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Subscription: sophie.didriksson@nordregio.se

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OLE DAMSGAARD Director
ODD IGLEBAEK Editor
CHRIS SMITH Language Editor

Graphic production: Osigraf Oslo as, Norway | Phone: +47 64 87 60 80

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NORDREGIO
Street adress:
Holmamiralens väg 10
Stockholm, Sweden
Tel. +46 8 463 54 00
Fax +46 8 463 54 01
www.nordregio.se

ODD IGLEBAEK
Nordregio
Box 1658
SE-111 86 Stockholm, Sweden
Tel. +46 8 463 54 05
Fax +46 8 463 54 01
E-mail odd.iglebaek@nordregio.se

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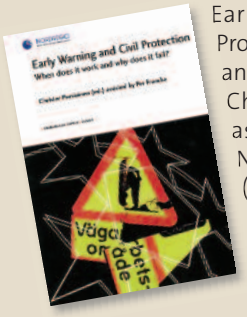

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On peripheries and European futures

Peripheries on the streets below?
Photo of Sao Paulo provided by:
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Earlier this year the Museum of Architecture in Stockholm held an exhibition on 'global urban futures'. For this visitor the most interesting part was a documentary by the Italian architect/artist Francesco Jodice portraying the mega-city of Sao Paulo.

Sao Paulo is the richest city in Brazil. It is modern and is in many ways the industrial hub of South America. Close to twenty million people live in the city and its adjoining municipalities, making it one of largest urban areas in the world.

A key element in this issue of Journal of Nordregio is the discussion over the future of the European space, which definitively includes the megapoles of this continent. In the lead article Professor Klaus Kunzmann agues that the periphery is not only the area far or further away from the cities. In fact, the periphery can be the poor suburbs, the *banlieues*, as they are called in France, just outside the city centres.

Taking this argument to Sao Paulo one could argue that the even the ordinary city street could constitute 'the periphery'. The point here is that if the richest segment of the population moves through this area they are very likely to do so in armoured cars.

In fact many members of the elites already move around the city by helicopter. Each week there are 28 000 private helicopter-trips in Sao Paulo both for business and pleasure. Many of the city's skyscrapers have their own helipad on the roof. Often, according to Jodice, they are built illegally.

Many of the arguments put forward by Professor Kunzmann are based on the plans for the Trans European Transport Network (TEN-T). These are the major transport-strategies for Europe's railways, roads, seaways and airports. It is likely that existing plans will not now be altered extensively. So what then do they look like? For an overview see pp 16-17, while on p8 readers can find a more in depth overview of the likely Nordic and Baltic scenario.

In the article on container usage pp 4-6 we draw attention to the fact that more and more goods, particularly out of the Port of Gothenburg, are moved by rail and not now by road. From an environmental point of view, this is of course good news.

However, not all Nordic authorities are really pushing in the same direction. Norway, in particular, seems to be very sceptical about investing in the railway network – except for national regional trains to-and-from Oslo. This was clearly demonstrated when the Norwegian *Nasjonal Transportplan 2010-2019* was published earlier this year.

The point was also made again when the political leaders of Copenhagen, Gothenburg, Oslo and Stockholm met in Oslo on the 10th April 2008 to discuss the so-called 'Nordic Triangle'. The triangle constitutes the three transport corridors running between the aforementioned capitals.

In the triangle, investment and improvements are being undertaken in many places, but this is occurring to a much smaller extent on the Oslo-Karlstad leg. Within the context of currently agreed plans it may even be close to 2040 before high-speed trains will be running regularly here. This will, without doubt, have serious consequences for potential regional developments in this area. However at the new Fehmarn-bridge between Denmark and Germany there could be both high-speed trains and motorways long before this.

In this issue we also provide overviews of the Baltic-Nordic energy grids. Among the Nordic producers and distributors of energy the argument goes that the grids must be expanded. This is needed both within the Nordic countries and to further develop the links with the European continent.

The argument here in part revolves around the production and sale of more energy, although that is not really mentioned outright. Rather the focus in the argumentation is that these extensions will increase the amount of renewable energy exported to the Continent. On pp 9-11 we present the latest developments in this field. In addition, on pp 26-27 Prof. Claudia Kemfert highlights the conflicts which may arise with the EU's desire for future energy policies to be both climate-friendly and competitive.

The official Norwegian position is that they are definitely interested in drilling for oil and gas in the Arctic. The politico-economic background to this stance is perhaps reflected in the fact that Norway's position as a fossil-fuel exporter is declining – down from number three to number five in global terms.

At the end of May 2008 the Foreign Ministers of the five states, Canada, the USA, Russia, Norway and Denmark (Greenland) bordering the Arctic Sea met at Illuissat in Greenland. Reports from the meeting indicate that all five powers want to expand oil and gas production in the area. It is often noted in this context that specialists argue that 25 percent of the world's undiscovered resources of oil and gas may be located in Arctic.

One key question arising from this meeting is the extent to which 'international waters' status areas will be allowed to remain in the Arctic. Russia has thus far been to the fore in this regard and is claiming about a third of the area at present below the North Pole ice sheet. The other four countries have naturally objected, but not on a principled basis. Rather they seem instead to be saying that Russia is simply claiming too large a share.

We hope to delve deeper into this theme in the next issue of *Journal of Nordregio*, planned for publication in late September.

Odd Iglebaek, Editor
odd.iglebaek@nordregio.se

Container-terminal at the Port of Gothenburg. Photo provided by Gothenburg Port Authority

Containers challenge rails and roads

Motorbikes, flat-screen televisions, sofas, wardrobes, wine, beer, soft-drinks, children's clothing, men's suits, women's underwear, tents, rubber-boats and snowboards: The more we consume, the more the need for global transport increases and the more items get moved by container. It is so easy; from factory to door, by rail, road and sea. And as most wholesalers will tell you: – If you can order at least one container minimum, it is also much easier to make a profit!

Anybody planning for future transport should then be aware of the centrality of containers. They are growing in importance all the time and they are growing fast. According to the Port Authority of Gothenburg, there were 4 million containers-shifts or throughputs as they are called in the trade, in what they call the Scandinavian and Baltic container market, in 2001.

Already, by 2007, this figure had growth to 8 million. Now expectations are that it will increase to 15 million by 2015. That is a continuous growth of some ten percent year on year.

The largest container-harbour in the Scandinavian-Baltic area is St. Petersburg with a throughput last year of close to 1.7 million containers. The number of container-ships is constantly increasing and is a matter of some frustration to crews on the many ferries sailing in the Gulf of Finland. – You know, these vessels are not like us, they do not sail at regular hours, so we always have to be on extra look-out for them, they explain.

The Port of Scandinavia?

Container-port number two in this part of the world is Gothenburg. Last year this harbour on the Swedish west-coast, had a throughput of 841 000. – The number of containers coming in is approximately the same as the number going out, just above 400 000, says Kristina Weber at the Gothenburg Port Authority. In terms of containers, the Port of Århus in Denmark is number three with 504 000 throughputs.

The large majority, more than 95 percent of all containers arriving at, or leaving, the Port of Gothenburg come by rail or road. – In fact, less than five percent continue on by ship, explains Kristina Weber.

The Port of Scandinavia is what the harbour of Gothenburg calls itself. Gothenburg is the only port in the Nordic countries with trans-oceanic calls from the Far East and North America, they claim. Furthermore they say that 70 percent of Nordic industrial production is located within a 500 km radius of the city, and that all of that can be reached within six hours. For that to be true, transport has to move at an average speed of 83 km/hour.

More containers by train

From 2001 to 2007 the total number of containers coming in-or-out of the hub of Gothenburg, as the port also is called, grew from 595 000 to 841 000. While road-haulage was booming for many years, it is now train-traffic which dominates. The number of containers going by rail has grown from 118 271 to 322 210, that is more than a 100% increase. In percentage terms the equivalent overall growth rate saw an increase from 20 to 38%.

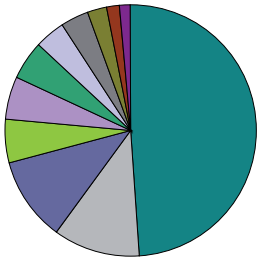
– Both ourselves and our customers want to use rail, mostly for environmental reasons, explains Eric Nilsson vice-president of the Gothenburg Port Authority. Although there is a lot of discussion in Sweden about whether it is possible to increase transport numbers by rail, Eric Nilsson still sees further possibilities: – It is difficult to say by how much, and there undoubtedly are major bottlenecks, single-line tracks and cross-overs only 350 meters long, while many goods-trains are double that length. Nevertheless, we have managed to expand by 10-15% every year and hope we can continue.

In 2004 The Danish Centre of Architecture (DAC) presented a proposal by PLOT-architect to build an artificial island between Denmark and Germany. The island would be one element in the construction of new Fehmern-brigde, the direct link between Copenhagen and Hamburg, and would encompass a harbour to cater for up to 300 million people in Northern Europe. – I understand the idea, but I cannot say that the location is the best, considering all the large ships that would have to go through Øresund, comments Eric Nilsson.

One billion throughputs

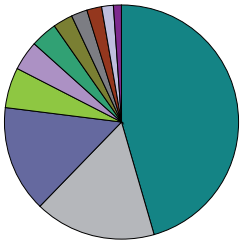
For all the ports of the world it is estimated that containers were moved some 450 million times last year. The estimate is also that each container was shifted 3.2 times during this period. In other words, some 120 million containers were shifted through the world's harbours. In addition there are many containers which are not transferred in and out of ports, which might never see the oceans at all. They spend their time on rail/rail, road/road or road/rail. In total therefore, the actual number of containers, globally, could be as high as

Total export & import to and from Sweden, 1 200 000 TEU (loaded)



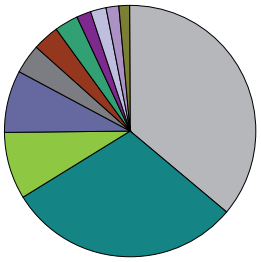
Far East	49%	585 312 TEU
USA	11%	135 302 TEU
Intra Northern Europe	11%	129 523 TEU
Mediterranean	6%	66 400 TEU
South America	5%	65 759TEU
Central America	5%	59 994 TEU
Middle East	4%	48 000 TEU
Africa	4%	42 240 TEU
Australia & New Zeeland	3%	30 240 TEU
India Sub Continent	2%	20 251 TEU
Canada	1%	16 977 TEU

Total export & import to and from Finland, 1 277 500 TEU (loaded)



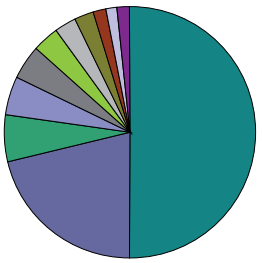
Far East	46%	581 622 TEU
Intra Northern Europe	17%	214 160 TEU
USA	15%	187 459 TEU
Mediterranean	6%	70 400 TEU
South America	4%	52 224 TEU
Middle East	3%	42 403 TEU
Canada	3%	32 842 TEU
Africa	2%	25 937 TEU
Australia & New Zeeland	2%	22 936 TEU
Central America	1%	19 817 TEU
India Sub Continent	1%	15 709 TEU

Total export & import to & from Russia, 1 383 800 TEU (loaded)



Intra Northern Europe	36%	498 600 TEU
Far East	30%	416 186 TEU
Mediterranean	9%	118 691 TEU
USA	8%	113 505 TEU
Africa	4%	54 708 TEU
Australia & New Zeeland	3%	44 046 TEU
Middle East	3%	41 550 TEU
India Sub Continent	2%	29 350 TEU
Central America	2%	25 887 TEU
South America	2%	22 963 TEU
Canada	1%	19 515 TEU

Total export & import to & from Norway, 504 000 TEU (loaded)



Far East	50%	252 697 TEU
USA	21%	105 022 TEU
Middle East	6%	31 403 TEU
South America	5%	24 787 TEU
Africa	4%	22 518 TEU
Mediterranean	4%	17 718 TEU
Intra Northern Europe	3%	15 256 TEU
Canada	2%	12 449 TEU
Australia & New Zeeland	2%	9 247 TEU
Central America	1%	6 753 TEU
India Sub Continent	1%	6 039 TEU

One TEU is equivalent to one twenty foot long container and all containers are calculated in this unit to provide international comparisons. Diagrams and figures above provided by Gothenburg Port Authority.

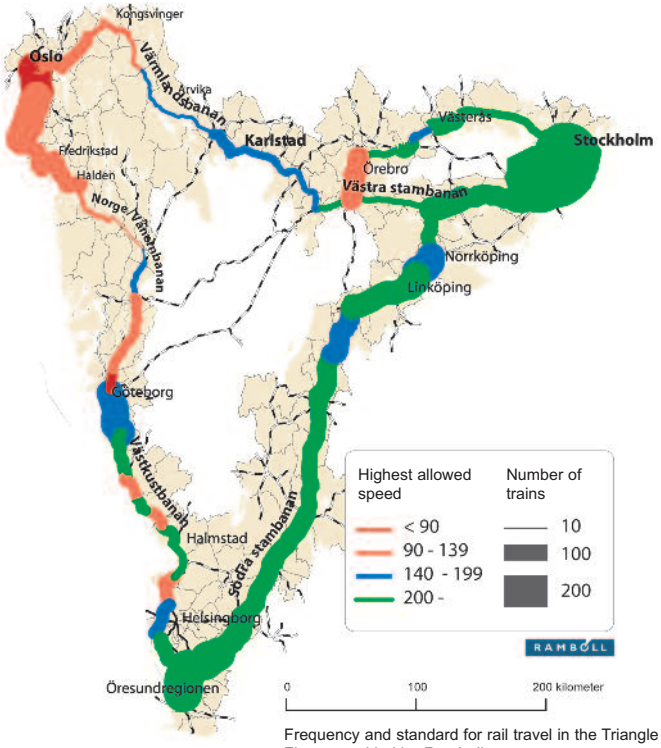
Container-ships arriving and leaving the harbour of Gothenburg. Photo provided by Gothenburg Port Authority.

Total TEU per major ports and country

COUNTRY	2000	2004	2005	2006	2007
St Petersburg	233 000	773 000	1 119 000	1 450 000	1 682 000
Kaliningrad	20 000	60 000	90 000	115 000	188 000
Russia total	**253 000**	**833 000**	**1 209 000**	**1 565 000**	**1 870 000**
Helsinki	376 500	500 000	460 000	420 000	431 000
Kotka	192 000	326 000	367 000	462 000	571 000
Others	360 000	487 500	485 000	540 500	605 500
Finland total	**928 500**	**1 313 500**	**1 312 000**	**1 422 500**	**1 607 500**
Göteborg	615 000	736 000	788 000	820 000	841 000
Helsingborg	97 500	99 000	108 000	136 000	200 000
Others	208 500	226 500	232 000	322 500	359 000
Sweden total	**921 000**	**1 061 500**	**1 128 000**	**1 278 500**	**1 400 000**
Aarhus	330 000	391 000	396 000	427 000	504 000
Copenhagen	112 500	113 000	125 000	138 000	148 000
Others	65 000	82 500	88 500	95 000	101 000
Denmark total	**507 500**	**586 500**	**609 500**	**660 000**	**753 000**
Oslo	138 500	174 000	170 500	170 000	194 000
Larvik	35 500	40 000	42 500	45 000	50 000
Others	322 500	372 000	415 500	423 500	430 000
Norway total	**496 500**	**586 000**	**628 500**	**638 500**	**674 000**
Gdynia	188 500	377 000	400 000	461 000	500 000
Gdansk	18 000	41 000	70 000	76 000	94 000
Others	18 500	23 000	27 000	30 000	50 000
Poland total	**225 000**	**441 000**	**497 000**	**567 000**	**644 000**
Reykjavik	140 000	146 000	156 000	160 000	160 000
Others	175 000	190 000	200 000	200 000	200 000
Iceland total	**315 000**	**336 000**	**356 000**	**360 000**	**360 000**
Klaipeda	40 000	174 000	214 000	232 000	321 000
Lithuania total	**40 000**	**174 000**	**214 000**	**232 000**	**321 000**
Riga	85 000	153 000	156 000	160 000	212 000
Ventspils	500	500	1 000	14 500	17 000
Others	2 000	2 500	3 000	8 000	8 000
Latvia total	**87 500**	**156 000**	**160 000**	**182 500**	**237 000**
Tallinn	77 000	113 000	128 000	152 000	200 000
Estonia total	**77 000**	**113 000**	**128 000**	**152 000**	**200 000**
TOTAL	**3 851 000**	**5 600 500**	**6 242 00**	**7 058 000**	**8 066 50**

Figures provided by Gothenburg Port Authority.

Source: Based on interviews and website research



Frequency and standard for rail travel in the Triangle
Figure provided by *Rambøll*

200 million and the number of throughputs could top one billion, or even more.

It is harbours like Shanghai, Singapore, Hong Kong and Shenzhen, which are the new kingdoms of the container. They each handle more than 20 million throughputs every year. Singapore, at the top of the pile, saw close to 28 million for 2007.

The final figures are provided by the Port of Rotterdam. In terms of handled tonnages this is the third largest harbour in the world. In terms of containers, it is number six. In total, 5.6 million containers came through this harbour and almost the same number, 5.3 million, went out. That gives a throughput close to 11 million.

Hamburg is the other really large container-port in Europe. Measured by throughputs it is number nine in the world. In total the number of containers going through the German harbour port was close to 10 million last year.

Both Rotterdam and Hamburg are major harbours for transhipment to the Nordic and Baltic harbours. That means the containers are forwarded by a new and usually smaller ship and not by train or lorry.

– Although we have the capacity to receive them, the really big container-ships do not regularly call at our ports, explains Eric Nilsson vice-president of Goteborg Port Authority. – Usually it is only some sections of the cargo which ends up in our markets. Therefore the total cost of transport becomes lower, if the containers are moved to smaller vessels for the final legs, he adds.

The Nordic Triangle

The Nordic Triangle is one of the elements in the TEN-T (see pp 16-17). Recent experiences show that the leg from Gothenburg to the region of Øresund has seen constant growth. To some extent this can be explained by the provision of improved transport-structures.

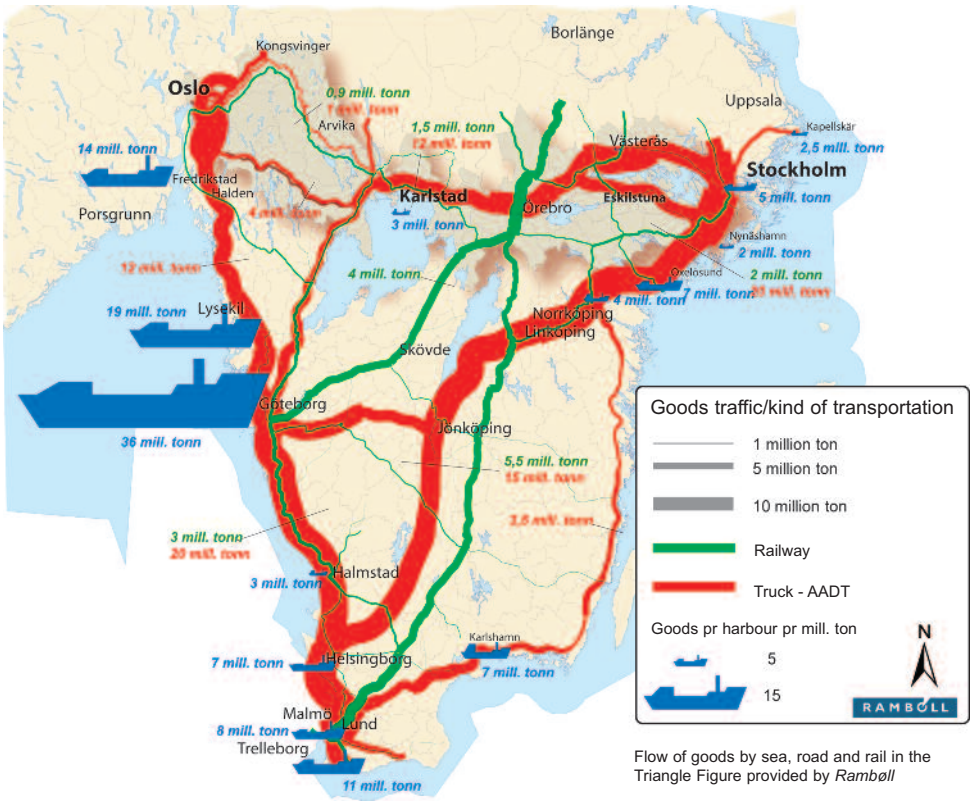
The leg of the triangle often referred to as the 'Growth Corridor Oslo – Karlstad – Stockholm' aims to achieve a similar

result. Both rail and road connections are however of a relatively low standard between Oslo and Karlstad. The plan is thus to change the tradition where Sweden turns eastward while Norway tends to look more to the west, in terms of economic development.

At present, daily border commuting between Sweden and Norway includes some 18 000 persons, well above the 14 000 daily crossing Øresund. Almost half of the commuters between Sweden and Norway cross at Svinesund.

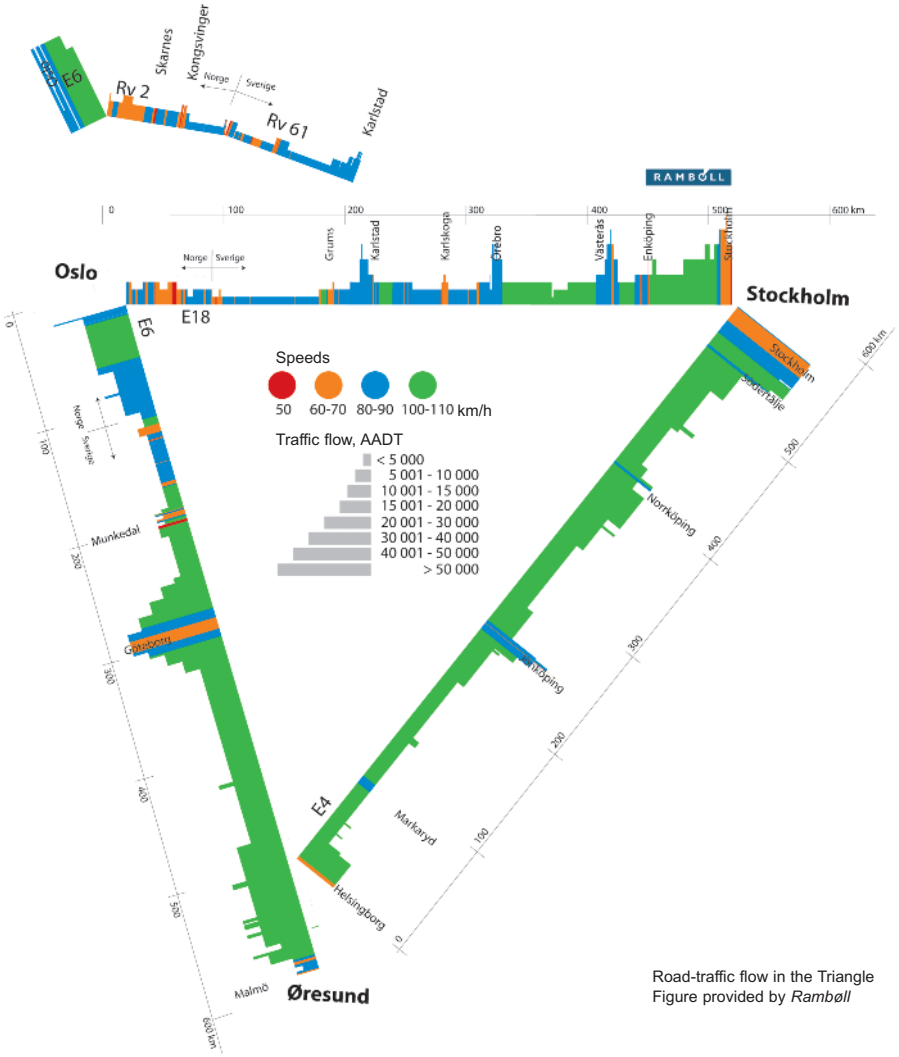
In recent years significant investment has gone into the Swedish railway system. Trains between Stockholm and Malmö now take two hours less than they did 20 years ago. For Oslo – Stockholm however the travel time is the same today as in the 1980s.

By Odd Iglebaek
odd.iglebaek@nordregio.se



Flow of goods by sea, road and rail in the Triangle Figure provided by *Rambøll*

One dual-track rail line is equialent to a 12-lane motorway, but requires only eight per cent of the ground area.



Road-traffic flow in the Triangle Figure provided by *Rambøll*

Nordic Baltic Transport

Where are the major Baltic and Nordic transport infrastructure projects? Below you can find one attempt to draw up such a shortlist in the context of the Nordic and Baltic transport infrastructure projects to complement the TEN-T (for TEN-T see pp 16-17). The list is based on, *Nordic Investment Bank: Examining the desirability of a Northern Dimension Transport and Logistic Partnership (NDTLP) – A background paper,* written by Prof Lauri Ojala, Turku School of Economics, and published in April 2007. After the number follows the name of the project, the mode, the countries directly affected and the estimated cost in millions of euros.
See also: www.interbaltic.net

1. WSHD road in St. Petersburg Road RU 2500
2. Via Baltica in Northeastern Poland Road PL, BSR 500+
3. A1 Motorway completion from Gdansk Road PL, BSR 500+ yes
4. E6 (Gothenburg) and E18 (Stockholm), Norway Road NO, (SE) 400+
5. S3 Swinoujscie SzczecinWroclaw Road PL, (DE, SE) 300+ maybe
6. IXB Corridor KievMinskVilnius Klaipeda Road LT,BA,UA 200+
7. Bordercrossing in SE Finland and NW Russia Road FI, RU 100+
8. St. PetersburgTallinn road Road EE, RU n.a.
9. Bridge to Sovetsk (Kaliningrad) Road LT, RU 20+ yes
10. Rail Baltica Rail LT, LV, EE, PL n.a. maybe
11. Fehmarn Beltrelated projects Rail DE, DK 2000+ Yes, bridge
12. IXD Corridor KaunasKaliningrad Rail LT,RU 100+
13. Barents Link; Northern EastWest Corridor Rail RU, FI, SE, NO 500+
14. KirunaNarvik rail improvement Rail SE, NO, (FI, RU) 200+
15. LedmozeroKotschkoma rail link Rail RU (FI, SE, NO) n.a.
16. HelsinkiVantaa airport enlargement Air FI 250+
17. St. Petersburg (Pulkovo) airport development Air RU 200+
18. Vilnius airport enlargement Air LT 150+
19. Riga airport enlargement Air LV 80+
20. Tallinn airport and runway enlargement Air EE 40+
21. Motorway of the Sea projects Maritime BSRwide n.a. yes
22. Icebreaker investment(s) Maritime EE, RU, FI 50+/ship maybe

Grid expansion needed

The Nordic electricity market has already achieved trendsetter status internationally, both in terms of harmonisation and integration. To maintain this status in the years to come however, Nordic stakeholders need to act, particularly over grid expansion.

Since the Nordic electricity market was first formed the focus on climate change and the environmental aspects of energy production has significantly intensified. Today the emission of greenhouse gasses is one of the central issues in the energy discussion, second only in importance to the security of supply. This creates opportunities for and challenges to the Nordic electricity market.

Fossil fuel usage still predominates in the Nordic energy mix while linkage to the European electricity grid also sees a further influx of fossil-based energy in the Nordic region. This ensures that the electricity price in the Nordic region reacts to market signals in respect of the increased costs associated with fossil-fuel based energy production. This cost reaction is quickly 'passed on' by the energy companies to their customers. In this context, Nordic governments appear to have an additional incentive to increase the share of renewables in the Nordic energy mix even further. The total installed capacity in the Nordic market, in 2007, was 92 330 MW (see figure 1). With the combined climate and energy goals of the Nordic countries, the region could however become a substantial exporter of 'clean energy' before 2020.

All the Nordic governments have committed themselves to increasing the share of renewables in their national energy mixes in the coming years. EU targets in this respect place significant commitments on its members Denmark, Finland and Sweden. In addition, the Norwegian government recently announced that it will ratify the RES directive – thus subjecting Norway to the EU's binding renewables targets.

Increasing usage of renewable energy approaches in the energy system does however pose a number of challenges to the electricity market, most notably to the grid – as the transmission capacity needs to increase in line with the increased flow of energy. Building cables and transmission lines is a lengthy, unpopular and expensive process that needs to be taken into account when sites for renewable energy are chosen, and when the timeframes for implementation are being drawn up.

Electricity from renewable sources such as wind in addition displays a number of characteristics which increase the need for cross border inter-connectors. The electricity derived from wind power fluctuates – meaning that while there is plenty of electricity from wind when the wind is blowing; there is no electricity when there is no wind. Hydro power is a good source of balancing power in this respect. The grid thus needs to be expanded so that the fluctuating sources of energy can be balanced. If this is not done, congestion, failures and blackouts in the Nordic market will undoubtedly increase with wholesale adoption of renewables promotion.

As a whole, the Nordic market has already come a long way in terms of grid expansion. As noted above, new grid investment is expensive, and should not be undertaken when it is not socio-economically viable. The socio-economic calculations need to be made with the entire Nordic market in mind in order to attain the best result. This is the task of the Nordel Planning Committee.

In March this year, Nordel presented their Grid Master Plan 2008, which contained the organisation's recommendations for grid investment in the coming years. The plan builds on the five previously proposed and prioritised grid investments:

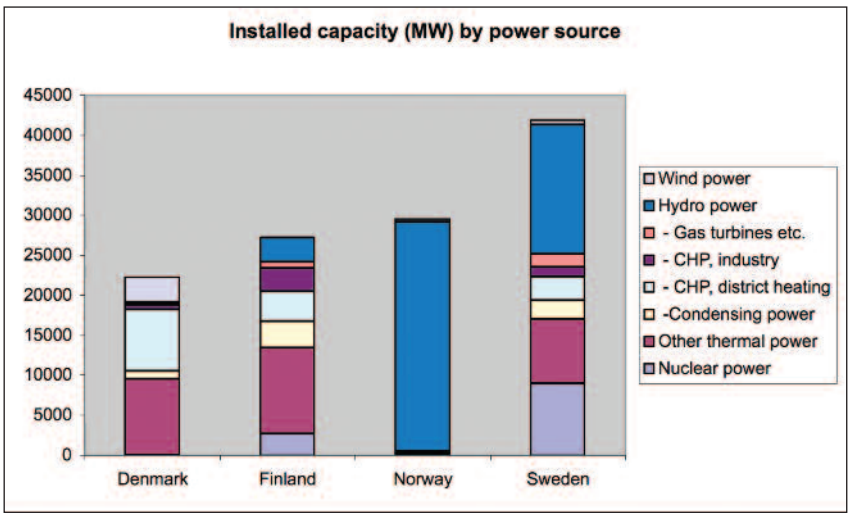
- The southern link between central and southern Sweden.
- The Great Belt Link in Denmark.
- The new Fennoskan 2 Link between Sweden and Finland.
- The new Nea-Järpströmmen Link between Norway and Sweden.
- The new Skagerrak Link between Denmark and Norway.

▶▶

Installed capacity in the region (MW) by power source

	Denmark	Finland	Norway	Sweden	Nordic region
Installed capaity (total)	12 699	16 544	29 268	33 819	92 330
Nuclear power	-	2 671	-	8 965	11 636
Other thermal power	9 554	10 743	244	8 094	28 635
-Condensing power	993	3 301	0	2 298	6 592
- CHP, district heating	7 687	3 737	131	2 954	14 509
- CHP, industry	567	2 924	49	1 229	4 769
- Gas turbines etc.	307	781	64	1 613	2 765
Hydro power	10	3 044	28 691	16 180	47 925
Wind power	3 135	86	333	580	4 134

Source Nordel, Nordreg Market Report 2007



Based on the realisation of the abovementioned five investments, Nordel also proposes three new investments (See figure below):

- The Ørskog-Fardal link in Norway
- The South-West link between Norway and Sweden (and between mid and south Sweden)
- The Arctic link (in Norway)

It is vital for the Nordic market that these investments are undertaken as soon as possible.

Parallel to the development of the Nordic grid, the national TSOs are also furthering their interconnector capacity to the continent, and hence increasing the power flow into the Nordic grid. The increased flow of power however further necessitates the need for a common Nordic solution to congestion management.

One of the crucial areas where further integration of the Nordic electricity market is possible is in the end-user market. According to NordReg, the Nordic association of regulators, there are substantial benefits if the integration of best practice solutions from across the Nordic countries can be built upon.

In 2005, NordReg announced the vision of a common Nordic end-user market by 2010. Though this goal may seem a little ambitious by 2010, it is this kind of vision that has made the Nordic market an example for others to follow.

By Amund Vik, Advisor, Nordic Energy Research amund.vik@nordicenergy.net

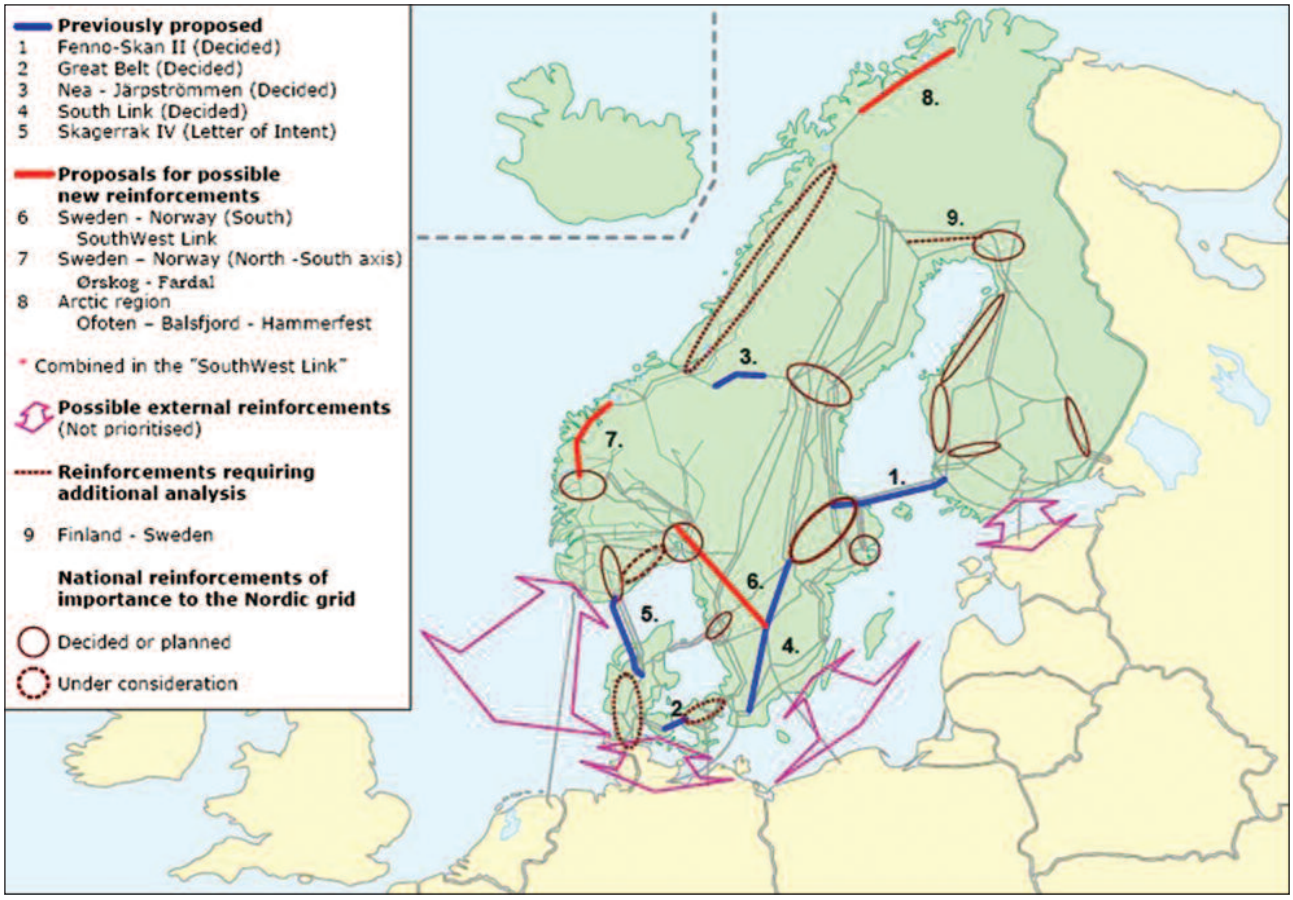
TSO = Transmission system operator: Statnett (NO), Svenska Kraftnätt (SE), Energinet.dk (DK) and Fingrid (FI). The national TSOs cooperate in the Nordic market through their organisation Nordel

Nordel is Nordic cooperating institution for the TSOs. Through Nordel, the TSOs cooperate on balance management, congestion management, peak load arrangements and investment planning. The regulation counterpart of Nordel is NordREG, the regulators' Nordic institution.

Nordel is a cooperative, unanimity-based organisation.

For more information on Nordel, see www.nordel.org

Nordel Grid Master Plan 2008




The electricity transmission grid in the Baltic Sea Region 2007
National boundaries
Thermal power plant
Nuclear power plant
Hydropower station
Wind farm
Substation
Line under construction
Conversion station
AC/DC/AC back-to-back station
550-750 kV line
380-400kV line
300-330kV line
220kV line
132-150 kV line
DC-line
Interconnection for voltage lower than 220 kV
N
0 100 200 300 km
Source:
DK, BY, FI, EE, LV, LT, NO, SE: Nordel 2007
DE; PL; RU: GENI 2007
© Nordregio & NLS Finland
Barents Sea
North Sea
Baltic Sea
Alta
Serebryanska
Kaitakoski
Kolskaya
Porttipahta
Vajukoski
Kobbelv
Vietas
Harspranget
Messaure
Letsi
Seitakorva
Pirttikoski
Petäjäkoski
Arkhangelsk
Severodvinsk
Svartisen
Rana
Røssaga
Ajaure
Poduzhemskaya
Krivoporolskaya
Ondskaya
Tunnsjødal
Haapavesi
Stornorrfors
Kilforsen
Vaskiluoto
Aura
Nea
Kristiina
Tahkoluoto
Meri-Pori
Olkiluoto
Imatra
Svetogorsk
Sosnovyy Bor
Loviisa
Kirishi
Forsmark
Inkoo
Iru
Balti Elektrijaam
Eesti
Kalininskaya
Kyndby
Asnæs værket
Esbjergværket
Stärnö
Barsebäck
Pskoy
Nordjyllandsværket
Ringhals
Oskarshamn
Riga TEC-1
Riga HES
Bisuciems
Plavinu
Keguma
Smolensk
Stundstrupværket
Mazeikial
Dorogobuzh
Enstedværket
Fyns værket
Flensburg
Ignalina
Kaunas
Zarnowiec
Salaminkial
Rostock
Brunsbüttel
Brokdorf
Stade
Emden
Unterweser
Kruemmel
Zydowo
Krajnik
Ostrolela
Emsland
Kirchmoesern
Konin
Voerde
Grohnde
Kozienice
Duisburg/Walsum
Jänschwalde
Schwarze Pumpe
Belchatow
Neurath
Schkopau
Boxberg
Weisweiler
Goldenberg
Rejmik
Skawina
Grafenrheinfeld
Biblis
Ensdorf
Frankenthal
Philippsburg
Neckarwestheim
Ingolstadt
Isar/Ohu
Grundremmingen
NORDREGIO
Nordic Centre for Spatial Development
Analysis & design: P. Lindblom NR 0814

Futures for European Space 2020

Europe is here to stay? Photo: Scanpix

In 2020, 12 years from now, Europe will not look much different from how it looks today, unless unforeseen events, be it natural disasters, wars or the unpredictable actions of dictators cause major changes to occur.

The European Treaty was finally signed in 2007 and will certainly not be re-negotiated within the next decade. The Schengen Agreement has opened borders within Europe. As such, nearly all of the big decisions, which could potentially have an impact on the European space, have already been taken.

This is certainly true for Western Europe, where extensive legal and participatory planning processes often cause lengthy decision-making delays in major construction projects. Consequently, new infrastructure systems cannot be put in place within a decade. Large Trans-European transport corridors have however been agreed and now exist in a more or less fixed form on paper (see maps pp 16-17).

The network of European high-speed railways has been determined. This is similarly true for the Trans-European motorway system, and the system of international airports and container seaports.

In the countries of Central and Eastern Europe things may be slightly different. There, after the end of the cold war and accession to the European Union, the existing interregional transport infra-structure has still to be matched-up with modern levels of demand. New con-struction in these countries can usually be implemented at a faster pace. Though even there, larger investments require time for planning, financing and implementation.

Other factors influencing spatial development, such as the availability and cost of energy, water shortages or the financing conditions for private housing development, are however rather more difficult to forecast.

Finally, governance structures in Europe will not change much either. The multi-level four to six tier system of mixed top-down & bottom-up governance will continue to set the politico-administrative framework of planning and decision-making.

Consequently spatial changes in Europe up to 2020 will only occur on a micro scale. They may occur within metro-politan agglomerations, in peripheral regions, or at locations where decisions on new infrastructure will improve acces-sibility and connectivity. That is why much of the European space in 2020, only three years after the new European "Constitution" will have been ratified, will continue to look much like it does today

In this context, however, one further aspect has to be mentioned. Spatial planning is *not* a key actor in territorial development in European terms.

Spatial planners tend to overlook the fact that the current mainstream discourse on spatial planning in Europe is very much an academic exercise in "planning poetry", an exercise in using nicely worded phrases to express the objective and subjective concerns of spatial planning.

Well worded documents on the aims and processes of spatial development, decorated by persuasive narratives, success stories and 'best practice'

An example of Slowpark Europe? Benalmadena Costa del Sol, Spain. Photo: Odd Iglebaek

examples, are written by highly qualified experts in international politico-administrative committees. In the end they have little influence on the corporate worlds of finance and global corporations.

Such documents try to be neutral, non-ideological and well balanced. That is why they rarely touch on the real challenges and why they tend to forget to articulate or to express the contradictions of mainstream policies and statements.

Few read references
As a rule, neither multinational corporations, political 'think tanks' and the wider arenas of finance and economics, nor indeed the media world read and even use them as reference documents in their day-to-day decisions. They are exclusively read by a small number of academic experts or by communities of spatial planning practice.

Reference to these documents is made when institutions aim to attract financial means for regional development projects, or for funds to help develop regional development strategies. This is then why planners have to be aware that spatial planning has no real influence on the use of macro- or even meso-space in Europe.

The implementation instruments of spatial planning have always been weak. Legal frameworks may control development, where it is envisaged, promoted and politically approved. Financial instruments, with the exception of the European regional funds, are, as a rule however, not available.

Only the inner circles
What remains, is the discourse power of spatial planning, though most discourses remain confined to the inner circles of the national and international communities of spatial planners. The Territorial Agenda and the Leipzig Charter do however remain well-intentioned and ambitious pamphlets for sustainable and socially responsible spatial development in Europe.

They will nevertheless, have only a very limited impact on day-to-day spatial development policies. For many public and private investors they are merely reference documents to justify their own decisions and to pave the way for projects which have already received political clearance.

Energy geopolitics may, in the end, be more influential on territorial development than national state policies or the European Union when it comes to influencing mobility patterns and residential behaviour. The global exchange markets or the powerful global oil producers and traders, such as *Shell*, *Exxon* or *BP* have a greater influence on spatial development than spatial planners even where planners are backed by strong state governments, as in China.

Trends in European Development
The ongoing trends of European spatial development are widely known and have often been described. ESPON in particular has played a crucial role in providing comparative evidence on the manifold spatial implications of globalization and technological change for the cities and regions of Europe. Spatial development in Europe is characterized by three mega-trends, namely metropolisation, fragmentation and polarization.

Metropolisation:
In essence, all quantitative and qualitative research has confirmed that future spatial development in Europe will predominantly take place in the larger and smaller metropolitan regions. Spatial development processes within these metropolitan regions may however differ from country to country, depending on cultural, social, environmental economic and democratic traditions and values, and on a willingness to accept state guidance and intervention.

In times of globalization economic rationales will clearly dominate the use of metropolitan space. The capital cities of the 27 states of the European Union and the capital city regions of larger regions or states, such as those in Germany, France or Italy, are the hubs of the European infrastructure networks and the preferred locations for qualified and mobile labour.

A Planning scenario for Europe 2020?

Few if any have an equivalent overview to answer such a challenge as Klaus R. Kunzmann. He started out studying architecture and urban planning at the Technical University of Munich and took his Ph.D. in Planning at the Technical University of Vienna, Austria in 1971. From 1974 to 2006 he was Professor at the School of Planning, University of Dortmund, Germany. He is also Honorary Professor, University College London, Bartlett School of Planning, London, UK, the Department of City Planning and Regional Development, University of Cardiff, Wales and at Chung Hua University, Hsinchu, Taiwan. He has published extensively on the future of Europe and the European city. Klaus R. Kunzmann is a member of the scientific advisory council for European Planning Studies, International Planning Studies, Built Environment, and Planning Theory and Practice. In 1993 he was awarded an honorary membership of the RTPI and, in 1996, an honorary Ph.D. from the University of Newcastle, UK. In 1996 he received the German *'Bundesverdienst-kreuz'* for his services to the State of North Rhine-Westphalia. Since 1995 he has been a full elected member of the German *'Akademie für Raumforschung und Landesplanung'*. In 2006 he was elected as Citizen of the Ruhr/ Germany.

Klaus R. Kunzmann (Dr. techn. Dipl.Ing, Hon DLitt, Hon RTPI, Univ.-Prof. a.D)

Knowing that it is almost impossible to reverse this trend, public policy makers promote metropolisation strategies in order to strengthen the international competitiveness of national metropolitan regions. That is why flagship projects and political and cultural events, as well as property markets, tend to flourish in such locations.

Specialisation and fragmentation:
Globalization and economies of scale cause spatial specialization and spatial fragmentation at all spatial levels, at the European, as well as at the national or metropolitan levels. The economies of scale and division of labour paradigms favour the clustering of specialised production and services at selected locations while also defining and determining the respective location factors.

This results in a kind of spatial archipelago of mono-functional, globally interwoven islands. These urban or semi-urban islands are the life- and work-spaces of people, who traditionally reside and work in such regions, or have chosen to live there temporarily. Such "islands" are attractive financial centres in city cores, or backwater areas in the metropolitan fringe, post-industrial districts in new *technopoles*, or hedonistic second home regions in the gentrified metropolitan periphery.

Polarisation:
The ambitious market-driven European project gradually reduces disparities within Europe. The economic gap between the richer and the poorer states is slowly narrowing. The former Eastern European countries are gradually moving closer to the economic level of the affluent member states in Western and Northern Europe. The market-driven economy in the European Union is then an effective mechanism fostering sustainable economic growth.

However, while national disparities *between* countries are slowly diminishing, disparities *within* countries, regions and cities are increasing. In this respect the Lisbon agenda and EU cohesion 'jargon' clearly contradict each other, while the Gothenburg Agenda's ideas have, in reality, not received much political support.

The market-driven neo-liberal policies currently favoured tend rather to increase spatial disparities at the cost of less "talented" or neglected loser regions. The promised trickle-down effects, in the end may not work, and polarization at all spatial levels in Europe becomes the unintended but politically accepted consequence.

These mega-trends, in quite different modes, affect territorial development in three spatial categories, in, or rather *within* the metropolitan regions: in the metropolitan periphery, and in the European periphery in Northern, Southern or Eastern Europe.

Peripheries as losers?
Metropolitan concentration, spatial specialisation and fragmentation, and spatial polarisation are some of the consequences of globalisation and technological change.

The fierce competition already existing among city regions in Europe for investment, talent and creativity, nurtured by policy advisors, business consultants, researchers and ambitious city leaders, has produced a kind of metropolitan fever. This fever has resulted in the development of ambitious development projects, adorned architecture and impressive bridges, as well as the establishment of mega-events to attract tourists and the media.

Such metropolitan fever tends to leave some territories in Europe behind, territories which are geographically disadvantaged or do not have a considerable store of endogenous territorial capital at their disposal nor access to the political power, the freedom or the talent to make use of it. At the beginning of the 21st century, three categories of such peripheries can be distinguished, namely (1) the European periphery; (2) the metropolitan periphery; and (3) the inner metropolitan periphery (see figure 1-3).

The European periphery
comprises the territories in the Northern, Eastern and Southern fringes of Europe. Geographical periphery, however, is a question of perspective. The geographical location and the cultural background of the observer, alter the perception of spatial peripheries in Europe. Sardinia, seen from Spitsbergen, is clearly a peripheral region, though this may not be so when seen from Greece. Similarly, Northern Sweden or Finland, seen from Malta, are peripheral regions, though this undoubtedly changes if these regions are viewed from Norway.

Fig.1 The European periphery

However, what remains is that peripheral territories in Europe are less accessible and have lower population densities with all the related social implications for the people still living and working in them. And often they are additionally disadvantaged by extreme climatic conditions and the existence of sensitive eco-systems.

The metropolitan periphery
is made up of those territories, which, as a rule, are more than 100 kilometres away from the closest metropolitan core. In periods of globalization, metropolitan peripheries are disadvantaged by means of their limited accessibility to the

Fig.2 The metropolitan periphery

metropolitan core and by size of their labour market, as well as in their access to all of the cultural and social facilities, that only a metropolis can provide.

Unless medium-sized cities with significant territorial capital and a strong export-oriented regional economy provide such services, the more active and younger segment of the regional population tends to leave such regions behind, heading for the more attractive metropolitan cores. By more effectively linking these regions to the metropolitan core, the core and a few locations along the European transport corridors will benefit.

The inner-metropolitan periphery includes peripheries found in all European metropolitan regions, most prominently in the *banlieue* of Paris, though also in and around Greater London, in Rome, Madrid and in Berlin.

This inner-metropolitan periphery is characterized by a high degree of unemployment and above average crime rates, by a low quality of educational and social infrastructure, low levels of personal security and a significantly lower environmental and aesthetic neighbourhood quality.

Fig.3 The inner-metropolitan periphery

The inner-metropolitan periphery is the "no go" area for the winners of globalization, and the refuge of the losers. It is in the inner-metropolitan periphery that formal and illegal migrants from ethnic minorities find their relative freedom, as it is in these places that they can afford to live, and are able to set up their (second) home territories.

Obviously, spatial or territorial planning cannot solve all of the spatial development problems in the European peripheries. Each requires rather different and integrated policy actions at all tiers of planning and decision-making. The information power of space-focussed planning and communication competence can however trigger targeted discourses on how to cope with such challenges.

Possible European Futures:
Many ways exist to describe the possible futures of the European space within the framework of mega-trends, as is briefly sketched out above. While spatial development on the European macro-space will not alter the geographical distribution of economically successful regions in Europe, infrastructural and property development decisions in the decade to come may have some impact on the meso-level, depending on geopolitical developments, energy-related changes in mobility, governance structures, and consumer values. The following five scenarios will sketch five alternative corridors of spatial development in Europe.

Business as usual:
Future spatial development in Europe will continue to reflect the dynamics of economic development, the power of market forces and non-interventionist neo-liberal policies. In consequence, metropolitan regions in Western Europe will continue to grow, despite the rhetorical efforts towards decentralization at the political level. London will further expand into South East England from Coventry to Brighton. This is similarly true for Paris, or rather the agglomeration of *Ile-de France*, where, despite all national efforts to balance spatial development in the country by promoting other metropolitan regions and *"pays"*, a recent effort to enhance endogenous development across the nation.

Hyper-urbanization in most European metropolitan regions will further increase commuting times. And when car-commuting times exceed acceptable and affordable thresholds, new public transport lines will accommodate the expansion and foster even further extension. All other European countries will similarly experience the growth of their capital regions at the cost of the more peripheral territories.

The speed of urban expansion will generally depend on demographic trends and value-driven housing policies. This is as valid for Germany, Italy, Spain, Portugal, and Greece, as it is for the Nordic Countries, the Baltic States and for all the countries in Central, Eastern and South-eastern Europe. Despite ambitious political agendas of spatial decentralization and territorial cohesion, there is little hope that a more balanced spatial development can really be achieved.

Fig.4 Business and rhetoric as usual.

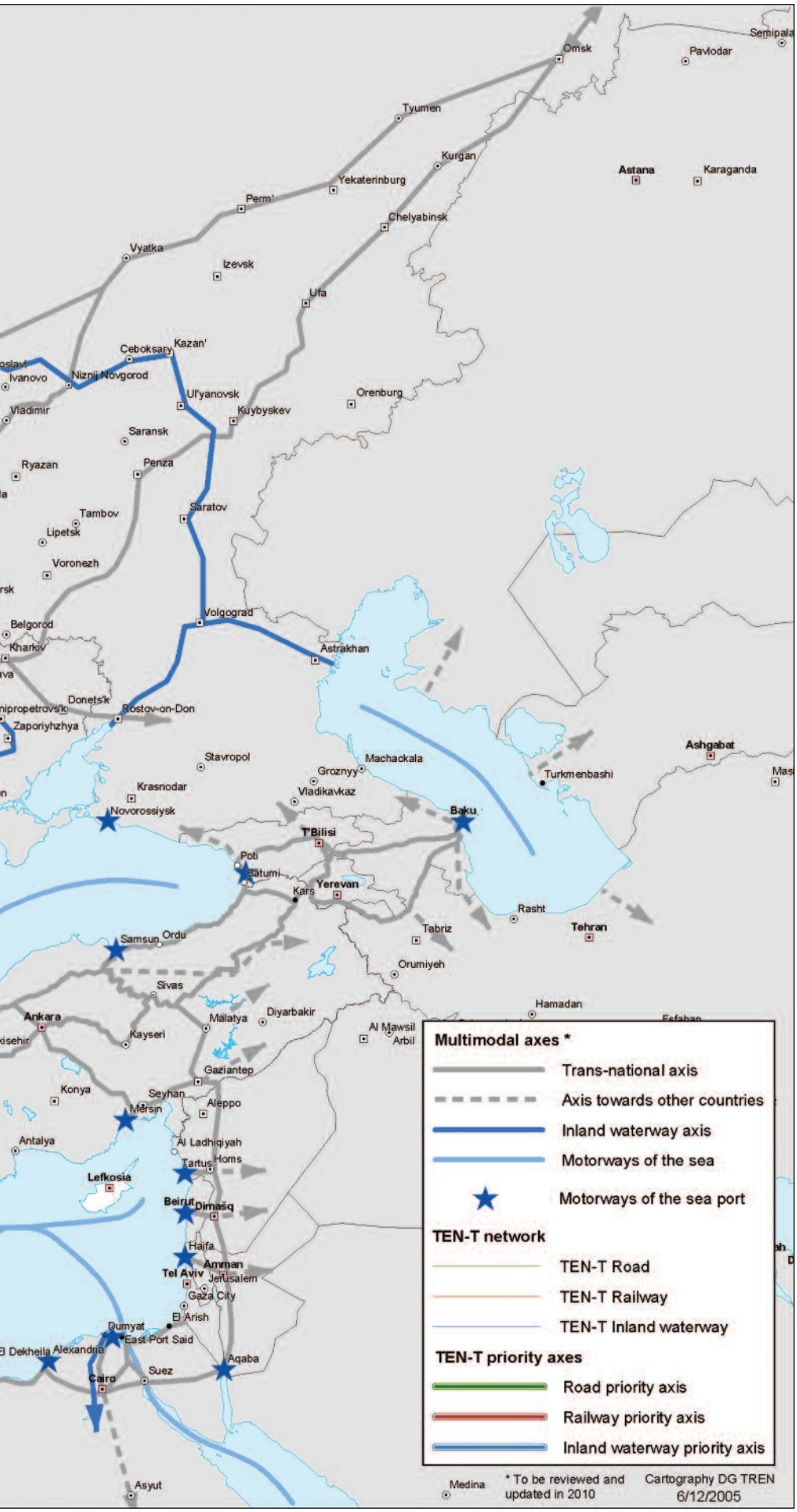
Migration flows from Africa will not come to a standstill. Areas, where informal labour is sought or where cultural linkages exist, will be the preferred location-targets of these migrants, adding new social challenges to the in-trays of the respective local and regional governments. Intra-regional disparities within metropolitan regions will thus continue to grow.

In order to remain globally competitive, the Lisbon Agenda will justify and demand more support than the environmentally-focused Gothenburg Agenda. European and national subsidies will support competitive regional economies, which, as a rule, are located in the metropolitan regions.

To speed territorial cohesion and to strengthen the competitiveness of these regions, Trans-European transport corridors and the extension of international airports will receive high political priority. High-speed trains will

Continued at p 18 ▶▶


Galileo satellite communications
Major trans-National axes and Motorways of the Sea ports
Murmansk
Narvik
Arkangel'sk
Vologda
Lahti
Vainikkala
Vaalimaa
Saint Petersburg
Kerava
Turku
Helsinki
Tallinn
Oslo
Charlottenberg
Stockholm
Töcksfors
Svinesund
Skottan
Göteborg
Tver
Moscow
Ventspils
Riga
Kaluga
Vitsyebsk
Smolensk
Klaipeda
Kaunas
Vilnius
Kaliningrad
Minsk
Mahilyow
Klintsy
Orel
Copenhagen
Malmö
Gdansk
Hrodna
Homyel'
Rødby
Glasgow
Edinburgh
Belfast
Larne
Dublin
Holyhead
Kingston upon Hull
Liverpool
Crewe
Cork
Birmingham
Nuneaton
Hamburg
Bremen
Hannover
Berlin
Warsaw
Brest
Chernihiv
Kiev
Zhytomyra
Cherkasy
Amsterdam
Felixstowe
London
Rotterdam
Duisburg
Dover
Calais
Brussels
Köln
Leipzig
Dresden
Katowice
L'viv
Vinnytsya
Bar
Kirovohrad
Frankfurt am Main
Prague
Luxembourg
Nürnberg
Brno
Zilina
Chernivtsi
Paris
Strasbourg
Stuttgart
Bratislava
Vienna
Linz
Chisinau
Odessa
München
Salzburg
Budapest
Tours
Mulhouse/Mülheim
Zürich
Bern
Innsbruck
Brennero
Fortezza
Maribor
Nadlac
Curtici
Arad
Sibiu
Brasov
Pecs
Geneva
Lyon
Domodossola
Trento
Ljubljana
Zagreb
Bucharest
Constanta
Milano
Verona
Novi Sad
Belgrade
Bordeaux
Rijeka
Tenno
Padova
Koper
Calafat
Vidin
Varna
La Coruña
Genova
Bologna
Sarajevo
Bourgas
Bilbao
Dax
Irun/Hendaye
Vitoria
Nimes
Firenze
Marseille
Sofia
Pristina
Burgos
Porto
Valladolid
Podgorica
Ormenio
Istanbul
Kocaeli
Skopje
Aveiro
Salamanca
Zaragoza
Figueras
Kulata
Alexandroupolis
Bursa
Lérida
Barcelona
Rome
Tirana
Promachonas
Madrid
Bari
Durres
Thessaloniki
Lisbon
Setúbal
Badajoz
Brindisi
Vlore
Kozani
Napoli
Kalambaka
Ioannina
Volos
Sines
Palma de Mallorca
Igoumenitsa
Izmir
Antirrio
Athens
Faro
Sevilla
Patra
Bobadilla
Palermo
Messina
Kalamata
Tanger
Algeciras
Al Jaza'ir
Djen Djen
Annaba
Tunis/Rades
Constantine
Oran
Melilla
Enfidha
Valletta
Sousse
Casablanca
Rabat
Fes
Mohammedia
Oujda
Sfax
Marrakech
Tripoli
Misratah
Benghazi
Al Salum
Agadir
0
250
500
1.000
1.500 km



This is TEN-T

- 96 000 km of roads
- 106 000 km of railways of which 32 000 will be high speed
- 13 800 km of inland waterways
- 411 airports
- 400 international ports
- 3 000 domestic airports
- traffic management system
- Total cost estimated at 250 billion euros

The Trans European Transport Network (TEN-T) was established in the aftermath of the Maastricht-agreement in the early 1990s. TEN-T focused on the EU's internal market and the so-called four freedoms: Free movement of goods, persons, services and capital.

Developing the physical infrastructure both between and within the member-states was seen as an important factor in increasing growth and appreciation within the European Union. Therefore TEN-T is definitively regarded as part of the Lisbon-strategy to improve competitiveness and employment.

In 1994 there were 14 TEN-T projects. Ten years later the list was expanded to a total of 30. The list was drawn up in accordance with the input of the member-states. Included are the key corridors of transport in the Union, dealing with more than half of all transport volumes (passengers + goods) on land. New additions included Motorways of the Sea, Inland waterway projects and the Galileo system for satellite navigation.

It is expected that the transport of goods within the EU will grow by more than two-thirds during the period 2000-2020. TEN-T will be a central tool in facilitating this expansion. An overall goal remains the transfer of transport from the roads to rail and sea.

In 2005 it was concluded that the progress of TEN-T was too slow. To secure improved progress the EU has appointed special European Coordinators. As of September last year seven different projects had been assigned such special coordinators.

By Odd Iglebaek

inter-connect the metropolitan regions in Europe and thus further support the ongoing metropolitan concentration processes.

Energy policies will certainly aim to increase the share of renewable energy resources. In this context, biomass production will increase, and this, in turn, will have substantial implications for agricultural and rural development policies, and on the natural and cultural landscapes of the diverse regions of Europe.

The Mediterranean Pact:
In the South, the European Union borders North Africa and the Middle East. To better integrate North Africa, the Middle East and Southern Europe, (and possibly Turkey). a Mediterranean Pact has long been proposed by the French Government.

Fig.5 The Mediterranean Pact

The idea of the French fathers of this idea, is that such a pact, - not surprisingly, should be under the regional leadership of France - , and together with Italy, Spain, Portugal, Cyprus and Malta, all of the countries facing the Mediterranean coast from Mauritania to Israel, and including Egypt, the Palestinian Authority, Lebanon and Israel, would form a powerful economic community in the transition zone between Africa, the Middle East and Europe.

The circles, promoting this pact believe that such a geopolitical initiative could indeed address a number of unsolved European issues, and deal with some of the economic and political challenges, faced along the Mediterranean Sea (e.g. structural unemployment, illegal migration, attempts by single countries to apply for EU- Membership).

Such a pact could, at least in the long run, establish a large and strong economic belt across Northern Africa, with global economic production zones, using labour from Africa, which otherwise, as experience shows, attempts to reach cities and regions in the established European Community.

For cultural reasons African labour would prefer to stay in the region, once economic prospects look more favourable at home. Migration to Western Europe would diminish. One could even expect that qualified labour from ethnic communities in Western and Central Europe may consider relocating to the new global production zones in Northern Africa, where, as some observers suggest that Christian and Islamic values could better co-exist, although the experience in the Sudan is not very encouraging in this respect.

Whether the still controversial issue of Turkey becoming a member of the European Union could be elegantly evaded in such a pact, remains doubtful, even if the country will then be entrusted with a leading role in such a venture.

With the establishment of such a Pact, Trans-European Transport corridors in the South would receive higher priority and new Mediterranean Sea corridors would become a new option for sustainable long haul transport. The sustainability dimensions of spatial development would certainly receive only lukewarm political support, given the traditional socio-political *milieus* of clientilism.

In such a scenario, the economic gravity of Europe would certainly shift to the South. Following the rationale of spatial development in market-led economic development, Metropolitan regions in Southern France, Spain, Portugal and Italy would find particular advantage in the Pact. Linked to the metropolitan regions, even port cities and networks of small and medium-sized cities in the region could strengthen their positions and gain from this geopolitical initiative.

The Eastern European Pact:
Similar to the example of the Mediterranean Pact, the countries of Central Europe may consider initiating another geopolitical pact with the countries of Eastern and South-eastern Europe, such as The Ukraine, Belarus and Moldova and with Serbia, Macedonia, Albania and Montenegro. This pact could even include the European territory of Russia. Even though current agreements with the EU may discourage these countries, from considering such a geopolitical initiative.

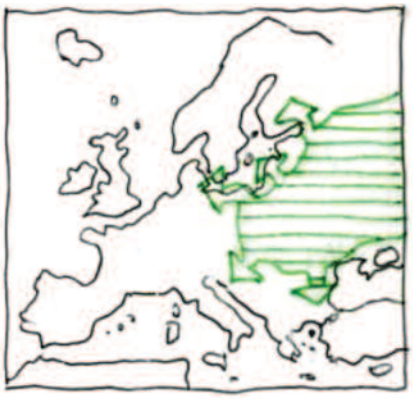


Fig.6 The Estern European Pact

The EU already distinguishes between these two groups of countries, the former are recipients of the EU's 'Neighbourhood Policy' the latter already have what is called 'an entry perspective' to the EU – they are treated distinctly and the Balkan countries would not want to lose this 'preferential treatment' basis with a strong economic focus which would open the door to the establishment of further industrial zones in Eastern Europe, which may accommodate industrial production from Western Europe, searching for locations with cheaper labour costs and better accessibility to new consumers. In this scenario, industrial mass production would shift gradually to Eastern Europe.

For European corporations and businesses the countries of such an Eastern European Community would certainly be a serious alternative to China and Southeast Asia. Driven by such a pact, Eastern European countries would catch-up faster with Western Europe. Among the many implications of such a shift to Eastern Europe, East-West migration flows to Western Europe, particularly to Britain, would decline.

The Eastern European pact would certainly accelerate the extension of the Trans-European transport corridors, to and across, Eastern Europe and Russia. In

such a scenario Berlin, too, could resume its traditional role as the cultural centre of East-West exchange.

The winners of accelerated economic growth in Eastern Europe would be Germany, Poland, the Czech Republic and Hungary. Consequently, the metropolitan regions in these countries, already benefiting from accession to the European Union, would experience even faster economic growth. From the resulting economic effects, smaller and medium-sized urban settlements in the East could perhaps envisage a brighter future.

Given the immense availability of space, the Eastern European Pact could also boost modern agricultural production in Eastern Europe, and strengthen the role of the region as the 'granary of Europe'.

China's European March.
By the turn of the 21st century China had become an economic world power. Favoured by globalisation processes, information and communications changes, and the logistics revolution, China's economic growth has increasingly come to impact on economic development elsewhere in the world,

Fig.7 China´s yellow shadow

particularly in "old" Europe.
The economic repercussions can already be felt in many locations. Increasingly, Chinese production complexes are thriving in Italy and France, in Spain and in Romania, eventually this will be so in Northern Africa, too. European port cities (Hamburg, Rotterdam, Antwerp and Naples) are handling more and more containers arriving from China, and more and more containers with sophisticated European products are supplying Chinese industries and consumers with advanced technology and luxury consumer goods.

European financial centres (London, Frankfurt, and Paris etc) are aware of the growing importance of China's role in the global financial system. European engineers, architects and planners are much involved in ambitious Chinese projects. French luxury brands sell well in the Chinese market, and French architects are among the winners of this internal European competition for contracts from influential city mayors, who wish to gain eternal fame from fancy urban monuments.

Mayors forge twin-city arrangements with Chinese cities to prepare the ground for business co-operation. And local economic development agencies make much effort to attract Chinese investment to the continent, to participate in the economic success story of the Asian giant. Chinese modern art is experiencing impressive success on the global market and is flourishing in galleries around the world.

Chinese students have discovered Europe as a place to learn, and Chinese tourists, touring around Europe in five, seven or even ten days, have already replaced Japanese travellers as the leading Asian tourist nation. In Europe sentiments waver between cheering the new market opportunities and painting the Chinese peril on the wall, as has occurred more than once during the last century. Unless local conflicts heat up local politics, as in Milan, Naples or in Paris, local governments tend however to view the Chinese challenge with great serenity.

Though Chinese challenges in respect of city development in Europe may still be negligible it would make sense to be aware of the likely urban implications of China's rise. At present it is mainly low cost Chinese production, in China and increasingly in Chinese enclaves in Europe, which is alarming labour organisations.

Will all these European industries, which are flourishing due to the insatiable Chinese market, continue to do so, or rather will high quality Chinese products challenge them? Will the European automobile industry continue to benefit from exploding mobility across China, or rather, will China export cheaper eco-cars to Europe? Will technological advancement and design quality remain the most essential assets of European industry? Will Chinese investments in European financial institutions make the European banking system more vulnerable? Will the insatiable Chinese hunger for gasoline constrain the energy supply for European consumers and reduce their mobility? Will Chinese higher education, research and development make the country fully competitive with Europe within less than a generation?

These and other developments in China linked to such questions may have implications for the cities of Europe, whether they host the automobile industry, or whether they still benefit from local fashion, design or environmental technology clusters. The consequences for employment and the quality of life, and, in the end, for the traditional European model of 'tamed', socially responsible capitalism will also be experienced.

Slowpark Europe
The global division of labour and technological changes have led to increasing competition among cities and regions in Europe. Local or regional economies relying heavily on the export of products and services abroad will not remain on the competitive edge unless they export parts of their production chains to Asia, or to Eastern Europe, where labour costs are cheaper. Increasing productivity and investing in high-end technologies at home, or shifting even more production to low-cost areas are the only alternatives here.

Fig.8 Slowpark Europe

Northern peripheries, here from Nikel in North-West Russia. Photo: Magne Kveseth

Both options would have considerable implications for regional employment. Under such circumstances, it may be worthwhile exploring how the dependence of local and regional economies on global markets could be gradually reduced, and how the paradigms of the division of labour and economies of scale could be reviewed.

Following the principles of sustainability, as expressed in the Gothenburg Charter, strategic regional development could favour regional economies and regional economic circuits. Based on the rationale of endogenous regional development urban-rural economies could be re-integrated to sustain regional employment. The trend towards healthy food may help to promote such strategies.

Less car mobility

The principles and criteria of the holistic 'slow city movement', originating from Italy's 'slow food' development, could be a good starting point here to reformulate local development strategies. The key to such development could be the gradual reduction of unnecessary individual car mobility, the promotion of more intelligent logistic flows and the reduced flow of goods within metropolitan regions. These may in any case be an inevitable consequence of increasing energy costs.

Non-growth

Such deliberations are particularly valid for the regions beyond the large urban agglomerations, the metropolitan and the European peripheries, as defined above. Policies designed to produce alternatives to the model of economic growth and competition may in the end lead to a non-growth continent, where, with the exception of a few large metropolitan areas, the regions of European history and tradition, their attractive landscapes, their cultural diversity and quality of life, their cultural life and creativity, may become a kind of a healthy *"Slowpark Europe"*.

Prodution to Asia

While Asia, with its unlimited human resources, is taking over most of the globe's industrial production, particularly mass production, much of Europe's territory is becoming a kind of a large theme park for history and culture, filled with appealing small and medium-sized cities, 'gown towns' providing excellent post-graduate and post-doctoral education in inspiring environments, with attractive landscapes where food and wine is being produced and consumed.

Europe here would become a continent of cultural and creative industries and related educational institutions, a preferred target for cultural tourism and learning holidays. Servicing these target groups will become the main sector of employment.

Accept lower income

Most inhabitants of *Slowpark Europe*, particularly the lower and middle classes, may have to accept slightly lower income levels and lower pensions. The consequence of this however will be a reduction in consumer power, which in turn will reduce holiday expenditure and see less investment being made in property, cars and luxury goods. In Slowpark Europe, forests and nature parks will expand into areas where population decline has contributed much to the erosion of regional economies and public infrastructure.

These five scenarios reflect a subjective view of possible development trends in Europe. None will become the reality, though single elements may have to be faced at the various tiers of planning and decision-making.

Spatial Planning and Research

What then are the conclusions to be drawn from these spatial planning and research scenarios for Europe? Despite a plethora of academic publications on urban and regional development our knowledge of the various factors influencing spatial development in Europe remains limited.

Consequently, in order to be better equipped for the spatial challenges ahead, still more research will have to be done, not so much on the pet-themes of participation, governance or cluster development, but rather more on the complex energy issue of mobility and logistic flows, on the implications of geopolitical developments on space, or the influential role of value systems on locational choice and on bridging sector policies with spatial policies. Areas worthy of further rigorous exploration include:

The energy-environment-mobility complex and its implications for macro-, meso- and micro space, including the role that changing consumer values play in this context.

The spatial implications of geopolitical developments in Eastern Europe, Asia, the Middle East and the Mediterranean for the cities and regions of Europe.

The spatial consequences and potentials of new ITC technologies, particularly for the delivery of public and private services to people and small and medium-size enterprises in the metropolitan and European peripheries.

The implications of global property investment strategies on urban development.

The methodology and implementation of integrated strategies for coherent polycentric inner-metropolitan development. Here, more 'governance' and less 'evidence-based' research seems to be necessary, while more insight is needed into how to deal with the cultural and economic role of the various groups of migrants and ethnic communities that now live and work in most European cities.

Planners should remain humble and patient, as well as ambitious and committed. On the one hand they should acknowledge that their power to guide spatial development and to defend green-field consumption against infrastructural development and property speculation is quite limited. While on the other, they should not surrender to neo-liberal attitudes and short-term incrementalism.

It is still the task of planners to develop longer-term visions and to seek spatial justice. Without allies in the "real" world however their visions and concerns will not be heard. Thus they must seek, wherever possible, to construct strategic alliances with those who have more influence in society.

By Klaus R. Kunzmann, Professor
klaus.kunzmann@udo.edu

Klaus R. Kunzmann speaking at *Nordregio*. Photo: Odd Iglebaek

- Slowly towards slowpark

The article on the previous pages is based on a presentation given on the occasion of the 10th anniversary of *Nordregio* in Stockholm on 12 December 2007. We are happy to share this with our readers. In relation to the article some questions have arisen. We put them to professor Kunzmann:

- You argue that energy geopolitics might have more influence on territorial developments than national state policies. Can you exemplify this?

– Take the state of Brandenburg in Germany. The situation is now that most fields are not locally owned any longer, but rather they are properties of large enterprises. Thus decisions over what should be cultivated, and in the final instance what the landscape should look like, rest in the hands of very few people. We can easily foresee great changes where it is no longer food but bio-fuels which are grown, and all decided far away from the influence of local inhabitants.

– Another point is the EU-jargon of cohesion. Here you say that there is a clear contradiction between the Lisbon and the Gothenburg agendas?

– My point is that Lisbon emphasises the competitive and centralisation forces of Europe while Gothenburg underlines sustainability and decentralisation. In real politics, however, the later has very little influence. It is like the decoration on a cake, it might make people think that it is nice and tasty, but in reality it does not say anything about what is under the surface.

– The trickle-down effects may not work, you argue?

– All European countries have gradually become richer and differences are also diminishing between, for example, Rumania and Bulgaria on one hand and The Netherlands and Sweden on the other. At the same the differences between the richest and the poorest parts of the populations in any country are growing. Therefore, seen from such a perspective the tendencies are not 'trickle-down', it might in fact, be more appropriate to talk about 'trickle-up'.

– An important part of your analysis is the phenomena of the periphery. You find such situations inside cities as well as in their vicinities and far away into the woods or up in the mountains. Having just visited parts of the Middle-East I see clear similarities to Israel-Palestine, the difference being that here the strongest part of the population have also built high walls to keep the others out?

– I guess you have a point there, if you travel 30 minutes from the centre of Paris to the suburbs you find the same stress and poverty as you find in the Palestinian refugee camps just a few kilometres from Jerusalem. And of course, also in Madrid, Rome, Naples and London and other places you also find situations like these. One common feature is also that of access to transport which remains an important tool used to control people who have to live in these miserable places.

– Finally, of the five scenarios you outline for the future of Europe, which one do you think is the most likely?

– Well, I guess it is a combination of business and usual and what I call 'Slowpark' Europe.

By Odd Iglebaek

Copenhagen not yet the post-carbon City. Photo: Ole Damsgaard

Nordic Urban Research in a Global Context

Future global challenges are closely linked to the urbanisation process and to the development of the urban regions of the world. The responses to these global challenges are mainly to be found in the management and the planning of cities at the regional and local level.

In this respect urban research plays an important role as an interpreter of the impacts of globalisation in accordance with various regional and local settings. It can often therefore help to open the way for innovative and proactive future strategies.

In a study carried out by *Nordregio* and *NIBR*[1] in 2007 the objective was to provide a 'state of the art' overview of Nordic urban research and to pinpoint the strengths and research strongholds of Nordic institutions seen from a policy point of view and from an international perspective. Furthermore it was the aim also to come up with proposals for future common Nordic research themes.

The Nordic urban research infrastructure consists of three main elements which are more or less intertwined: the research institutions, the research programmes, and the formal and informal networks between research institutions and researchers at the national, Nordic and international levels.

Urban research in the various Nordic countries presents many similarities, essentially due to the geography, history and welfare systems they share, but also many differences, linked with the specificity of each national context. These differences can be related both to the varying nature of each individual national research infrastructure and to the distinct national research policies utilised.

In a European context, the Nordic countries are, to some extent, unique as they have low population densities and large and sparsely populated areas. These unique Nordic preconditions provide certain challenges to the Nordic societal structure but at the same time these rather special Nordic features provide a common ground for urban research collaboration.

The national urban research programmes, conducted in each of the Nordic countries in the period 2000 -2007, reflect the diversity of *Norden*. The programmes are all rather national in character, not only in the selection of themes, but also in the compositions of boards and projects. Nevertheless, extensive contact and cooperation exists between Nordic researchers on urban issues. However this cooperation remains to a large extent formalized in research projects, and predominantly exists only as a part of wider international networks.

National urban research programmes also tend to encourage urban researchers and institutions to cooperate in a transversal research field, i.e. by bringing together stakeholders from multiple sectoral interests and from multiple professional disciplines.

The urban research produced in the Nordic countries is undertaken by many institutions. The competence of these institutes lies, predominantly, in their capacity to perform cross-sectoral and pluri-disciplinary studies on urban issues, promoting urban research as a transversal rather than as a sectoral issue.

A comparative study of published articles shows that Nordic urban research is of a good standard and remains highly visible on the international stage. However, each of the Nordic countries produces only a small proportion of the total published urban research. This is perhaps to be expected given the small size, in relative terms, of the Nordic countries.

A new Nordic research programme on urban development issues would therefore enable us to give greater coherence to the nationally fragmented

Nordic urban research landscape. It could also integrate the various national research infrastructures and thus bring together a greater 'critical mass' for more targeted and better research.

Seen from an institutional point of view four main research fields with an acknowledged high-level of Nordic competence can be identified, namely:

- The role of cities in national/regional development and global competition
- The Social dimension of urban development
- The Urban environment and the environmental impacts of cities
- Urban governance and planning

Three overall research themes were prioritised in the study as the most important areas of future urban research in the Nordic countries. They can be labelled as follows:

- The diversity of cities – creativity and segregation
- The role and functions of cities in regional and (trans)national development
- The post-carbon city – mitigation and adaptation to climate change

In addition to these future research themes, a number of cross-cutting dimensions were also identified. These can be summarized in the following manner:

- Sustainable development
- The Nordic Welfare Regime in transition
- Globalisation and its impact on Nordic cities and urban governance.

In the context of the future research themes proposed by Klaus Kunzmann[2] a high degree of congruence can be identified between the Nordic and the broader European proposals. Most striking in this regard is the fact that both sets of proposals underline the importance of the multi-disciplinary, multi-sector and multi-scale approaches. The 'energy-environ-ment-mobility complex'/'the post carbon city' is but one example of such an approach.

What perhaps distinguishes the two sets of proposals is the weight placed on governance. Here the Nordic proposal underlines the importance of governance as a cross-cutting and ongoing research theme. Kunzmann, for his part, signals that he is tired of 'the pet-themes of participation, governance and cluster development'. Instead he would like to place more emphasis now on the implications of geopolitical developments and on the impacts of different locational choices on space.

Of course Kunzmann has a point here, decisions taken outside Europe by e.g. global companies and political developments in the Middle East will of course play a crucial role in the future of Urban Europe.

By Ole Damsgaard, Director
ole.damsgaard@nordregio.se

1 Urban development, Nordic strengths and challenges under the heading of a new global agenda. Nordregio and NIBR commissioned by NordForsk 2007
2 See pp 12 - 21 in this issue of Journal of Nordregio

City cntre landscapes changes rapidly. Here Oslo Central Station. Photo: Odd Iglebaek

New projects at Nordregio

Another climate: gendered structures of climate change response in selected Swedish municipalities
Are there changes in the gendered structures of sustainable development that affect the concrete climate change responses of Swedish municipalities? Why have some Swedish municipalities responded actively to the issue of climate change, when the vast majority of municipalities in Sweden have not?

Knowing more about the processes and motivations in Swedish cases of active response is both acutely interesting and a key aim of this interdisciplinary proposal.

Another central question is: What explains the shift of climate change to the centre of sustainable development? Is it a turning point? If so, it is important to verify and understand how and why it is occurring and who is involved, so that its implications can feed back into professional planning, policy and decision-making circles.

Sustainability work in Sweden has engaged a high proportion of women, which may be significant in answering both questions.

Duration: 2008 - 2012
Client: Vetenskapsrådet/Formas
Lead Partner: Nordregio
Information: richard.langlais@nordregio.se

Regional Dependency Burden in the Nordic Countries (ReDBurN)
The main problem for the future welfare and dependency burden is not tied to demography, but to inflexible institutions at the labour-market. Even without demographic ageing in the near future the problems at the labour market would have created severe problems.

This project has been initiated to analyse some of the findings of an earlier project (Rauhut *et al.* [2008] The Demographic Challenges to the Nordic Countries. Nordregio WP2008:1).

Duration: April – August 2008
Client: Nordregio
Information: daniel.rauhut@nordregio.se

Update of comparative demographic indicators for cities and regions in the BSR
This update is an extra-study in the framework of the East West Window-project and will cover comparative demographic indicators for cities and regions in the Baltic Sea Region with more than 10,000 inhabitants during the period 1995-2005/2006. Indicators included are total population (by gender), natural change and net-migration.

Duration: 2008
Client: Näringsdepartementet
Information:peter.schmitt@nordregio.se

Towards an understanding of city-regions

Since the 1980s a growing body of literature has argued that globalisation entails a spatial reorganisation the urban and regional development processes. As such, cities, or city-regions, notwithstanding their size, and depending on their specific functions, are increasingly globalising, as they take part ,to varying extents, in transnational flows of capital, commodities, knowledge, labour, tourists, cultural symbols etc.

Despite the flattening potential of information and communiction technologies (ICT) and decreasing transport costs, the world, however, remains a 'spiky' place as the aformentioned flows are not initiated by, or directed to, cities in the same way, such that it is only some cities, or city-regions respectively, which can be charcterised as 'outstanding' in this respect. In other words, many differences exist in how deeply cities are embedded in these transnational flows. Indeed cities form 'urban systems' in relation to their specific labour divisions and historical path-depedencies.

These systems have been re-configurated over time, a process precipitated by geo-economic and geo-political changes as well as by the emergence of urban specialisation, such that new relations have emerged, while others have disappeared while new labour divisions and patterns of territorial competition, and hierarchies have arisen.

Such processes, of course, have not affected all cities or city-regions in the same way, one can thus observe a kind of ongoing transformation and differentiation in the functional urban landscape. This is particularly so as regards international competition in respect of first-class technological, institutional, social and cultural infrastructures, as well as to attract creative human resources and firms, all of which have helped to change our perception of city-regions: from sub-national, bounded areas to nodes inserted into global networks and finally to 'regional motors of the global economy'.

We need to realise that, from a territorial point of view, the international integration of *Norden* into global networks is mainly secured through the maintenance and development of critical urban functions (such as gateway, decision, control, service and innovative functions). All of which are to be found primarily in metropolitan areas such as Helsinki, Stockholm, Oslo and Copenhagen.

Obviously, however, the sheer size (e.g. in terms of population, labour force or Gross Domestic Product) of those city-regions does not necessarily matter. Especially in *Norden*, but also in many other parts in Europe, small and medium-sized cities and towns (SMESTOs), or to be more precise, the businesses which are located in them, have been quite successful in recent years despite ongoing globalisation.

Apparently they have developed a strong capacity for adaptation to external economic changes, as they have managed to overcome their relative weakness in respect of first-class technological, institutional, social and cultural infrastructures as well as, partly in view of their range, the variety and specialism of their urban services.

At the macro-regional level, one can even say that the good economic performance of *Norden* as a whole shows that geographical peripherality does not imply economic laggardness, despite the bipolar Pentagon-periphery vision, which continues to dominate corresponding discourses on European territorial development.

Wider spatial functional areas

Since the 1980s, a re-composition of city-regions' physical urban form has been increasingly debated among academics and urban and regional planners. The monocentric-like model in which central city locations are considered as the sole functional focal point for all types of social and economic activities is no longer seen as the norm in the context of evolving spatial patterns across urban Europe, North America and increasingly now in Asia.

Central city locations are increasingly becoming components of a wider spatial functional entity which comprises headquarters complexes, back offices, airport cities, logistics management, different kinds of housing areas and entertainment facilities. In that sense cities seem to integrate more and more with their hinterlands to form multi-centred, functional city-regions.

Their robustness does not necessarily stem from morphological overlaps, but rather from the economic complementarities between a number of neighborhood cities and towns, from which they draw enormous economic strength. Thus the role of cities is embedded in a wider, i.e. polycentric context of the organisation of socio-economic activities.

Still scratching the surface!

Apart from these rather theoretical reflections, one has to point out that our current empirical and thus evidence-based knowledge is still grounded in

some rather insufficiantly harmonised databases and in individual qualitative case-studies.

Based on a recent study undertaken by *Nordregio* and *NIBR* on Nordic urban research practices and infrastructure, one can indeed argue that Nordic urban research seems to offer promising precondictions to fully explore and understand those issues mentioned above, but one has to point out that our current knowledge of cities and their specific functional profiles remains rather sparse. This is particularly the case, moreover, in respect of those urban functions which are crucial to international competitiveness.

The following issues demand greater attention in the context of future Nordic urban research related to those specific issues as sketched above. Besides making use of inputs and comparisons with other countries and regions with similar challenges and basic conditions, they might also imply some specific 'added-value' in respect of intra-Nordic comparisons.

The connectivity of cities
In principle, a better understanding of the uneven and multifaceted nature of Nordic urban geography is required. Initially, there is a need to construct better databases, which should specifically include relational data to measure the connectivity and links within urban systems at different spatial scales (global, European, Nordic, national and regional) in order to create a better base of knowledge on the ongoing structural changes in the Nordic urban landscape.

It is crucial here to get to know more about the networks and relations of (knowledge-based) firms and other kinds of organisations as we do not yet have a clear picture, for instance, of how the Stockholm region is actually connected through its firms (i.e. through their business activities) with other Swedish, Nordic or European city-regions, and beyond.

This would enable us to develop policy-relevant knowledge on the connectivity, position and function of Nordic cities at different spatial levels: What role does the transport infrastructure play in this respect? What kinds of potentials can be found within Nordic metropolitan regions to establish strategic networks in order to form the 'critical mass' necessary to become an international competitor of global importance? How can this potential be mobilised? As such then it is, of course, also crucial to generate more knowledge on the processes behind such structural changes. This calls for a deeper institutional understanding of the scope, relations and impact of the current regulative systems (i.e. governance and planning).

Functional networking
From a functional networking perspective, Nordic urban research should focus more on how to foster the global integration of the Nordic urban systems and on how to improve their competitive position. As such, it is crucial to identify specific functional niches and to develop them as competitive assets for European/global markets.

Strategic urban networks might act as a key concept here to complement different urban profiles in a more synergistic manner and thus contribute more effectively to balanced spatial development within the Nordic Countries. The potential for such a functional understanding of the concept of polycentricity has to be explored further.

SMESTOs the backbone
In view of sustaining socio-economic cohesion and optimising the provision of amenities across the Nordic countries, the role of small and medium-sized cities and towns, SMESTOs, is obviously crucial in minimising uneven territorial development. Therefore a much more thorough understanding of their structural differences, their specific individual development paths and thus of their challenges and vulnerabilities is needed in order to inform Nordic policy-makers of the strategic assets and potentials to be activated.

Due to the existence of many obvious similarities when comparing the national urban systems of the Nordic countries in general and the geographical setting of SMESTOs in particular, fruitful conclusions could be derived from further comparative analysis.

Enhancing institutional capacity
With regard to the potential for developing strategic Nordic urban networks, the question of how these cities can relate to each other in a (more) synergistic manner has to be analysed. Synergies are generated through the development of organising capacities and the related cooperative spirit and through a search for complementarities, i.e. by the activation of distinct economic profiles of cities, urban facilities or business *milieus* through strategic co-operation.

Therefore, institutional capacities have to be explored in order to formulate recommendations for tailor-made modes of governance and institutional designs which will help to make better use of such synergies such that a loose bunch or cluster of cities becomes more than the sum of its parts. As such, a better understanding is required of what kinds of policies and public interventions might favour a more synergistic polycentric urban development. What kinds of concepts for the enhancement of such urban networks are currently framing/dominating the various discourses at different spatial scales in other countries? What lessons can be learned from them?

By Peter Schmitt,
Senior Research Fellow.
peter.schmitt@nordregio.se

Further reading *(also regarding other subjects and fields of future Nordic urban research)*:
Nordregio and NIBR (2007): Urban Development: Nordic strengths and challenges under the heading of a new global agenda. Nordforsk Policy Briefs 2007-3, Copenhagen.
to be downloaded at:
www.nordforsk.org/_img/nordforsk_pb3_web.pdf
or to be ordered at:
www.nordforsk.org/pubinfo.cfm?pubid=66

20-20-20 Competitiveness and Conflicts

Europe has launched its "20-20-20 by 2020" goals: 20% emissions reduction, 20% share of renewable energy and a substantial energy efficiency improvement by 2020. The future of Europe's energy supply should be climate friendly, competitive and secure. These targets are not necessarily complementary however and may in fact lead to significant goal conflicts.

The liberalisation of the energy market's primarily aim is a fully competitive market offering low energy prices to consumers. Climate policy primarily aims at the reduction of emissions. Energy security can be interpreted as basically a reduction in, and a diversification of, energy imports and the strengthening of domestic energy sources – ensuring the existence of a broad mix of energy sources. Renewable energy can increase energy security, can lower emissions and will undoubtedly become increasingly competitive.

The progress of liberalisation is not however uniform across Europe. In Germany, the market was only liberalised in 1999, whereas the markets in Norway, Sweden and the United Kingdom had already been completely opened up by then. Austria and Denmark have liberalised their electricity markets almost completely as well (see Table 1) while Spain, France and Italy and many Eastern European countries only opened up their markets much later, many only in 2007.

In most European countries a few large companies dominate the market, only in the UK and Scandinavia has a satisfactory level of competition been established. There are several reasons for this. One element of interest here is that in most European countries a few large suppliers dominate while the impulse for domestic market protection remains strong. The lack of sufficient infrastructural support can also be an important limiting issue here.

This unequal distribution of full energy market liberalisation across Europe involves some significant competition distortions – some utility companies already face robust competition while others can continue operating in a monopolistic position.

Since utility companies have to compete with each other after the opening of the market, providers need to alter their behaviour in order to survive. In Germany, for example, utility companies reacted very dynamically to the liberalisation of the electricity market in 1999 particularly through firm mergers and other forms of strategic behaviour.

A rise in the market share of certain producers in some countries where competition is limited may however produce a rather uncompetitive market structure thus increasing rather than reducing electricity tariffs. Whether an electricity supplier is able to adjust its strategies in the electricity sector depends on the market situation and in particular on the dominant market conditions. Thus the market entry conditions at the different levels of the current market (production, trade (and selling) play a crucial role.

Furthermore, electricity trading options can offer additional incentives to the practice of market power, unless uniform price structuring for tradeable electricity is created. In Germany until 2006, federal agreements regulated prices in the energy sector. However, it has been observed in the past that due to strategic market behaviour, the market entry of providers with third-party access to surplus electricity was delayed or refused. A regulatory authority now observes these effects and regulates prices.

In its benchmark reports, the European Commission stresses that competition distortions and market power can arise through utilities' strategic behaviour, such as charging net access fees which are too high, thus obstructing the entry of new providers. The different degrees of market opening diminish consumer choice. Therefore, future European electricity policy will try to tackle market distortions and harmonise the market opening processes in all European countries.

European climate policy is dominated by two main challenges: the European emissions trading system and policies designed to increase the use of renewable energy. Europe has reacted to the challenges of climate change by establishing an EU-wide emissions trading system. The idea of emissions trading is very clear, namely, to reach the overall target for emissions at minimal economic cost. However, the success of such a system depends, significantly, on its design, organisation and monitoring process.

The European Union some time ago issued a white paper to support the increased use of renewable energy for electricity production.*1* The share of renewable energy in electricity production in Europe should, they claim, reach 12% by 2010 while individual European countries have already committed themselves to meeting concrete targets for the contribution of renewable energy by 2010.

The contribution of each European country to the 20% renewable energy target by 2020 is however still under negotiation. In order to reach these targets the various countries will apply different policy tools.

Belgium, Spain, France and Portugal support a 'feed-in' tariff (similar to that used in Germany) to compensate for the higher costs of electricity production from renewables.

Other countries, such as Finland, the Netherlands and Sweden, support tax breaks to provide incentives for electricity production from renewable resources.

A quota system regulates the share of renewable energy in electricity produc-tion; licences can be traded in a similar way to the emissions trading system. Such a system is favoured by Austria, Italy and the UK.

Germany has implemented a renewable energy law (EEG),*2* which specifies the share of renewable energy and supports electricity production from renewable energy through concrete 'feed-in' tariffs. The share of renewable energy in electricity production should be increased by 20% by 2020 and by 50% by 2050.

There is still a long way to go however before a fully competitive energy market is created in Europe and the various emissions reduction and renewable energy goals are met. Full liberalisation may lead to an unbundling of the ownership of nets and energy. Such an unbundling could however increase the insecurities of energy supply and power and infrastructure investments may be either postponed or delayed unless a concrete regulatory structure is guaranteed.

Current climate policy demands CO2-free energy production. A higher share of renewable energy will reduce emissions but this demands a significant financial and compensation effort. The emergence of this new policy and regulatory 'architecture' in the energy field will however have a significant effect on European utility companies. In consequence, only those utilities which can produce electricity with cost-efficient and environmentally friendly technologies will, ultimately, gain comparative market advantage.

Strategic market actors, especially promoted by individual domestic energy policy measures, can contradict not only the liberalisation and competition goal but also influence climate targets negatively. Because of this, all European countries should seek to implement the same goals and avoid market distortions. The main goal should be a unified European energy market without market distortions and a harmonisation of the various goals and measures forwarded in this context.

1 See European Commission (1997).
2 The law supporting renewable energy of March 2000: Gesetz für den Vorrang Erneuerbarer Energien (Erneuerbare Energien-Gesetz-EEG).

By Prof. Dr. Claudia Kemfert (ckemfert@diw.de)
Director of the energy department at the German Institute for Economic Research (DIW) and Professor of energy economics at Humboldt University Berlin.

	Degree of liberalisation	Date of complete liberalisation	Main providers	Market share of main providers	Percentage of consumers who changed providers
Austria	100%	2003	EVN, Verbund, Wiener Stadtwerke	68%	5–10%
Belgium	100%	2007	Electrabel	97%	5–10%
Bulgaria	100 %	2007	NEK (Natsionalna Elektricheska Kompania, public company)	~95%	NA
Cyprus	30,2 % (est.)	until 2013			NA
Czech Rep.	100 %	2006	Çeské Energetické Závody	52%	1-4 %
Denmark	90%	2003	SK Power Company	75%	3-15 %
Estonia	13 %	2007	Estonia Energy Ltd. (Eesti Energia)	100%	0 %
Finland	100%	1997	Fortrum, Ivo Group	54%	30%
France	69%	2007	EDF	98%	5–10%
Germany	100%	1999	E.On, EnBW, RWE, Vattenfall	63%	10–20%
Greece	70%	2007	AEH (public company)	100%	0 %
Hungary	67 %	2007	MVM Hungarian Power Companies Ltd (Magyar Villamos Müvek)	35%	NA
Ireland	100 %	2007	ESB	97%	30%
Italy	73%	2006	Elettrogen, Enel	79%	Less than 5%
Latvia	NA	2007	Latvenergo	100%	NA
Lithuania	NA	2007	Ignalinos Atomine Elektrine, Lietuvos Energija AB (LEN), UAB Vilniaus Energija	75%	NA
Luxemburg	84%	2007	Cegetel	90%	1-11 %
Malta	0 %	open			NA
Netherlands	100 %	2003	Essent, Nea	64%	10–20%
Norway	100 %	1998	Statkraft SF, Sira-Kvina-Kraftselkap, Oslo Lysverker	55%	NA
Poland	80 %	2007	BOT (Belchatow, Opole and Turow), PSE (Polskie Sieci Elektroenergetyczne), PKE (Po_udniowy Koncern Energetyczny)	62%	1- 16 %
Portugal	100 %	2006	EDP	85%	Less than 5%
Romania	83,5 %	2007	Hidroelectrica SA (13,2 TWh), Nuclearelectrica SA (5,5 TWh), (public companies)	~95%	NA
Slovakia	80 %	2007	Slovenské Elektrarne (SE)	85%	0 %
Slovenia	75 %	2007	Holding Slovenske Elektrarne (HSE),	75%	less than 2 %
Spain	100 %	2003	Endesa, Hidroelectrica del Cantabrico, Iberdrola, Union Fenosa	79%	5- 20 %
Sweden	100%	1998	Sydkraft, Vattenfall	77%	9, 8%
UK	100%	1998	British Energy, Innogy, Powergen, Scottish and Southern Energy, Scottish Power	44%	80%

Source: Benchmark Report of the European Commission; see European Commission (2007).

Takeover of British Energy

Merges and takeovers: The ownership of the European energy-sector is constantly changing. In April this year the Swedish daily business-newspaper Dagens industri announced that the Swedish energy-company Vattenfall was hoping to take over British Energy, the primarily nuclear based power-company of the UK.

Behind the news was the decision by the British Government to sell the energy-giant. The price discussed was £10bn. Through the sale the British Government wanted to raise money to build more nuclear power stations. French giant Energie de France (EDF), the German group RWE and Spanish utility Iberdrola, which also owns Scottish Power, as well as Vattenfall, were among the bidders. According to the British newspaper The Observer it is likely that the French company will be the new owner of British Energy. The actual takeover is planned to be announced late June. The British government, which owns a 35 per cent stake in British Energy, is keen to see a speedy conclusion to the takeover talks. The Secretary of State for Business John Hutton has already announced that he will promote a programme to build a new fleet of nuclear reactors in the UK.

The new owner of British Energy will play a key role in such a new-build programme. British Energy owns the best sites, with the best connections to the national grid, for the new reactors.

By Odd Iglebaek

Modern passive houses in Tromsø designed by *Steinsvik arkitektkontor AS*. For further illustrations see: www.passivhus.no

'Passive' houses to save energy

For a 5-10% cost-increase, it is possible to build new homes consuming only a third of the energy used by traditionally constructed new houses. Similarly, existing housing stocks can relatively easily be rebuilt to reduce their need for energy to less than half that used previously. The way to achieve this is to build in accordance with what has been termed the 'passive house' method.

The knowledge that airtight and well insulated buildings need little extra surplus energy to keep warm is not new. One of the more modern examples of this dates back to the 1890s and to the construction of the polar-ship *Fram*. The ship was of course water- and thus also airtight while the hull had several layers of insulation giving a total thickness of 40cm.

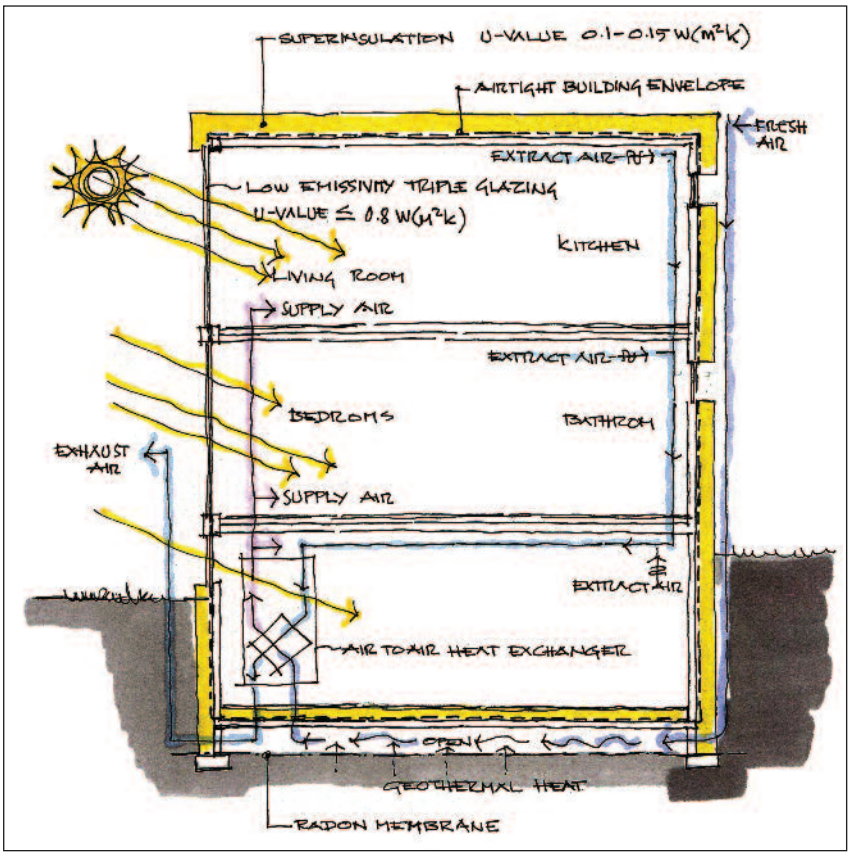
The design and construction of *Fram* was undertaken by the Norwegian vessel-constructor Colin Archer in cooperation with the polar-explorer Fridtjof Nansen. For Nansen and his crew *Fram* was their home for more than two years, including the cold and dark winters, drifting in the ice of the Arctic. Even so, they hardly ever used the stove in the crew's quarters. It was warm enough without it, according to Nansen's diaries.

The more people there were inside, the warmer it became. Usually, it is estimated that a single relaxing adult generates, on average, 150 watts (W) of heat-energy. That is enough to maintain a decent temperature in 15m² of a passive-house in the southern parts of Scandinavia. In the more northerly and dark winter parts it would be enough to generate heat for 10m².

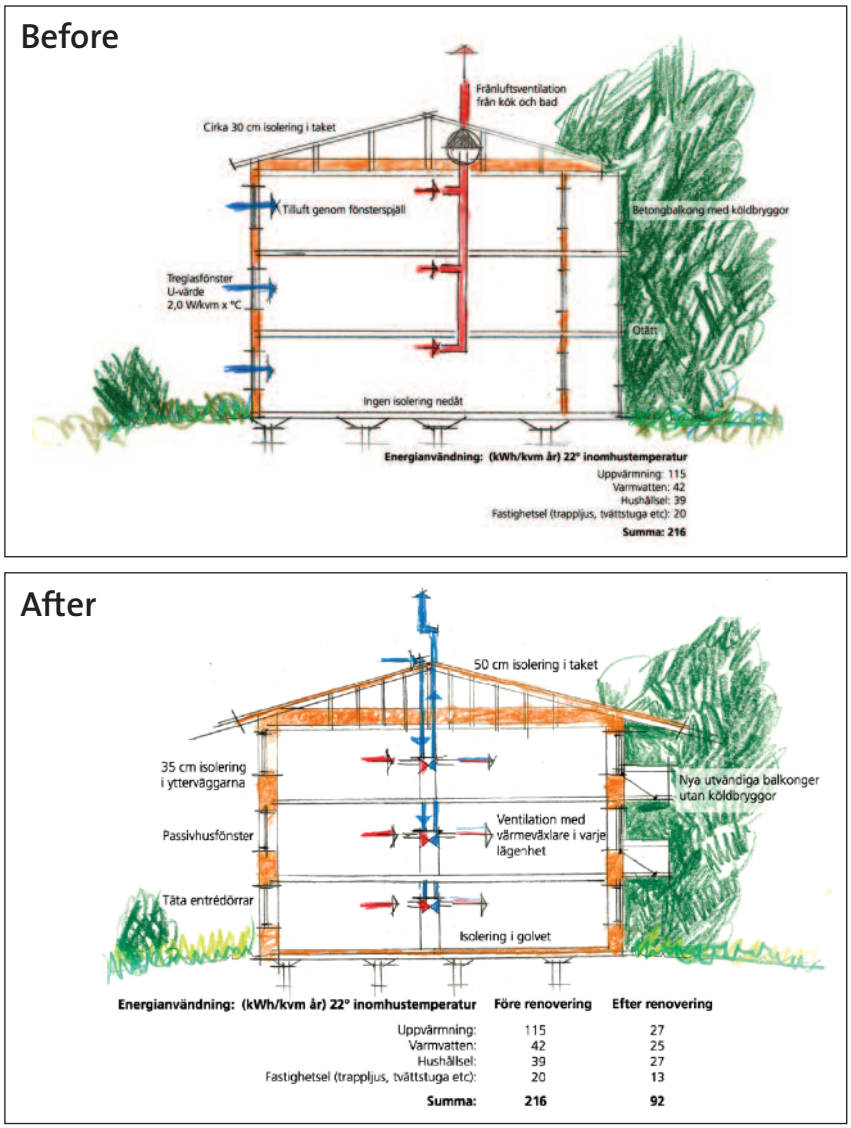
Adding electric lighting, the heat generated from fridges, the odd computer etc., as well as cooking and warm-water heaters, a heat surplus could easily be generated in a passive house. Traditionally, this energy would simply be let lost without any further consideration.

In a passive house, however, much of the heat contained in the outgoing air is 'captured' through an exchanger. Usually around three quarters of the total heat generated in this way can be retained. The house can thus, even if it is cold outside, remain warm almost by itself.

– On colder days we also get extra heat by taking fresh air into the house via a system of tubes below the basement-floor, explains one of the Nordic passive-house pioneers, architect Odd Karl Steinsvik, in the city of Tromsø. – The temperature here in the ground is constantly plus 6-7



The principles of the ventilation system in a modern passive house in Northern Scandinavia. Drawing by *Steinsvik arkitektkontor AS*.



The principles for improving Brogården in Alingsås up to passive house standards. Illustration provided by: www.passivhuscentrum.se

Existing facades of Brogården in Alingsås. Photo by: www.passivhuscentrum.se

degrees Celsius. But with the help of this heat-collector we manage to increase the temperature of the extracted outside air from minus twelve to approximately zero, before it goes through the heat-exchanger. Here the temperature is increased further to just above twenty degrees, he adds.

Approximately 20 000 houses have thus far been built in Europe in accordance with the 'passive' concept. The vast majority of these are in Germany, Austria and Switzerland. In the Nordic countries however there are currently no more than a few dozen current examples.

On 2-3 April this year, however, the first 'passive house' conference in the Nordic countries took place in Trondheim, bringing together close to 500 enthusiastic architects, engineers, scientists and builders. Jointly they participated in almost one hundred presentations, focusing on previous experiences and possible solutions.

Perhaps one of the most interesting opportunities in respect of the passive house idea expressed here was the rebuilding of elderly blocks of flats, particularly those built in the 1960s and 1970s.

During these decades many parts of Europe undertook huge housing programmes based on industrialised building methods where the buildings were usually constructed with only thin layers of insulation and miscellaneous air-sealing.

In addition, such houses were often built with what are termed cold-bridges, implying the need for additional interior heat generation, particularly when compared to that needed in buildings constructed in accordance with newer low energy or 'passive' house concepts.

A typical example of a cold-bridge is a concrete/steel constructed floor running directly from the outside to the inside, without a layer of insulation. This means that the building-materials in themselves transfer large amounts of 'coldness' from the outside. In particularly one finds such cold-bridge constructions in relation to balconies or verandas.

	BROGÅRDEN Per apartment			SWEDEN 800000		
	Today kWh	Saving kWh	After renovation	Today TWh	Savings TWh	After renovation
Heating	8050	-6160	1890 kWh	32	-25	7 TWh
DHW	2940	-1190	1750 kWh	12	-5	7 TWh
Household eltr	2730	-840	1890 kWh	11	-4	7 TWh
Eltr. Common	1400	-490	910 kWh	6	-2	4 TWh
SUM	15120	-8680	6440 kWh	61	-36	25 TWh

Energy use in multy family houses buit between 1963 and 1973

In Brogården in Alingsås, some 75km north of Gothenburg, however, a project to rebuild 300 flats will soon start to remedy such problems. Insulation in exterior walls will increase from 10 to 35cm, in the ceiling from 30 to 50cm. New windows with better insulations-values (0.85) will be installed. Before only an air extraction system existed to extract the heat from the surroundings, but now each flat will get a separate ventilation-system with a heat-exchanger. Finally, new balconies will be constructed without cold-bridges.

– In this way we will make it possible to reduce the need for energy for each flat from 216 kWh/year to 92 kWh/year, explains Hans Eek, architect in charge of the project. Ek is, like Steinsvik, one of *Norden's* major 'passive house' pioneers.

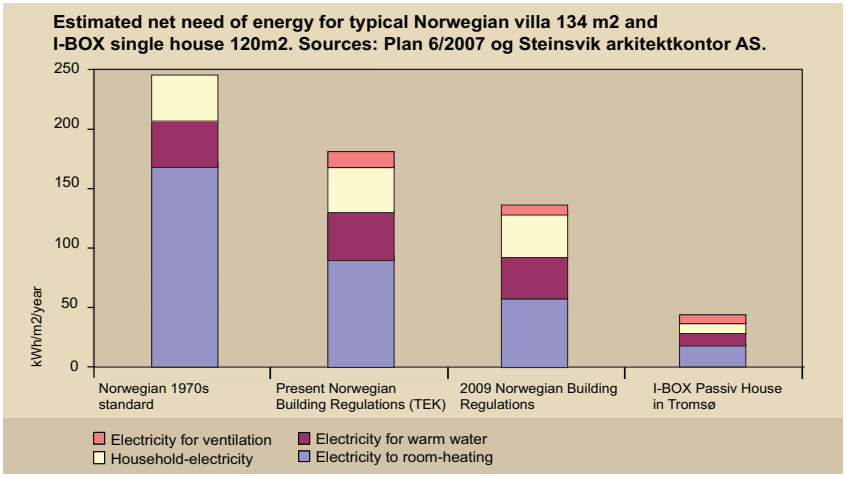
He also explains that in Sweden alone there are 800 000 flats built in a similar manner to those in Brogården in Alingsås: – If they are all brought up to the Brogården-standards, we could reduce energy usage for housing in Sweden from 62 TWh to 25 TWh per year. That is a saving of 36 TWh yearly, he adds. Such a volume of energy is in fact approximately the same as that which all Swedish households, more than four million, buy each year.

Some web-addresses:
www.passivhuscentrum.com
www.passivhuscentrum.se
www.passiv.de
www.passivhus.dk
www.energieffektivabyggnader.se

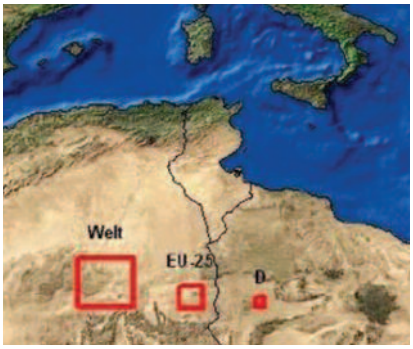
By Odd Iglebaek

Air-tight and well insulated

No fixed definition exists of what constitutes a 'passive house', though generally a 'passive house system' will include the following elements:
• improved insulation values of all external building components
• one air-tight layer (an envelop) embracing the whole building
• controlled airflow/ventilation within the building – with heat extraction
• systems to extract heat from the environment; sun, air, ground, water etc.
• the ability to add extra heat on particularly cold days: e.g. stoves



Solar possibilities



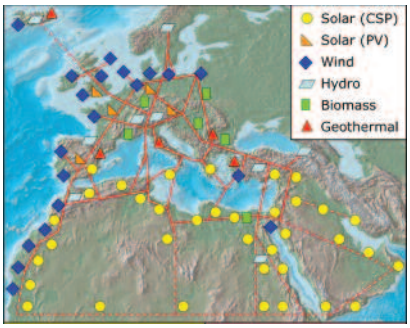
Size of red squares indicates area needed to generate current consumption of electricity in the World, Europe (EU-25) and Germany respectively.

Many plans exist for future energy solutions. One of the recent ideas has been provided by the Trans-Mediterranean Renewable Energy Cooperation (TREC).

By building a system to collect solar-energy at small parts of the Sahara or the Arabian Peninsula, combined with wind-power from the African shores of the Atlantic, it has been estimated that enough energy could be produced to fulfil the needs of Western Europe as well as the Middle East. In addition it would be possible to install desalination com-pounds to produce sweet-water from the oceans.

The principle here is to provide solar-collectors and the windmills in places with low population densities and then to transfer energy as electricity at high voltage direct current (HVDC) through so-called super-grids.

For more information see www.trecers.net



Possible scenario for future super-grid and renewable energy production for the Middle East and Western Europe.

Making space where no room was found

If you have a space you can proceed to fill it. What happens, however, when you have something of vital importance, and there is no space in which to place it? Responses to that extreme situation could range from a broad spectrum of options, from doing one's best with what one has, to collapsing into despair, apathy and self-destruction. One response, though, appears most difficult, and that is to search for a means to actually create a new space; that is a challenging journey.

In Joyce Green's anthology, *Making Space for Indigenous Feminism*, the reader is presented with explorations of many of those options, most based on the intense and not always positive experiences of the authors. Based on the proceedings of the Aboriginal Feminism Symposium held in 2002 in Regina, Saskatchewan, the book brings together seventeen contributors from almost as many countries, from New Zealand to Canada, Finland to Sweden and the USA. They are *Sami, Métis, Maori, Ojibway* and *Ktunaxa* peoples. As contributors, they have taken on the risk involved in chopping out more space, expanding the room for understanding its elusive dimensions.

The overriding impression one receives from the authors' narratives is of the courage and determination that many of them have had to foster in finding a way forward out of their desperate situations. This especially relates to their often lonely circumstances and difficult choices in speaking out on the need for indigenous feminism. As the authors explain, the topics of gender and aboriginal rights, feminism and indigenous peoples' concerns, have not been as straightforward to combine as the uninitiated might imagine. Part of the dilemma lies in the struggle that indigenous peoples have had to endure first in re-creating their own spaces amidst the pervasiveness of colonialism and global modernity, both of which have emerged as partially embedded in each other.

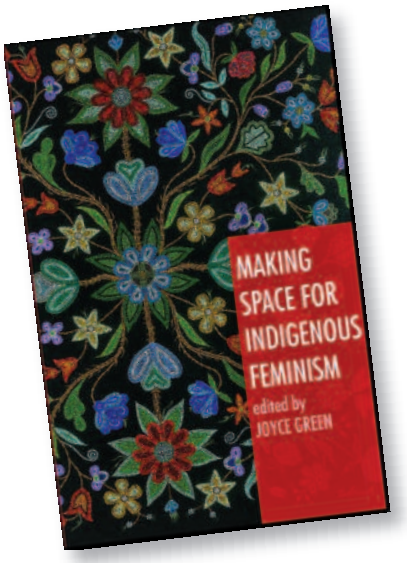
In many respects, most of the arctic, the northern and nordic lands have been the ground for that struggle and, indeed, even the forerunners of some of the most progressive attempts to redress some of the earlier wrongs. The creation of the Inuit-dominated territory of Nunavut, in northern Canada, the relative autonomy of the Greenland Home Rule government, and the steps towards a more autonomous *Sameland* are all examples of attempts to create new spaces for development of aboriginal society and culture in otherwise occupied territorialities. The steady and substantial energy and determination to achieve those reconfigurations has not come without cost, however, something that each of those societies is now coming to grips with.

One such cost, more obvious to some than to others, has been that the structures of gender relations have undergone numerous changes and not always, according to the authors, to the betterment of women's roles and status. In these detailed accounts, we learn how improvement in the lives of indigenous women has too often been subjugated to the preservation of outward harmony towards the society beyond their own people. There are painful recollections of how many women participated in the struggles to liberate their nations, only to find themselves, once progress was gradually achieved, under new masters, this time in the guise of their own men.

How this shift in gender relations took place in the form of silent compacts with the former colonial powers is an unpleasant tale to absorb. Even when women achieved formal equality, as elected members of their newly created parliaments, they were too often expected "to just serve the coffee."

The essential point about this book is that it comes from within the indigenous communities, and that its voices are those of women who have been unable to tolerate their situations any longer. That doing so has in many instances made them 'taboo-breakers', and led to exile from their communities, strengthens the power of their accounts. There is then much for all of us, whatever the northern spaces we inhabit, to learn.

Book review by: Richard Langlais,
Senior Research Fellow
Richard.langlais@nordregio.se



Green, Joyce (ed.) 2007.
Making Space for Indigenous Feminism.
Black Point, Nova Scotia, Canada/London, UK: Fernwood Publishing/Zed Books (254 pp).

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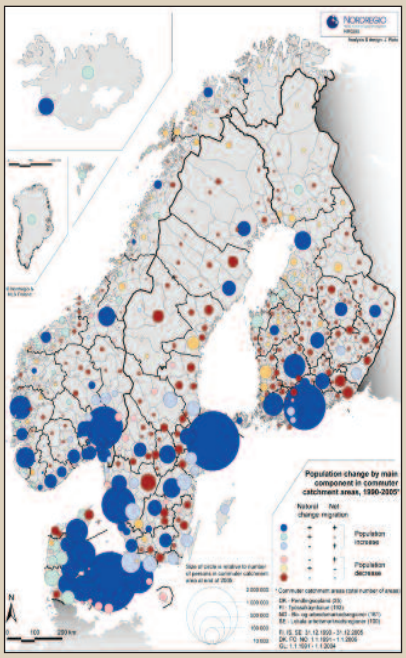
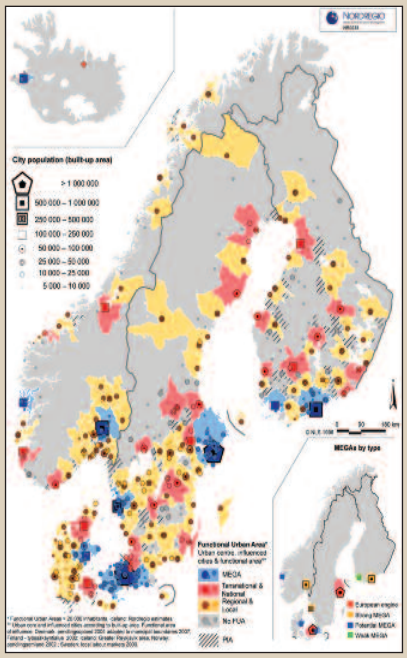
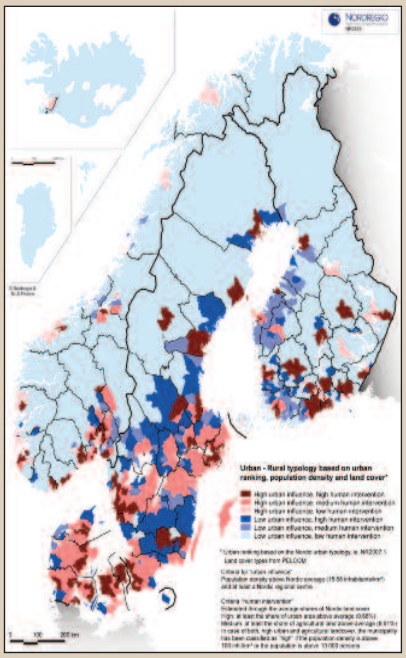


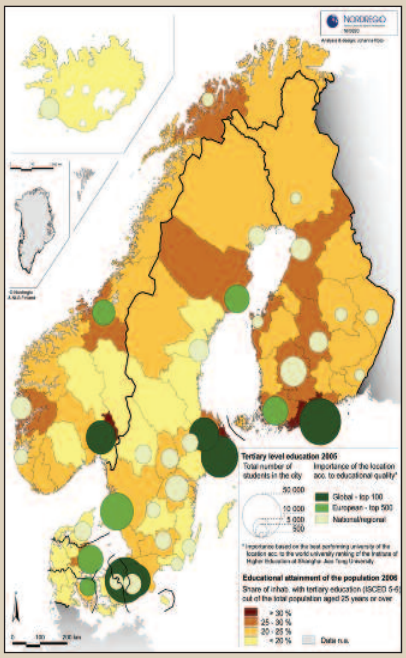
*Population change by main component in commuter catchment areas, 1990-2005**



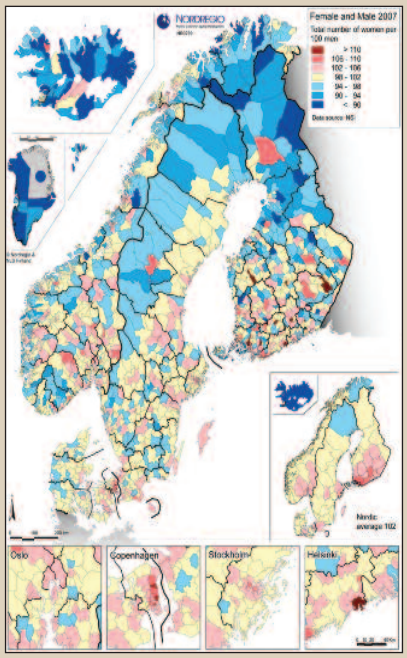
MEGAs by type



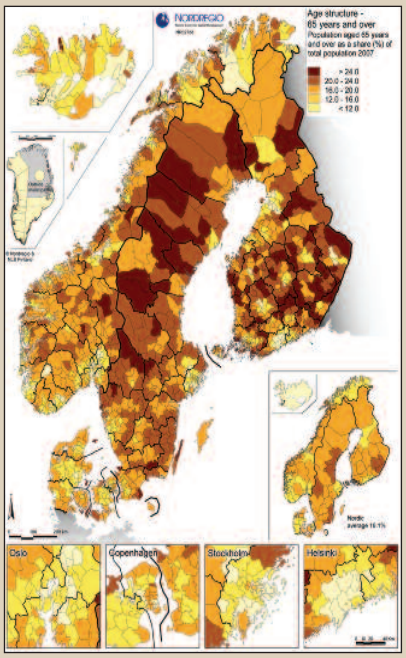
*Urban - Rural typology based on urban ranking, population density and land cover**



Tertiary level education 2005



Female and Male 2007



Age structure - 65 years and over.