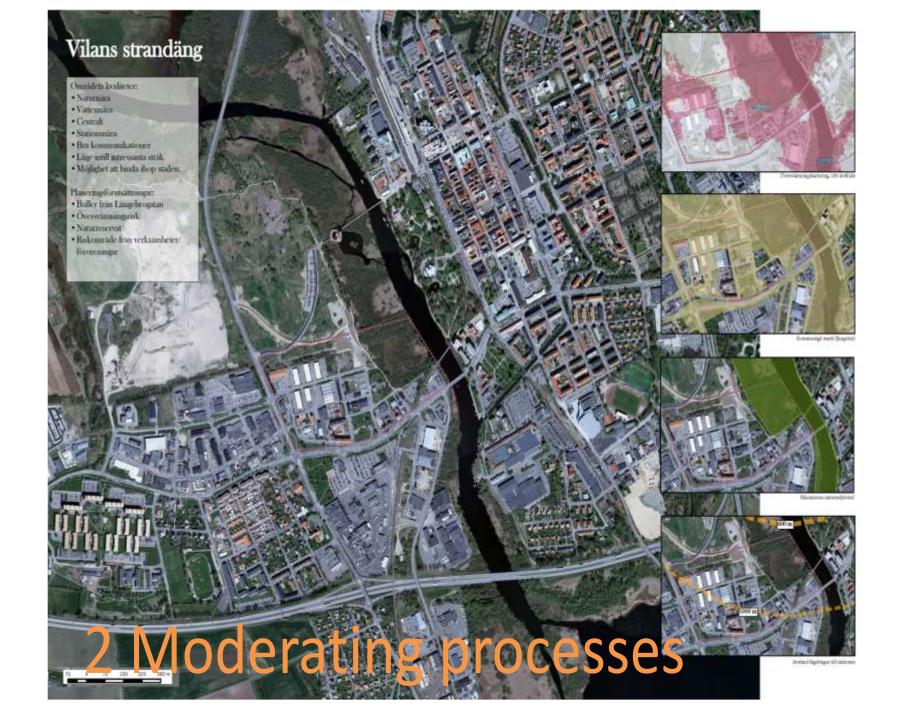
4 DECEMBER Platsens betydelse för besöksnäringen

11 FEBRUARI Ekosystemtjänster – värdeskapande och värdehöjande

25 MARS Stadskämornas transformation

Seminarieserien arrangeras av Sustainable Urban Development (SUD), ett trijder inom hällbar stadsutveckling i Skåne som drivs av Sustilinable Business Hub, och segion Skåne in overbornsertem och stakturbild för Skåres

24 APRIL Vad behöver framtödens städer kunna? – en trandspärling inom stadsutveckling



3 x workshops om hållbar stadsutveckling på Vilans strandäng

25 september tema: ekologisk hållbarhet

KI 9-16, ink fika och lunch Rådhus Skåne, RS- salen (114)

Innehåll

Bakgrund om förstudien Vilans strandäng, stöd från statliga Delegationen för hållbara städer.

Politisk vision för stadsdelen

Syfte och mäl med höstens workshops

Presentation av vald arbetsmodell (Köpenhamns hålibarhetsverktyg}

Mäl med dagen

Inspiration om ekologiskt hållbar stadsutveckling i Kristianstad Vattenrike

Exempel på frågeställningar som behandlas under dagen:

- Biologisk mångfald i urbana miljöer; vatten, flora och fauna
- Markanvändning; vad krävs av en blandstad för att det skall bli ekologiskt hållbart?
- Transport; aktiv transport, bil och kollektivtrafik.

Energoch kretslopp; by gande, material och áte vi nin an näla i ti 🐨 anne wider an i@k stian to i.se se 🛶

13 oktober tema: social hållbarhet

KI 9-16, ink fika och lunch Rådhus Skåne, RS- salen (114)

Innehåll

Kort återkoppling till föregående träff

Mål med dagen

Inspiration om socialt hällbar stadsutveckling i Kristianstad Vattennke

Exempel på frågeställningar som behandlas under dagen:

- Stadens liv och rum; funktioner, möten, navet, gator och torg
- Identitet: människan i fokus, kultur, platsen i staden, stolthet
- Social mängfald; tillgängligt, boende för alla, ansluta och länka övriga staden
- Gröna och bläa områden; okad rörlighet, minskade stressnivåer, upplevelsevärden, möten, lek och återhämtning

13 november tema: ekonomisk hållbarhet

KI 9-16, ink fika och lunch Rådhus Skåne, R5-salen (114)

Innehåll

Kort återkoppling till föregående träffar

Mål med dagen

inspiration om ekonomiskt hållbar stadsutveckling i Kristianstad Vattennike

Exempel på frågeställningar som behandlas under dagen:

- Kommunal ekonomi
- Projektekonomi 10
- Företagande och service 8
- Samhällsekonomisk längsiktighet

(effektivt mark- och resursnyttjande, exploateringstal, mångfald, blandade funktioner, upplåtelseformer, ekosystemtjänster, synergieffekter av social och ekologisk hålibarhet)

Avslutning och sammanfattning av höstens arbete

Välkomna önskar arbetsgruppen för Vilans strandäng Daniela Krizanec och Charlotte Svensson, stadsbyggnadskontoret och Susanne

Wild manie han munie delenske et eret

Kristianstads kommun HALLBARA STADER







Images www.malmo.se



3 Green-tech visits

SZCZECIN the most livable city in the world 2030?

4 Lectures and workshops

MEETING POINT URBANMAGMA MARCH 18-19 2015

Session 1 Regional clusters for increased global business

Anna Blomborg

Manager applications development • Alfa Laval





Regional clusters for increased global business

www.alfalaval.com

Why?

What makes a company with 17000 employees and sales representation in 100 countries engage in a regional cluster in South of Sweden?



District Heating

A flexible, energy efficient way to heat buildings in a sustainable city

We are a link

in the chain

The application includes:

- Production
- Distribution
- Metering and Control
- End user

What do we want?

To strengthen our reputation as District Heating experts based on Swedish, leading technologies and grow our global business.



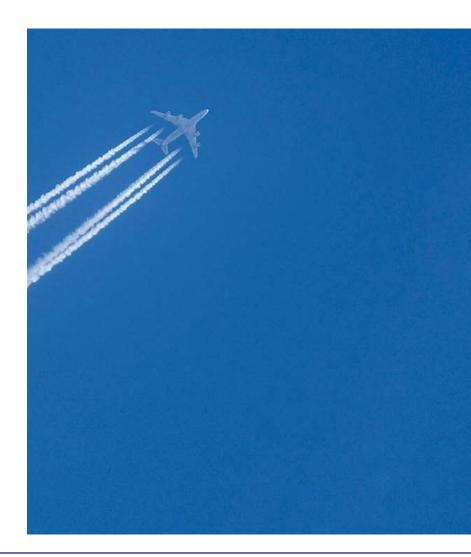
How?

- Offer a system solution together with the other links of the chain
- Test and verify existing technology and get access to future demands early
- Reference installations as a showroom for international customer visits



Example - Belgium

- Politics
- Production
- Design
- Technology
- End user view



Why a cluster?

Opportunities

- To present a system solution
- A common testbed- a reference installation in an environment the customer can relate to
- Exchange of knowledgeenergy companies, consultants, building owners and technology providers



Obstacles

- Too much focus on innovation don't forget to talk about what we already have!
- The cluster is incomplete or too fragmented – difficult to present a system solution
- Who should take the lead?
- Different views on time perspective



By making this region a leading location for District Heating System knowledge and technologies – we can increase our global business!



MEETING POINT URBANMAGMA MARCH 18-19 2015

Session 1 Region Skåne – our need – a driver of innovation

Lennart R Svensson

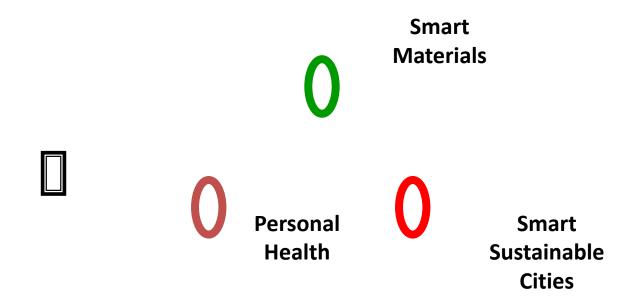
Head of division innovation and cluster development • Region Skåne

Developing new innovative areas and Credtive environments





Skåne

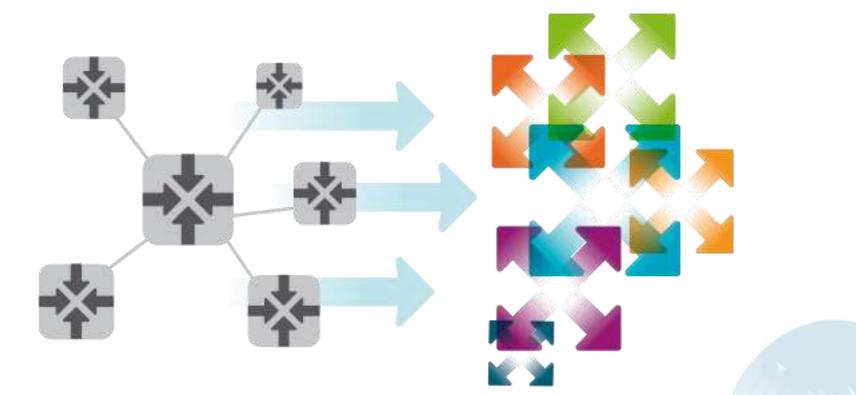


Areas of innovation (smart specialisation)

6 Strategies

- Develop systemic leadership
- Broaden the sense of what innovation is
- Streamlining the support structure for innovation
- 4 ≥ New innovative areas and creative environments
- 5 Developing international cooperation
- 6 Strengthening innovation capacity





WHITE SPACES - RATIONALE



- "innovation occurs at the boundaries between mindsets, not within the provincial territory of one knowledge base" (Leonard-Barton)
- "the ability to jump between assumptions, practices, paradigms, or established practices is essential for continuing, nonincremental Innovation". (Innovation Nation)



WHITE SPACES INNOVATION-PRACTICE

- Issues driven international communities of interest
 - Strong links to societal challenges
- Communities of interest involving and facilitating cross cluster collaboration
- Issues needs to be translated and negotiated to be actionable – design thinking
- Platform approach to capture market opportunities (bridging white spaces) and to exploit the upside of technological relationships – co-specialisation, but these also work as constraints
- Orchestration to build and exploit relational or network advantage.

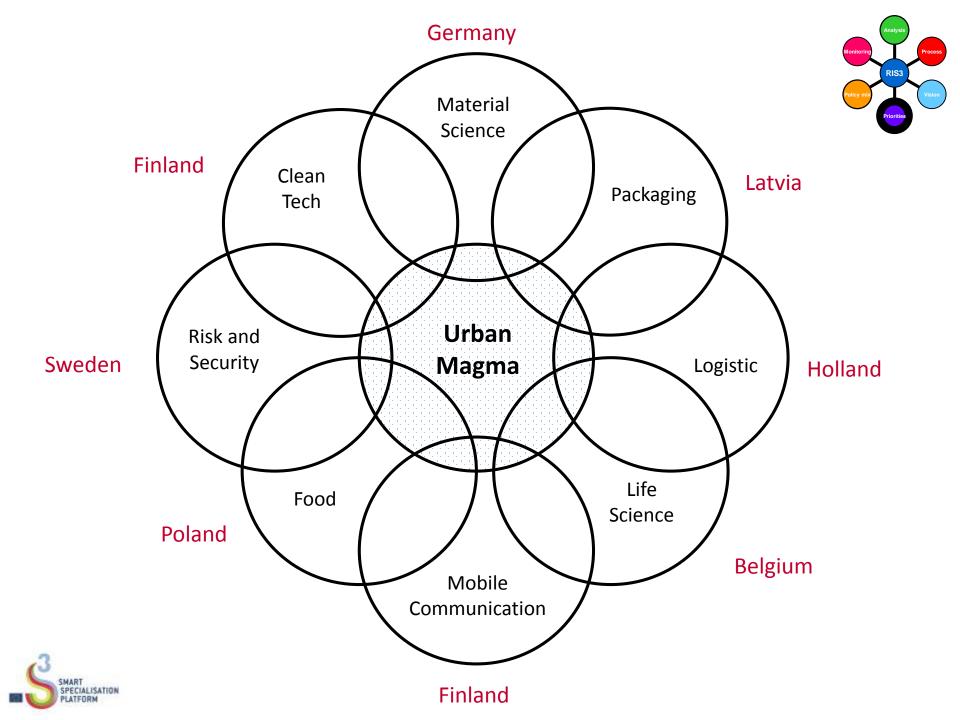
white space

Imagine a double-page spread in a book. The text can be about almost anything, but the important thing is that it's static. You can't change it, delete it or add to it unless you use the margins, in other words, the white space. This is a space where something new can occur.

Laying the foundations for unexpected meetings between different spheres of competence is an important way of increasing the capacity for innovation and renewal in Skåne. One way of achieving this is to promote collaboration between innovation arenas in Skåne and between arenas and other initiatives both inside and outside the region. The term 'white space' was coined to describe the development opportunities which arise when two or more industries or knowledge areas come together. Products, services and processes are increasingly based on knowledge from different areas of expertise.

Translated into policy terms, the ability to work with white space is about making collaboration between traditional areas of industry and knowledge easier. This will not necessarily result in innovations which are completely new to the market. They may equally consist of new combinations of existing solutions. Healthy yogurt with active bacteria is one example of a product that was developed at the interface between two industries: food and medicine.







Enterprise and Industry

Marco Malacarne

Head of Unit for "SMEs: Clusters and Emerging Industries" The role of cluster organisations in supporting emerging industries via cross-sectorial innovation

ECIA PLP meeting – Milano, 8 November 2013



What role for cluster organisations?

Provide <u>entrepreneurial support</u> to SMEs (e.g. coaching, vouchers, benchmarking)

 Act as <u>cross-border</u> bridge-builders (regional integration and international strategy)

- Act as catalyst for cross-sectorial collaborative projects

- Clusters create a favourable open space to promote value chain innovation via a systemic approach



European forum for Clusters in Emerging Industries (EFCEI)

Actions for new linkages needed

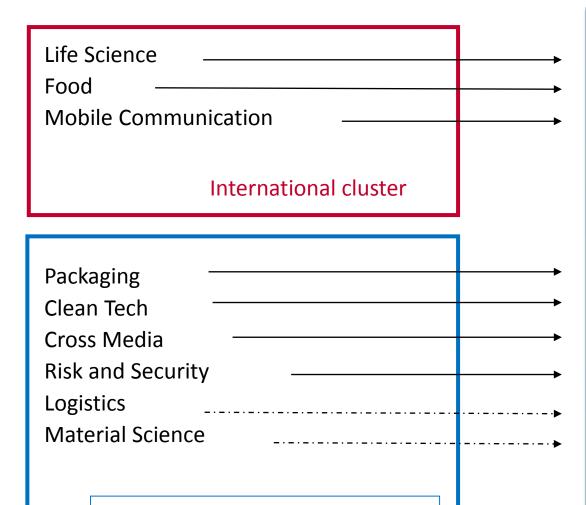
A policy roadmap for stimulating emerging industries

Extension of the European Cluster Observatory: Promoting better policies to develop world-class clusters in Europe

Policy

What?	How?	Who?
Improving framework conditions for clusters in emerging industries		
New linkages across sectors/clusters/regions and ministries	 New cross cluster programs Financing based on value chain approach Evaluation criteria considering the development of a value chain approach or the development of cooperation between sectors 	European level National level Regional level
State aid rules supporting the development of new linkages	 More flexibility Lower administrative burden, especially for SME Promotion of State Aid rules 	European level National level
Public procurement as a driver for societal challenges	 Need for specific demand aggregation programmes, commons definitions of requirements for products/services, promotion of harmonized quality and regulatory standards 	Regional level
International smart observation	 More proactive role of policy makers in identifying and stimulating emerging areas Smart observation applied by the policy makers and the next generation of European Cluster Observatory 	European level Regional level
Entrepreneurial education and culture ensuring the development of new value chains	 Promotion of entrepreneurial and innovation culture as well as risk-taking attitudes and meritocracy in the business world Investment in education systems supporting talent search attitude 	European level National level Regional level

From cluster initiative to open innovation arenas



International areas with strength

Work in progress Skåne Food Innovation Mobile Heights

Packbridge Sustainable Business Hub Media Evolution Resilient Regions

Work in progress Work in progress



From Cluster Initiative to Open Innovation Arenas

Food solutions

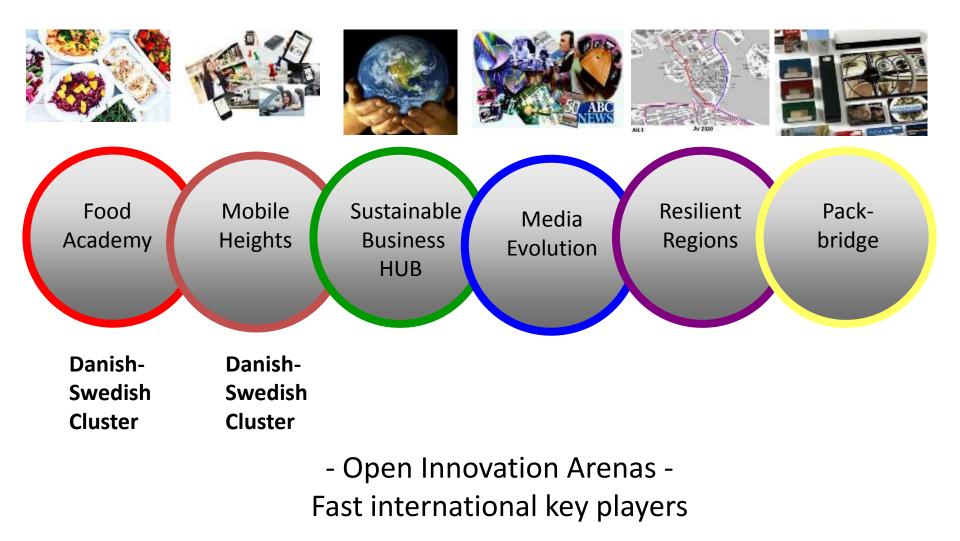
Mobile solutions

Sustainable solutions

Creative solutions

Flow solutions

Packaging solutions



Smart Specialisation Strategies

Skåne, Open Innovation Arena strategy

Global overview

International profile

Open Innovation Arenas

Open Innovation Areas

Open Innovation Platforms





ACTIONS

FROM

TO

WORDS



Thank you!

Lennart Svensson lennart.r.svensson@skane.se Mobile +46768870445

Department for Economic Development and Innovation Region Skåne Sweden

http://www.facebook.com/naringslivskane?ref=ts&fref=ts

http://innovationsbloggen.blogspot.com/

www.skane.se/naringsliv

Twitter: #iiifs

MEETING POINT URBANMAGMA MARCH 18-19 2015

Session 1

LTH – the academic view in triple helix cluster engagement

Annika Olsson

Assistant dean for collaboration and innovation • faculty of engineering, LTH



LTH – the academic view in triple helix cluster engagement

ANNIKA OLSSON, VICE DEAN LTH



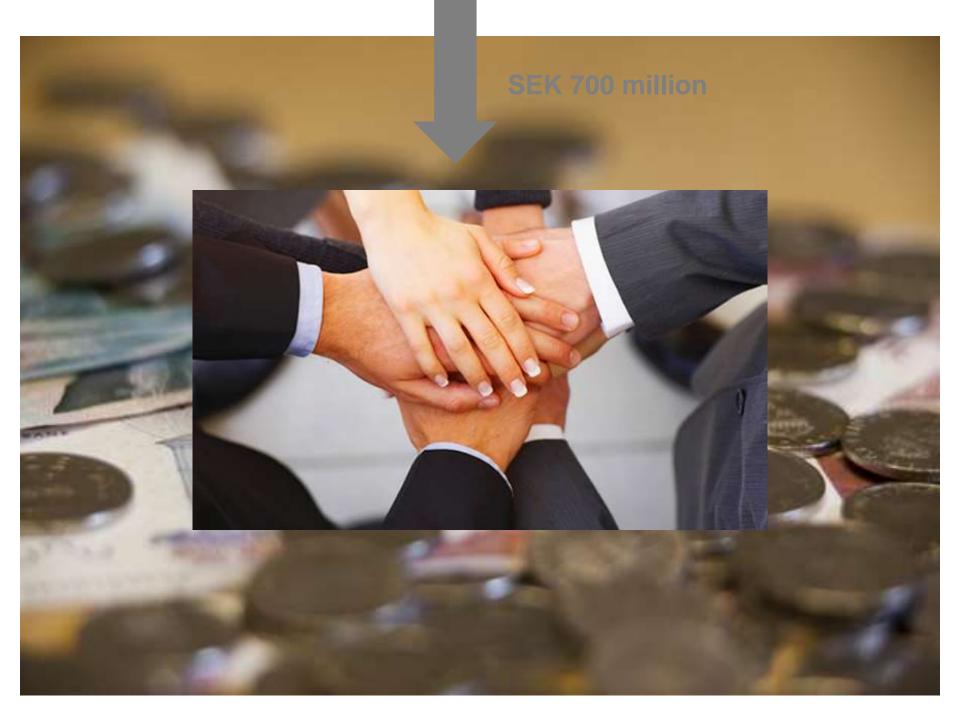
The Faculty of Engineering LTH



- Founded in 1961
- 9 600 students
- 670 PhD students
- 1 600 employees
- 170 professors
- Engineering, Architecture and Industrial Design

SEK 1 577 million turnover





Triple helix cluster in the knowledge triangle

Research

Education

Innovation

UNIVERSITY



Our contribution is:

- ✓ Knowledge creation in research
- ✓ Employable engineers in identified competence areas
- ✓ Research-based innovations in strong research fields







🛨 f 💟 🧟

Research portals

LTHs forskningsportaler är gränsöverskridande och tvärvetenskapliga mötesplatser för forskare och det omgivande samhället. Portalerna ska fungera som en ingång till ett visst forskningsområde. De samlar också forskning och forskare från universitetet som arbetar med områden som har beröringspunkter. Forskningsportalerna kompletterar institutionernas forskning och skapar nätverk.

- Energiportalen
- Havsportalen
- Innovationsportalen
- Kommunikationsteknikportalen
- Materialportalen
- Medicinsk teknik (LABIB)
- Membranportalen
- Programvaruportalen
- Livsmedels- och läkemedelsproduktion
- Lund Lighting Initiative



Waterportal

Water portal at Lund University is a cross institutional boundaries research network in water field.





Our strengths

- LTH is a complete engineering faculty and part of LU
- LTH:s diversity is the strength for growing excellence
- LTH education has strong research connection
- High application rate attractive region
- Good collaboration with other faculties and industry
- Excellent research areas
- Open climate



Innovation – Engineering - Application

- Combine the task of being a knowledge platform
 and creating innovations
- Use links into efficient innovation system
- Create opportunities for entrepreneurial way of working among students and PhD students

Create opportunities to be a top researcher AND an entrepreneur

 Teach and do research based on industrial and societal challenges





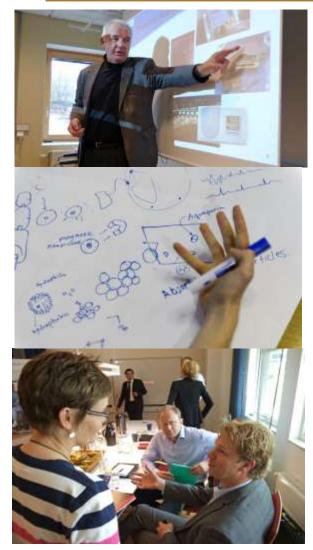
Innovations and solutions to problems arise in dynamic environments Where different perspectives and actors meet and interact

In the interface between academic research and practice new knowledge is co-created leading future development





Collaboration opportunities



- Commissioned research
- Partners in triple helix research programs and research projects
- Industrial PhD students research schools
- Adjoint professors mobility
- Mentorship programs
- Master thesis
- Student Projects





Contact

Annika.olsson@plog.lth.se

046-2229734

http://www.lth.se/samverkan/



Coffee Break

WE START AGAIN 15.30

YOU CAN CHOOSE BETWEEN:

SESSION 3 - SALMSON

FUTURE CHALLENGES AND DEVELOPMENT OF DISTRICT HEATING

SESSION 4 - CAROLINAHALLEN

PRODUCING FERTILIZERS AND ENERGY IN THE HOME

HOW TO USE ECOSYSTEM SERVICES TO HANDLE SURFACE WATER RUN-OFF



Session 4

Producing fertilizers and energy in the home

Christina Zoric Persson

Strategic planner • City of Helsingborg



Rhetikfabriken AB





Producing fertilizers and energy in the home

Christina Zoric Persson, Helsingborgs stad Stefan Persson, Rhetikfabriken AB To get the food waste from the apartment buildings to the farmland

Our central focus question





This is us!

Helsingborg stad Malmö stad Lunds kommun Kristianstads kommun NSR Lunds renhållningsverk **NSVA** Sustainble business hub JTI/SP Lunds universitet **SLU**



What 's the problem ?

2.0 kg food waste/hh, week 1.5 1.0 0.5 0.0 Southern Sweden Southern Sweden (multi-family) (single houses)

Unavoidable

2.5

Avoidable, others

Areas with multi-family houses have a great potential for sorting out the food waste



It's a bit messy!

Pase Ir mata



6

Vi har inte så mycket sopor men kompostpåsen skulle behöva tömmas dagligen. Men det blir den inte så det blir värsta kladdet... Har min i en plastpåse och det brukar vara "soppa" i den. Urk.

#2 - 2015-02-12 @ 11:39:35 - Hebbe:

Hej du..Jag tar oftast dubbla brunpäsar.. Här skiner solen så fint,1+5,4 just nu,1Haé Kram.



Jag brukar slänga ofta .Men om jag har så att det har läckt igenom tar jag två bruna påsar....Har funderingar



Participation of the local division of the l

Not right!

Households account for 2/3 of the food waste



Food waste accounts for 50 % of eutrophication and 25% of climate impact in Sweden



We throw 81 kg food per person and year



En tvåbarnsfamilj kan spara 3000-6000 kr om året på att äta upp maten istället för att slänga den.



What is the best way to collect it?





What 's the best form of the fertilizers to fit the farmers ?





Four workpackages is identified

- **1. Influence the behavior**
- teach the user to minimize waste
- 2. Develop the collection system
- with as few movements as possible
- 3. Process the material to utilize nutrients and energy

4. Value the arable land - the right way



Both in new and existing areas

The work so far

1. Influence the behavior - to minimize waste

A new regional Horizon 2020-project is initialized
 2016-2020 8,5 MEuro

2. Develop the collection system

- Blackwater & Food Waste Challenge in a new area
- Workshop to initialize a regional evaluation of three different systems in new areas and to initialize tests in existing areas
- Learning to do better innovation procurement and use our city as testbeds for new innovations



Work ahead

3. Process the material – still to come

4. Value the arable land – still to come





Blackwater & Food Waste Challenge























H+ is the biggest urban renewal project in Helsingborg in modern times. An old port and industrial area will be developed into a modern and sustainable area.

We wish to create an urban archipelago for people who are looking for, and wish to create, new and exciting contexts. To ensure that the area is developed in the right direction, we have adopted five key words:

- Talent
- Technology
- Tolerance
- Time

Design- & Innovation Processes

٠

Blackwater & Food Waste Challenge • not Touched-up Pre-study: Innovation procurement (PCP)

- Engineers
- Architects
- Designers
- Behavioural scientists

"I say unto you: one must still have chaos in oneself to be able to give birth to a dancing star."

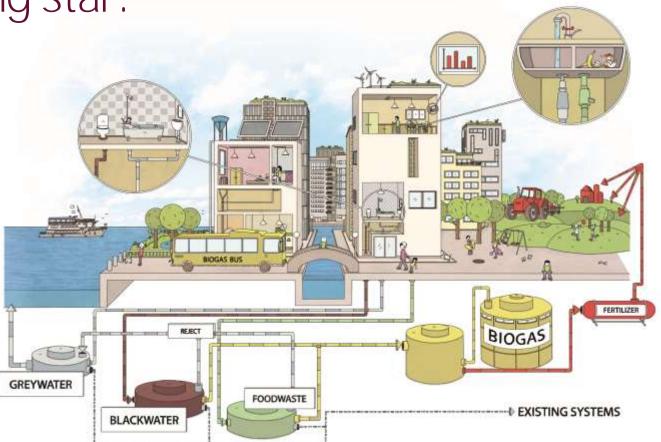
Nietzsche



Our dancing star:

System for recycling Blackwater & Food Waste

- Our homes create large quantities of blackwater (toilet water) and food waste every day.
- Handling and transporting waste causes major expenses for society and environment.
- The purpose of the innovation competition is to find a better way to recycle waste and turn an expense into a resource.





Blackwater & Food Waste Challenge

Four categories

The challenges involved in the system have been divided into four competition categories.

The best three entries within each category will be nominated. One winner in each category will be announced.



Users

Incentives that increase commitment to and use of the system. People in the area should be stimulated into feeling participation and become ambassadors.

Kitchen and Bathroom

Design of the technology that the user will find in kitchens and bathrooms. It is important that this is safe and easy to use correctly.

Plant

Design of a local plant for recycling of the three waste flows, with the possibility of step-by-step expansion. It must be possible to use the plant as a showroom for information and teaching purposes, as well as a test bed for new technology.

Optimisation of Resources

Concept solution for the best possible exploitation of the three waste flows from the area. The focus is on optimising the utilisation of resources and minimising harmful substances, so as to facilitate a sustainable cycle of food and water.

BLACKWAT



EXISTING SYSTEMS



Blackwater & Food Waste Challenge

Kick off	27/2, 2015	Nomination meeting	22/4, 2015	
		•	•	
20/10, 2014	Deadline	26/3, 2015	Prize-giving ceremony	

- About 30 entriers
- Most from Sweden
- But also from USA, Israel, India, Holland, Indonesia ...



Session 4

How to use Ecosystem Services to handle surface water run-off

Annika Kruuse

Phd/ project leader • Department of environment, City of Malmö

Johan Slagstedt

Entrepreneur • Markkompaniet



How to use ecosystem services for surface water run-off

Annika Kruuse, City of Malmo Johan Slagstedt, Markkompaniet

How to use ecosystem services for storm water management

Annika:

- What are ecosystems and ecosystem services
- Examples of ecosystem services
- Ecosystem service related projects in Malmö

Johan:

- Example: a large scale rain garden project in Ängelholm
- Being an ecosystem service entrepreneur

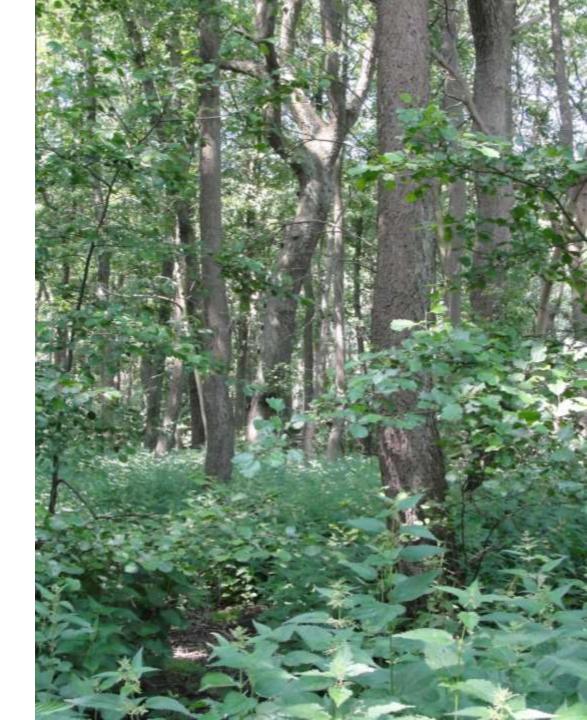


Ecosystem

A community of living organisms in conjunction with the nonliving components of their environment (air, water and mineral soil), interacting as a system.

Linked together through nutrient cycles and energy flows.

Can be of any size but usually encompass specific, limited spaces – a pond, an ocean



Ecosystem services

Ecosystem services are the benefits people obtain from ecosystems.



Four categories of ecosystem services

Supporting services

(I.e. biodiversity and soil fertility)



Provisioning services (I.e. food)

Regulating services (I.e. Moderation of extreme events like floods and storms)

Cultural services (I.e. recreation and health))



Supporting urban services

Biodiversity Soil formation and fertility



Provisioning urban services

Food Fresh water Energy



Regulating urban services Local climate Air quality Noise reduction Water cleaning Pollination Flood reduction/storm water management



Ecosystem services

Recreation Health Physical activities Nature education Cultural symbols



Example pollination

Dependent on biodiversity

Very expensive and complicated to substitute



Example: flood prevention

- 90% surface run off on sealed areas
- 10% surface runoff on vegetation areas



Flood prevention

No connection to grid

Thick green roofs

Rain gardens in back and front gardens

Multifunctionality





Project: BiodiverCity

Innovative green solutions

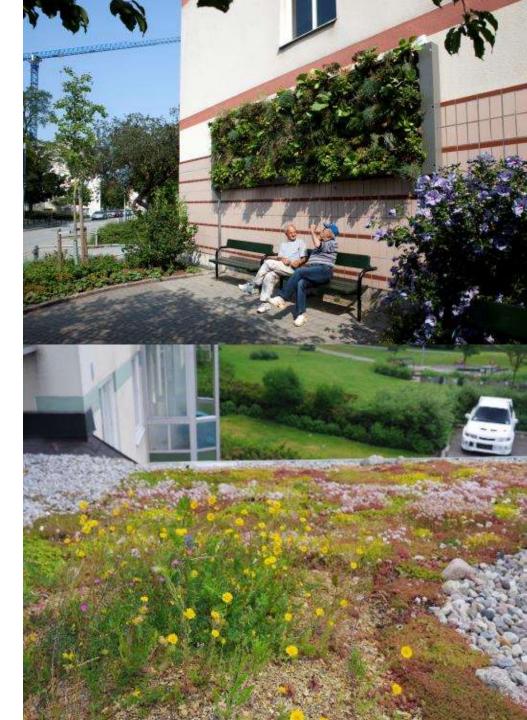
New products and methods

I.e. green roofs, green facades, urban habitats

Co-operation

www.malmo.se/biodiv ercity





Project: c/o city

- Urban ecosystem service: planning tools and valuation
- www.cocity.se







Project: Mapping and valuation of ecosystem services

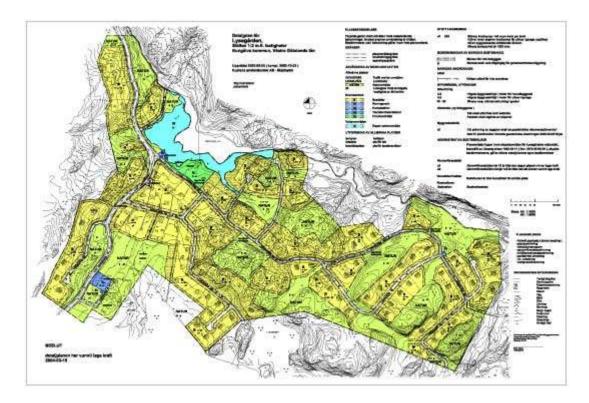
- Riseberga creek
- Testing the TEEB method





Project: MEST_plan

Handling ecosystem services within local plans





National environmental goals:

In the year 2018 there shall be a general knowledge on the importance of biodiversity and ecosystem services and they shall be integrated in economical, political and other important decisions where it is relevant and reasonable.

Raingardens

A forthcoming case of Green Stormwater Management in street environment in Southern Sweden

Johan Slagstedt Markkompaniet Syd AB



Munka Ljungby (Ängelholm municipality)







Problems

- Combined sewage system (wastewater and stormwater)
- Old sewage pipes
- High speed traffic
- Poor asphalt
- Poor aesthetic values





Objectives

- New sewage pipes
- Separated sewage (waste-/ stormwater)
- Local stormwater management
- Delayed stormwater contribution
- Reduced traffic speeds
- Urban greening
- Low maintenance
- Limited construction costs





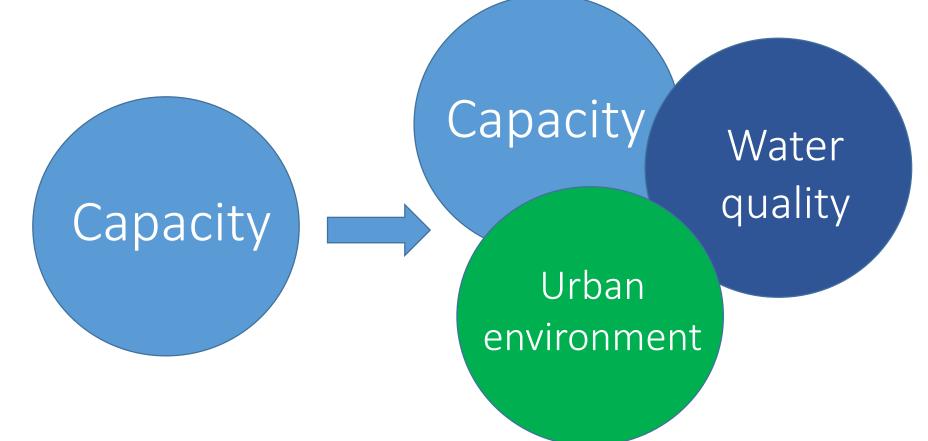
Heavy rains

10-year-rain (10 - 1 acre = 66000 liters min duration) (5000 sqm)





Stormwater objectives





A wide constellation

- Sewage Department (Ängelholm municipality)
- Traffic Department (Ängelholm municipality)
- Park Department (Ängelholm municipality)
- Maintenance Department (Ängelholm municipality)
- "Green/grey/blue" consultant (Markkompaniet)
- Trees vs Infrastructure consultant (VIÖS)
- Infrastructure consultant (Atkins)
- Science (Swedish University of Agricultural Science)



Present situation





Placing the raingardens



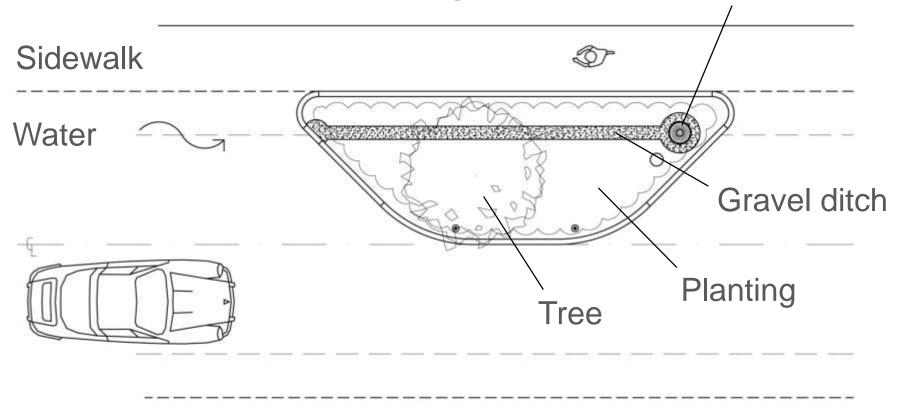
URBANMAGMA

Stormwater areas



AGMA

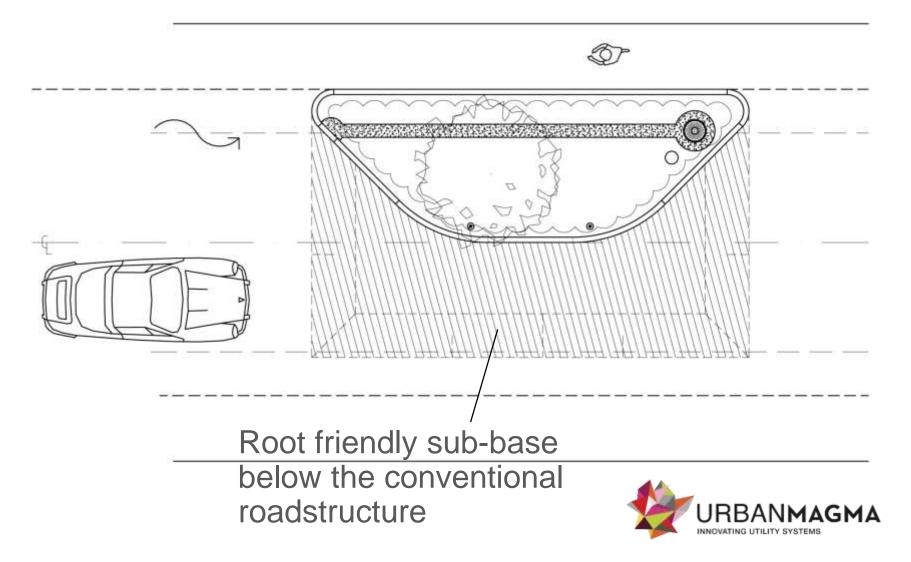
Plan over a raingarden overflow well



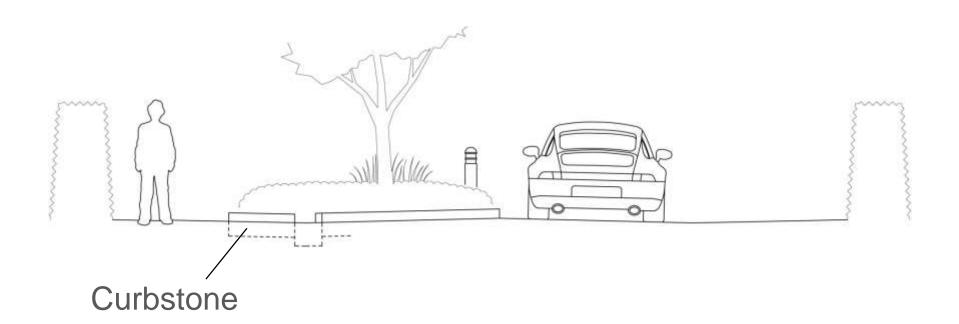
Sidewalk



Plan over the roadstructure

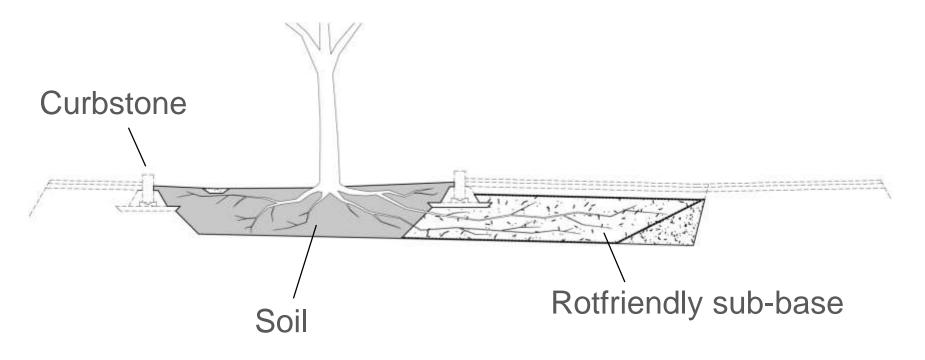


View of a raingarden



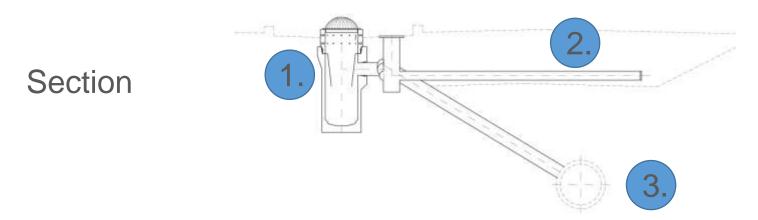


Section rain garden

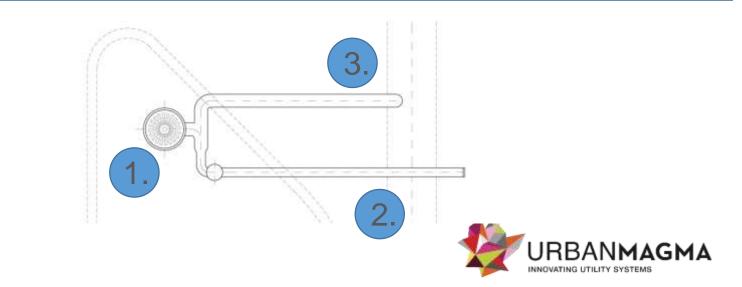




Planting pit with overflow well



1. Soil 2. Root friendly sub-soil 3. Stormwater pipe



Plan

Choosing plants



Natural habitat



Urban habitat



Choosing plants

- Drought
- Flooding
- Poor soil conditions
- Compact habit



Freeman maple (Acer x freemanii 'Autumn Blaze')



Chinese silver grass (Miscanthus sinensis 'Gracillimus')



Northern bush honeysuckle (Diervilla lonicera 'Dilon')



Siberian dogwood (Cornus alba 'Firedance')



How about being an entrepreneur building greener and bluer cities 2.0?

- Still in it's begining
- Nice intentions somewhat obtuse tools
- Greening factor...
- Stormwater regulations...
- Other contries...
- Plant knowledge...



- Involve "all" professions
- Get everyone "on the train"



MEETING POINT URBANMAGMA MARCH 18-19 2015

Thank you for today!

SEE YOU AT MALMÖ CITYHALL 19.00 STORTORGET 1 MALMÖ



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"Lorem ipsum dolor sit amet por qem lourate destructea fil hjorte ab ream pom yteare som golm se."

ANNA ANNASSON



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