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REPORT ON THE SURVEY OF PLANNING PRACTICE IN THE STAVANGER REGION

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The Stavanger region

With 230 000 inhabitants, the Stavanger region is the third largest urban area in Norway. It is the fastest growing region in Norway, and the population is expected to increase by more than 40% by 2040 (more than 100 000 new inhabitants). The region has also the most fertile agricultural land in the country, which poses a major challenge for urban expansion. At the core of the region is Stavanger city with 130 000 inhabitants, however, the central built area is made up of four independent municipalities. With each municipality enjoying land use planning 'monopoly', important regional decisions are very difficult to coordinate across municipal borders or according to the national goals. Rogaland County cooperates with the municipalities in the Stavanger region on land use and transport planning, but cannot issue binding regulation to the municipalities.

The Stavanger region is heavily car dependent and with income expected to double by 2040, car ownership will continue to increase and so will car use (see concluding section for details). To meet these major challenges, the Stavanger region is pursuing a major planning Bybanen, a light rail transit (LRT) system. However, the Bybanen proposal was stopped, and the region is at present planning a Busway alternative. This complex context is the arena for our investigation of accessibility tools in planning practice.

Method

As it was not possible to arrange a workshop in the region due to the poor availability of senior planners, it was decided to use the pre-workshop questionnaire and interview the planners instead.

Close to twenty planners were invited for interviews, with eleven planners accepting the offer. The interviewees came from the Municipality of Sandnes, the Municipality of Stavanger, Rogaland County and the consultancy ASPLAN VIAK. Most of these planners held senior positions with extensive experience in land use and transport planning. In fact, the average duration of their professional planning experience was 27 years. Most planners were interviewed using the questionnaire as a guide, while some filled in the questionnaire and submitted the answers by mail.

The answers to the questionnaire

In this section each of the 12 questions from the guide is presented together with some of the answers given for each particular question.

Question 1: The field of work

People were asked to tick the appropriate type of planning, which did not function very well because many ticked all the planning types listed. Most of the planners interviewed worked with strategic land use and transport planning at the city and regional level.

Question 2: The definition of accessibility

Most of the planners defined accessibility as the ability to access destinations (also cultural destinations) by all modes. In particular 'Universal Design' or 'Access for All' came out strongly as major goals in the Stavanger region. Some typical answers included the following:

● The ability to reach/average travel time with different modes to different destinations.
● Accessibility can be described as the populations' opportunity for choice of travel mode to a particular geographic market area. The market will consist of delocalised travel goals, like workplaces, shops, nurseries, schools, etc.
● Land, both accessibility and universal design (culture, health, roads, all functions). Accessibility for whom and to what? Physical distance and quality on the connection lines.
● It has several dimensions: geographical, social, ecological, interface social/cultural and mode split. Infrastructure is attached to geography.
● SAT (Integrated land use and transport planning) in Fremtidens Byer (Future Cities is a national demo project in Norway involving 13 cities). Reduce transport demand is an aim: density, mix of functions, node development/TOD.

Question 3: The definition of mobility

Most of the planners interviewed defined mobility quite broadly as the movement between two positions, including all modes and destinations (also social mobility was mentioned). Some typical answers included the following:

● Mobility can be described as the population's opportunities to use different travel modes, to reach different travel goals for different travel reasons.
● Mobility is all human movement to and from a particular location.
● Transport mobility is reaching a maximum number of destinations within a certain time period. Distance is less relevant. Mobility also has a social dimension—inclusion vs. exclusion.

Questions 4 & 5: Policy issues and tools

The planners indicated that they use all the information and data at hand to solve each particular planning problem. A lot of tacit knowledge has been accumulated among the planners in each planning office. Accessibility tools are used when appropriate and available, but such instruments are not in the forefront when addressing planning problems in the Stavanger region. The table below presents some of the answers to question 4 in the left column, while the corresponding answers to question 5 are in the right column.

Question 4: *Thinking about people and travel, name 3 important policy issues that your agency is working on in this respect?*	*Question 5:* *In regards to the 3 policy issues you have listed, what data, tools, or information makes you aware of these issues?*
Person 1: – *Land use planning.* – *Decisions on localisations.* – *Transport planning.*	**Person 1:** – *Land use plans.* – *Population data and data on businesses.* – *Transport models/GIS tools.*
Person 2: – *The bus networks' properties regarding accessibility.* – *The street networks' degree of walkability.* – *Capacity limitations for parking and roads.*	**Person 2:** – *Bus lines network data (where and when).* – *Mapping and registering peoples walking habits.* – *Mapping of queues and parking restrictions.*
Person 3: – *Land use.* – *Public transport.* – *Parking policy.*	**Person 3:** – *Land use, localisation and density decide in the long run trip length and travel patterns (which strongly influence accessibility with different modes).* – *The system must be seriously improved, especially travel time and capacity, to become more competitive against cars.* – *Parking policy influences all car trips (both ends), short and long trips in the same degree. This makes parking regulation possibly the most important instrument for influencing mode choice.*
Person 4: – *Urban transport, Accessibility for All, enlarged mode split definition.* – *Rural transport, need intelligent concept for district expansion/accessibility.* – *Regional enlargement (mostly roads, but*	**Person 4:** – *RVU (Travel study).* – *Population prognoses, preferably disaggregated.* – *Transport on roads, PT and freight (e.g. SINTEF: PT down from 8% to 6%).*

not basically).	− *Land use data: historic data and ATP/accessibility data.*
Person 5: − *Accessibility, especially seamless accessibility using different modes in both directions.* − *Systemise and categorise mobility to answer travel needs.* − *Very important where housing, work and other functions are localised relative to each other.*	**Person 5:** − *Travel Study, infrastructure transport, statistics and concrete data for traffic, population and area.* − *Arc view/GIS.* − *The PT company has tools that are being prepared for GIS. The ATP model has ambitions to integrate the transport model.*
Person 6: − *Cycling strategy.* − *KVU (Concept choice statement) of the report Bybanen (Citytram - LRT proposal) and the follow up of the Busway alternative.* − *Integrated land use and transport, localisation and TOD.*	**Person 6:** − *Database VG, which has a lot of data, but even if users are trained ultimately only one one person in the organisation is able to use it.* − *ArcGIS with extra modules for network analysis/spatial analyst.* − *Kompas population forecasts.*
Person 7: − *Increase accessibility for cyclists and PT, i.e. the capacity and standard for bus and bike.* − *Actions to reach zero growth in car traffic. All growth to follow from PT, bike and pedestrians.* − *New road toll package and new parking regulation on Forus.*	**Person 7:** − *Registration of bus travel time. Registration of quality BikeWalk net.* − *Car traffic statistics, RVU.* − *RVU shows high car share, work trips to Forus. Registration of parking places and infrastructure for all modes.*

Table 3.1: Answers to policy issues and tools

Question 6: When considering land use and transport systems, which data, tools, or information make you aware of development opportunities within the city?

- The same tools as mentioned above, but how they are used is important. There is an increasing need for more detailed data when planning for increased density and transformation in complex situations.
- We use the ATP model (Areal og Transport Model) to analyse accessibility, including strengths and weaknesses in the different networks (car, PT, cycling). The data is used to assess localisations, mobility plans, design of parking regulations, PT planning, etc.
- GIS based tools for analysis. Data on status on municipal level and municipal plan. Good traffic models can be of help to find alternatives and

decide on strategy. Limited information is available for freight/business logistics; it should be supplemented.

- The challenges and opportunities are great, not least in cooperation with other municipalities (e.g. cooperation on digital land accounts, an application to ArcGIS).
- It is a paradox that a major localisation (say 2 000 jobs) is decided today, while the consequences of the decision will be felt after several years when the surroundings may be completely changed (PT supply, traffic queues, and land use), and the consequences of the decision will last for several decades.

Question 7: How does your organisation match planning goals (e.g. increased access to labour force/locating residential development/locating employment centres) to transport modes?

Some of the planners pointed to the history of artificially low forecasts making the anticipated future challenges a lot smaller than what they actually became. The planning practice and plans then produce artificial knowledge, which politicians can use to show anticipated results (in fact unrealistic projections).

- Develop different tools for different planning tasks, land and area analysis. Supplement the Norwegian ATP model (land use, transport planning) with transport model elements.
- Bad! In principle overoptimistic goals, car development and welfare. Too little professionalism, too many elastic aims: 'We will to do good'. 15% is the PT goal, but now it is decreasing. At Forus the aim is 40% PT! It tells the politicians that it is easier to reach the goals than it actually is.
- Analysis of localisations in urban transformation. Now home and work is theoretically localised close to each other, but the opportunities are there also in practice. City transformation is the key to reduce VKT and increase density and TOD.

Question 8: When thinking about different transport modes in your city, what kinds of opportunities do you think are important for people to have access to?

Most informants found this question difficult to answer; they could not understand how to prioritise or grade opportunities.

Question 9: When preparing or assessing a plan*, what information does your organisation use to assess the efficiency of local and regional accessibility within the city? (*defined by the user, please specify)

The planners interviewed pointed to the history and the knowledge collected over the years. If the accessibility information is there, then it is used. If not, accessibility often is described without the use of formal models.

- Use accessible travel data, multimodal network, business data to describe an area's mobility and likely transport needs.
- Accessibility maps. Travel time with different modes in the actual travel market for the planning area.
- Test walk distance, cycle distance, terrain, work in parallel, network analysis in GIS.
- Strategic transport planning at regional level: 1) population, welfare growth, 2) RVU (travel study) and freight, 3) spatial organisation. There are two important parts, registration and prognosis. You have to know the explanatory value, and you must be able to assess uncertainty.
- Accessibility is assessed towards goals, but goal achievement is often ignored or interpreted very widely.

Question 10: How are tools or data outputs from tools selected for use in preparing or assessing a plan?

The participants provided very similar as in question 9: if accessibility information is there or a model at hand, then it is used. If not, accessibility often only described without the use of formal models.

- Assess capacity and demand in road networks, parking, public transport supply and bike-walk system in the study area. Evaluate sensitiveness and alternative opportunities for bus, walking and cycling.
- Depends on type of plan and land use. Shopping and service areas have different mix of modes and travel distances than for example workplace locations.
- Accessibility in short trips (typical shopping) is completely different than longer trips (typical work journeys). The type of trip decides what type of data one focuses on.
- It is very important: for all tools to communicate. The traffic plan is always drawn in Dac. Simple and effective GIS is used in strategic planning.
- Classic reporting and dissemination, decision-making support. People must understand the essence of the message and the available knowledge (presentation of models). Illustrations provide 70% of the message through visual impressions.

- Municipality intranet has most programmes accessible, and most of the information is there.

Question 11: Where in the organisational hierarchy of your organisation are decisions made about accessibility? (e.g., informal meetings with colleagues; a decision-making committee, or by tech reports to politicians)

(This question is a very complicated question, and social scientists have been struggling with it for years.)

- Planners' meetings.
- County director is the real decision-maker; the administration only provides recommendations. Rogaland County is good at drawing the line between politicians and planners.
- The state ('Access for All' law) criteria for accessibility.
- The political steering group decides on the Transport Plan. In practice the planners and transport officials decide together through cooperation.

Question 12: Comments?

There is an overall demand among the planners for an integrated land use and transport planning model, which can easily simulate different alternative paths and trajectories using different policy instruments to reach policy goals.

- The tools we use are developed by our company (ASPLAN) and I have used these for many years. Accessibility analyses show a high degree of sensitivity since the trips are relatively short in the region, and because modes like walking and cycling are sensitive to distance. Public transport is also relatively sensitive since competition with the car is geographically limited (hence the low grade of PT accessibility in the 'city belt').
- Tools that integrate land use and transport systems are required. This would give the opportunity to decide sensitivity and the strength of different variables in an integrated process.
- There are several methods for calculating and assessing accessibility, but little professional discussion about the topic.
- There is a need for an interactive land use and transport planning model for all levels: region, city and neighbourhoods.
- VISUM should be acquired by the county council.
- The regional section and the transport section have two different cultures. The regional section looks at legal precedence and ignores substance. Often the regional section knows the government's view in advance, and follows this line of thinking! The regional planning section is more democratic.

- A wish: a model that 1) combines travel mode choice with input from land use/accessibility models, and 2) visualises the results, which now is very difficult. A better interface model and dissemination/visualisation tools need to be developed.

Conclusions

This quote from one of the informants gives a good picture of the present state of affairs in the Stavanger region:

> Competence in planning? Architects/planners believe that land use is decided and then transport follows. There is a need for better understanding of the complexity and how regional strategies can influence change.

This statement points to the current inadequate approach in the planning institutions. The fragmentation and sectorisation of the planning institutions across levels and layers has produced a gulf: land use planners make their plans and transport planners theirs, with little integration between the respective plans. The informant also sees improved knowledge and understanding of the complex processes of urban change as the way to increase planning competence. However, increased planning competence does not automatically lead to better planning outcomes (e.g. the desired modal shifts).

The interviews in the Stavanger region were done to find out what the planners described as their major tasks, and in particular how accessibility tools could be helpful in planning practice. These conclusions assess the information from the interviews in the perspective of how the planners have experienced past planning and the major challenges that confront the Stavanger region.

Past experiences with accessibility planning

On the following map of the Stavanger region the black dots show where new office buildings have been localised between 2000 and 2007. The aim and the plan was build a more compact city with better access to the PT system, hence all new buildings should be localised around important PT nodes with good walking accessibility to the network (or at least close to the PT network). However, as the map clearly shows, the majority of the new office buildings are located in the white part, outside the coloured area with good accessibility.

The dark yellow circles on the map are nodes with very good accessibility defined with the use of GIS tools and adjusted according to the planners' local knowledge. The main information in the map is that the majority of new jobs in the region are localised far from the PT system and thus contribute to more car

dependence. The lesson from the past planning is that good accessibility knowledge did not improve planning practice in the Stavanger region or lead to achieving transport goals.
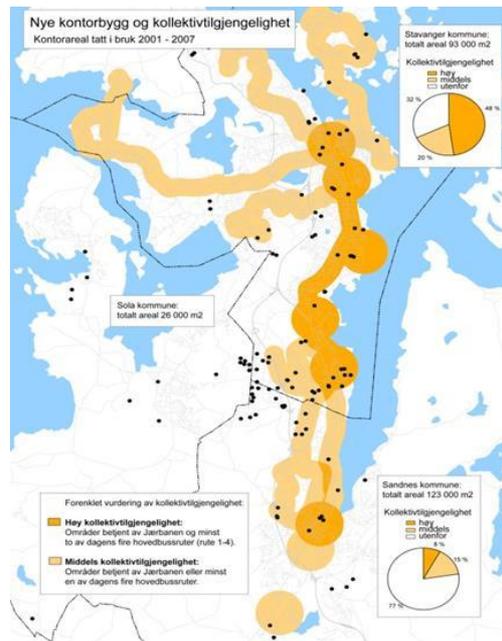

Figure 3.44: The Stavanger region (Source: KVU Bybanen)

The major challenges for the Stavanger region and planning practice

The Stavanger region is the most automobile dependent region in Norway; it is the richest region, and it is also the fastest growing urban area. One major challenge for the region is the increase in the number of inhabitants, illustrated in the figure below.
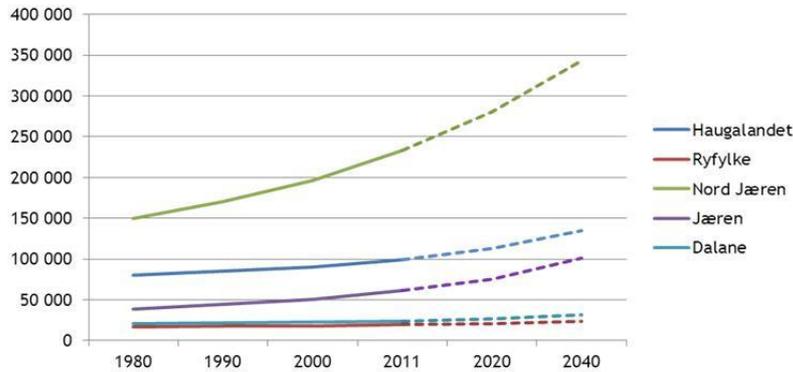
Figure 3.45: Population growth in Stavanger region (Source: SSB)

The green line for Nord Jæren is fairly similar to the Stavanger region. Up to 2040 the population is expected to grow with more than 40%. With the region bordering the best agricultural land in Norway, the additional population will be located within the existing urban area and on the edge of the urban area. Hence, the average travel distance will increase and more residents will live in areas that are very difficult to service with a good PT system and have poor accessibility.

Another major challenge is that the residents are becoming more affluent and hence will buy more cars. Income per capita in the Stavanger region is very high. The income development 2000–2010 for different regions in Rogaland County and for Norway as a whole is shown in the figure below.

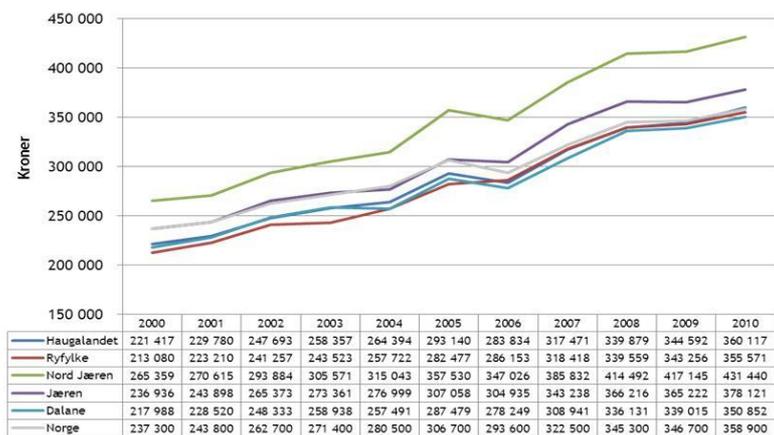|	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Haugalandet	221 417	229 780	247 693	258 357	264 394	293 140	283 834	317 471	339 879	344 592	360 117
Ryfylke	213 080	223 210	241 257	243 523	257 722	282 477	286 153	318 418	339 559	343 256	355 571
Nord Jæren	265 359	270 615	293 884	305 571	315 043	357 530	347 026	385 832	414 492	417 145	431 440
Jæren	236 936	243 898	265 373	273 361	276 999	307 058	304 935	343 238	366 216	365 222	378 121
Dalane	217 988	228 520	248 333	258 938	257 491	287 479	278 249	308 941	336 131	339 015	350 852
Norge	237 300	243 800	262 700	271 400	280 500	306 600	293 600	322 500	345 300	346 700	358 900

Figure 3.46: Income developments in the region (Source: SSB, adapted by Rogaland County)

The Stavanger region (Nord Jæren) has an income per capita that is about 20% higher than the national average. Incomes in the Stavanger region will also

grow much faster than the national average in the years up to 2040, according to government projections. This background is important for understanding the answers of the interviewees.

The main lessons from the Stavanger region

First, there is a call for an effective model that integrates land use and transport. The model must be easy to use so that the consequences of different strategies at the regional level, strategies at the municipal level and planning proposals at the local level can be evaluated at low costs (time and money). It must also be so easy to use that it becomes a tool in daily practice.

Second, the lack of goal achievement and inefficient planning shown above raise questions about the fragmented planning system and political decisions. The planners' carefully elaborated plans—which are also adopted by the politicians—seem to have little influence on political decisions when a new development proposal is in conflict with the plan. This is very frustrating for planners, and they do not feel that more knowledge produced by better planning instruments (i.e. the accessibility model) would improve this situation.

Third, there is already a large body of tacit knowledge among planners in planning offices. When the currently available accessibility instruments are stacked against this existing tacit knowledge, they are not able to produce data that can significantly improve upon present planning practice in the region.