

National Research Programmes Addressing Commercial Urban Transport

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Country presentation Sweden

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VINNOVA



The Swedish Agency for Innovation Systems

Innovation systems

An innovation system is the network of public and private institutions in which production, distribution and use of new knowledge and technology take place.

OECD definition

Research: Money transformation to Knowledge & Competence

Innovation: Knowledge & Competence transformation to Money

Innovation system development is to make above efficient, e.g. to make investment in R&D profitable

VINNOVA

The Swedish Agency for Innovation Systems

VINNOVA's mission

Promote sustainable growth for
industry
society
people

By improving development of Innovation Systems at
national level
sectoral level
regional level

Through financing of R&D & demonstration in
technology
transport
working life

Swedish research funding organisations

Public research funding organisations

VR The Swedish Research Council	~ 1800 MSEK
VINNOVA The Swedish Agency for Innovation Systems	~ 1000 MSEK
FORMAS The Swedish Research Council for Environment Agricultural Sciences and Spatial Planning	~ 240 MSEK
FAS Swedish Council for Working Life and Social Research	~ 240 MSEK
STEM Swedish Energy Agency	~ 600 MSEK

Privat or semi privat research funding Foundations

SSF Swedish Foundation for Strategic Research	~ 800 MSEK
KKS Foundation for Knowledge and Competence Development	~ 400 MSEK
MISTRA Foundation for Strategic Environmental Research	~ 250 MSEK
STINT The Swedish Foundation for International Cooperation in Research and Higher Education	~ 150 MSEK
RJ The Bank of Sweden Tercentenary Foundation	~ 400 MSEK
KAW Knut and Alice Wallenberg	~ 500 MSEK

10 SEK = 1,1 EURO

Swedish research funding organisations (cont 1) in transport sector

Sector administrations

Swedish National Road Administration	~220 MSEK
Swedish National Railroad Administration	~ 70 MSEK
Swedish National Maritime Administration	~ 5 MSEK
Swedish National Civil Aviation Administration	~ 15 MSEK
Swedish National Rescue Administration	~ 5 MSEK

Other state agencies

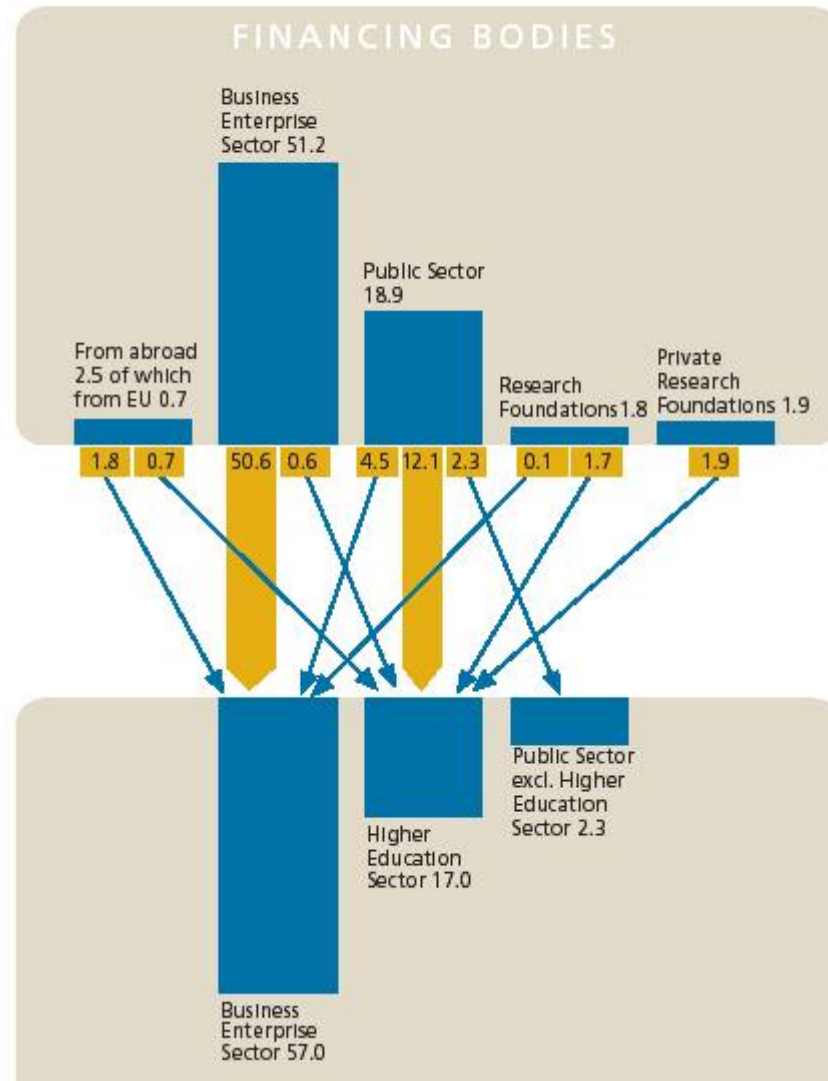
STEM Swedish Energy Agency	~ 100 MSEK
SIKA Swedish Institute for Transport and Communication Analysis	~ 5 MSEK
VINNOVA Swedish Agency for Innovation Systems	~ 160 MSEK

Scientific Boards

FORMAS The Swedish Research Council for Environment Agricultural Sciences and Spatial Planning	~ 25 MSEK
FAS Swedish Council for Working Life and Social Research	~ 25 MSEK

10 SEK = 1,1 EURO

The flow of money to R&D in 1999. SEK 1000 million.



Swedish research funding organisations (cont 2) in Logistics and Freight Transport (Tot 25 MSEK/yr)

Sector administrations

Swedish National Road Administration	~	3 MSEK
Swedish National Railroad Administration	~	4 MSEK
Swedish National Maritime Administration	~	1 MSEK
Swedish National Civil Aviation Administration	~	0 MSEK
Swedish National Rescue Administration	~	0-1 MSEK

Other state agencies

STEM Swedish Energy Agency	~	?? MSEK
SIKA Swedish Institute for Transport and Communication Analysis	~	1 MSEK
VINNOVA Swedish Agency for Innovation Systems	~	16 MSEK

Scientific Boards

FORMAS The Swedish Research Council for Environment Agricultural Sciences and Spatial Planning	~	? MSEK
FAS Swedish Council for Working Life and Social Research	~	? MSEK

10 SEK = 1,1 EURO

The last decade

Commercial Urban Transport

- There are three cities in Sweden that have more than 300.000 inhabitants: Stockholm, Gothenburg and Malmö. Environmental zones were implemented in the mid 90's in the city areas.
- Increasing traffic causes congestion and accessibility problem
- The urban freight transport is affected by the logistic trends:
 - Increased competition on the market, (mergers and acquisitions)
 - Outsourcing, 3PL
 - ICT is a main driver
 - E-commerce, growing not as fast as we thought
 - Environmental considerations, quality systems

The last decade

Commercial Urban Transport

Programmes and projects

During the last decade there were no Research Programmes exclusively directed to the area Commercial Urban Transport but included in other programmes such as:

KFB (Swedish Transport and Comm. Research Board => VINNOVA)

- Electric and Hybrid Vehicle Programme

- Freight Transport and Logistics

- E-commerce

- ICT

NUTEK (Swedish National Board for Industrial and Technical Development)=> VINNOVA) (www.vinnova.se)

- Logistics

SNRA Swedish National Road Administration (www.vv.se)

- Commercial Traffic

- Urban Transport Systems

Municipalities

- Traffic planning

Environmental Zones

Access restrictions such as the environmental zone for heavy vehicles plays an important part in reducing the environmental impact from heavy vehicles in the city.

- There are four cities in Sweden that have environmental zones (1996-); Stockholm, Gothenburg, Malmö and Lund.
- The main regulation for diesel engine-driven heavy vehicles driving in the environmental zone in the cities is that the vehicle must not be more than eight years old.
- The environmental zone concern heavy vehicles and buses with a weight of more than 3 500 kilo.
- It is possible to get an exception, with the demands described below, to the regulation but an application is required. Necessary equipment for the exception has to be tested and approved.

Environmental Zones con't (1)

- Stockholm: Zone (app. 5 x 7 km) about 250 000 persons reside and there are about 280 000 work places.
- Gothenburg: the Zone (app. 3 x 5 km) about 100 000 persons reside, about the same number of work places.
- Malmö: Within the Zone (app. 3 x 3 km) about 80 000 persons reside and there are about 50 000 work places.
- Lund: Within the Zone (app. 2 x 2 km) about 17 000 persons reside and there are about 19 000 work places.

Environmental Zones con't (2)

Exceptions in Stockholm from 2002-01-01 (The zone was implemented in 1996 in the inner city area of Stockholm).

Vehicles with exceptionally low emissions. Vehicles that have requirements to be certified according to the Euro IV or better can, after a special application, accord more than one-year allowance to drive in the environmental zone.

Vehicles provided with approved equipment for exhaust emission control. Vehicles older than eight years will get an exception to be allowed to drive in the environmental zone some extra year/s if the vehicle has been equipped with exhaust emission control.

Vehicles that have special bodywork and are equipped with approved exhaust emission control. Vehicles with special bodywork older than eight years equipped with exhaust emission control will get an exception to drive in the zone.

Change of motor. If the vehicle has been equipped with a new motor with at least Euro 3, it can be allowed to drive in the environmental zone for some additional years.

Environmental Zones con't (3)

- Municipal Councils have the right to ban polluting diesel powered trucks and busses with a total weight over 3.5 tonnes
- Vehicles entering the environmental zone need to have “environmental class” stickers on their windscreen

Ongoing Activities Since 1997

DIALOG- promoting consolidating food deliveries

Box Delivery, Coop, STEM, Green Cargo, MoEnv, Schenker, SNRA and VINNOVA.

17 coordination and consolidation project

Financed by STEM, SNRA and VINNOVA.

Gothenburg (3), Stockholm (3)

Other projects

Financed by STEM, SNRA and VINNOVA.

ICT, EHV, Distribution Studies, E-commerce

KFB (= VINNOVA)

Electric and Hybrid Vehicle Programme (EHV)

- 1993 – 2000 national programme for research, demonstration, and development regarding electric and hybrid vehicles.
- 120 projects were produced.
- Budget 320 Mill SEK (publ + priv.),
- 230 vehicles in demo projects, only a few lorries

The goals for the programme have been:

- To assess the potential for introducing and using electric and hybrid vehicles in a short and long term perspective
- To assess the effects of electric and hybrid vehicle introduction on markets, communities, and the environment.
- To support the introduction and demonstration of electric and hybrid vehicles within the program span.

Results: increased knowledge, number of vehicles tripled but the market is reluctant. Projects continue on a municipality level.

The Eco vehicle project in Gothenburg

- The aim is to increase use of vehicles with less environmental impact than current petrol and diesel vehicles.
- The target is to introduce 10,000 light eco vehicles in the Göteborg region during the 5-year period 1998-2003, which represents 3% of the vehicles on the road. A subsidiary target is to replace half of the municipality's 2,000 light vehicles with Eco vehicles.
- The project is coordinated by Göteborg Traffic & Public Transport Authority (Trafikkontoret Göteborgs Stad), the Environment Administration (Miljöförvaltningen), Gatubolaget and Göteborg Energi. Decisions on direction and financing are made by the Traffic & Public Transport Committee (Trafiknämnden) and Göteborg City Council.

The Lundby project in Gothenburg

www.lundby-vision.se www.miljo.chalmers.se/case/

A goods project was started within the collaboration between the City of Göteborg and Volvo. This has been further developed and now includes Volvo, Traffic & Public Transport Authority and Norra Älvstranden Utveckling AB.

The project aims to reduce the number of transport lorries by establishing a competition-neutral marketplace that can be used to group buyers and suppliers of office materials. The marketplace will collect and coordinate orders for office materials thereby reducing the number of deliveries within Norra Älvstranden.

STOCKHOLM TOLL RING?

What are the Implications?

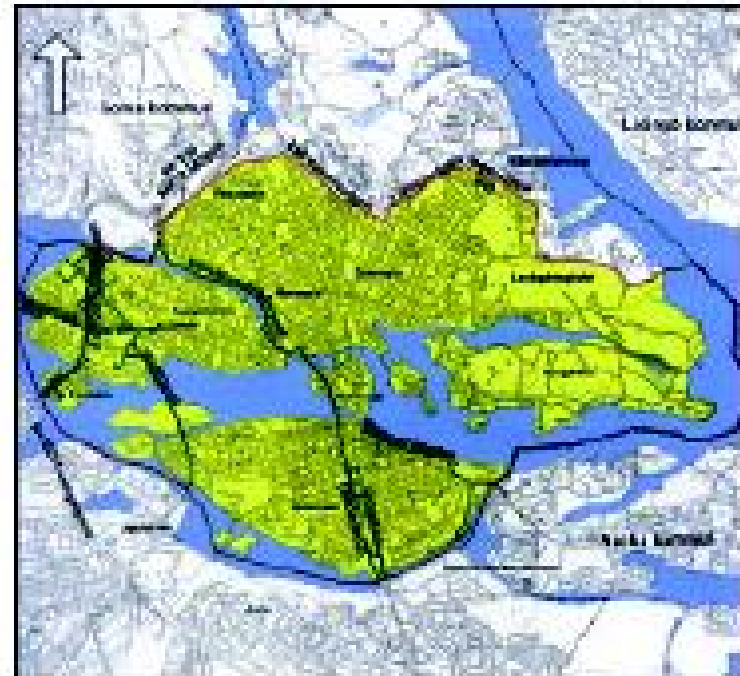
- Perceived operating costs may rise
- True operating costs may fall
- End-users may be more aware of transport costs
- There may be an eventual change in land-use or logistics

Local operators will be particularly affected?

- Permit schemes will enable multiple access
- Local traffic conditions may be enhanced
- There may be an incentive to change time of day or improve loading factors
- Exemptions may be offered to clean vehicles

STOCKHOLM TOLL RING?

- Agreement between Social Democrats+Green+Left a basis for new government in Oct 2002
- Decision in Stockholm Municipality Council 2 June 03?
- Start 2004/2005 as a test
- 2006 poll in Sth Region
- 1 (2?) zone, Motorway free
- 20 SEK rush hour?
- 10 SEK other?
- max 80 SEK/day?



Activities Since 1997

Main findings

Supply-chain perspectives is missing, the lack of awareness and knowledge is a serious obstacle

Difficulties to get before-and-after evaluations and data

Policy measures tend to lack long-term

Non-market based urban distribution centres doesn't work

Consolidation seems to be an emerging trend

Government involvement in urban goods transport is based on environmental considerations

Activities Since 1997

Consolidation projects - Main findings

- **Big potential – difficult in practice**
- **Private initiatives and initiatives in urban areas less successful**
- **Public sector consolidation often successful**
- **Neutral actor best as coordinator**
- **Important to allow starting-up period**
- **A lot of practical problems (temp. zones etc.)**
- **Attitudes to change is important**
- **Consolidation is a tool (not an objective)**

Funding instruments

STEM, SNRA and VINNOVA are the main funders. Funding from Municipalities to a very small extent.

Pure research projects will be funded up to 100% of its costs

Development projects: normally 50% of costs must be covered by participating organisations (hauliers, industry, municipalities etc)

Comments

- Participation funding by hours (600 SEK/hour)
- SMEs (hauliers and industry) can't wait
- Limited resources

Future programmes

STEM, SNRA and VINNOVA are the main funders. Funding from Municipalities to a very small extent.

- VINNOVA Strategic Plan 2003-2007- 18 areas of which 2 is in Transport:
 - **INNOVATIVE VEHICLES AND SYSTEMS FOR DIFFERENT TRANSPORT MODES**
 - **INNOVATIVE LOGISTICS AND FREIGHT TRANSPORT SYSTEMS**

But also

 - **INTELLIGENT AND FUNCTIONAL PACKAGING**
- SNRA (to be decided)
 - **Commercial transport**
 - **Transport in the City**
- STEM
 - **Energy and environment**

Implementation activities

STEM, SNRA and VINNOVA are the main funders.

Participation is the most successful implementation activity

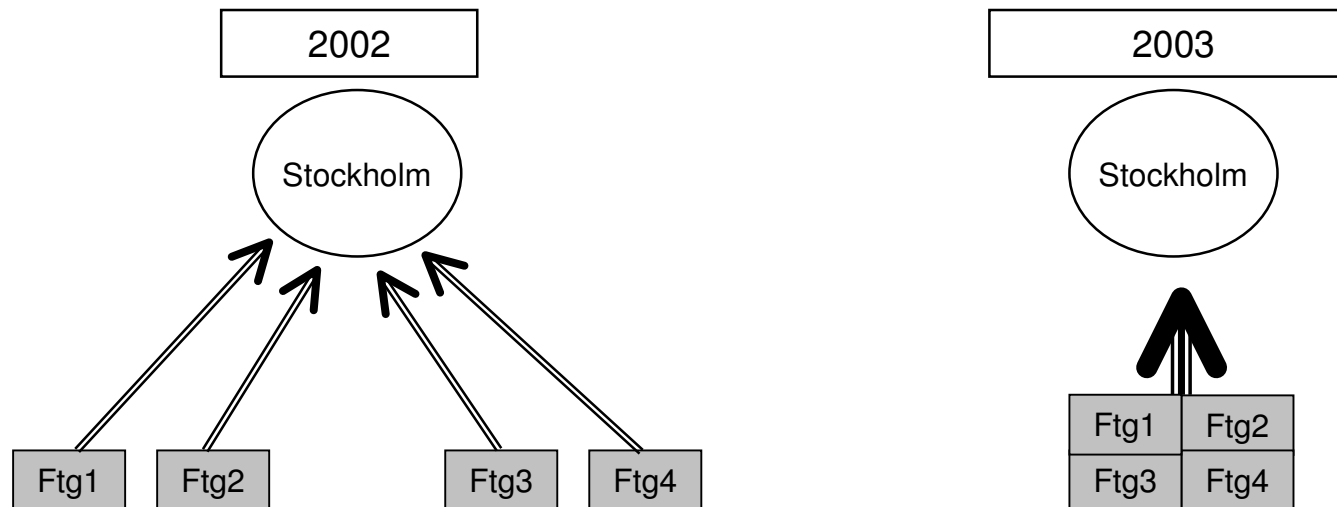
When an actor finds it worth to participate, they also are trying to implement the result (if they have time to wait!!!)

Other activities are

- Reports
- Seminars
- Presentations (road shows, web sites)

TFK research report used in a coordination project

- When moving from a distribution area 2 km outside Stockholm City, to an area more than 15 km away, 5 fresh food retailers decided to coordinate their transport flows
- The coordination of the distribution was based on a mutual understanding of the benefits and sharing the risks
- Today, after six months experience, the pay-back of investments seems to be less than 6 months



International Activities

EU –projects in 3FP, 4FP and 5FP

SURFF

IFMS

IDIOMA

BESTUFS

ELCIDIS

ZEUS

TELLUS

etc

COST 321

Nordic Cooperation (www.ntf-research.org)

International Activities

It is important to continue the international activities in all levels of cooperation:

- Information exchange, workshops, conferences, thematic networks
- Joint projects; proposals, consortium, programmes

It is also important to coordinate the research in the field of city logistics with other research areas such as supply chain management, traffic planning, environmental research etc.

And we must consider the City Logistics Innovation Process!

Tack you for your attention

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www.vinnova.se