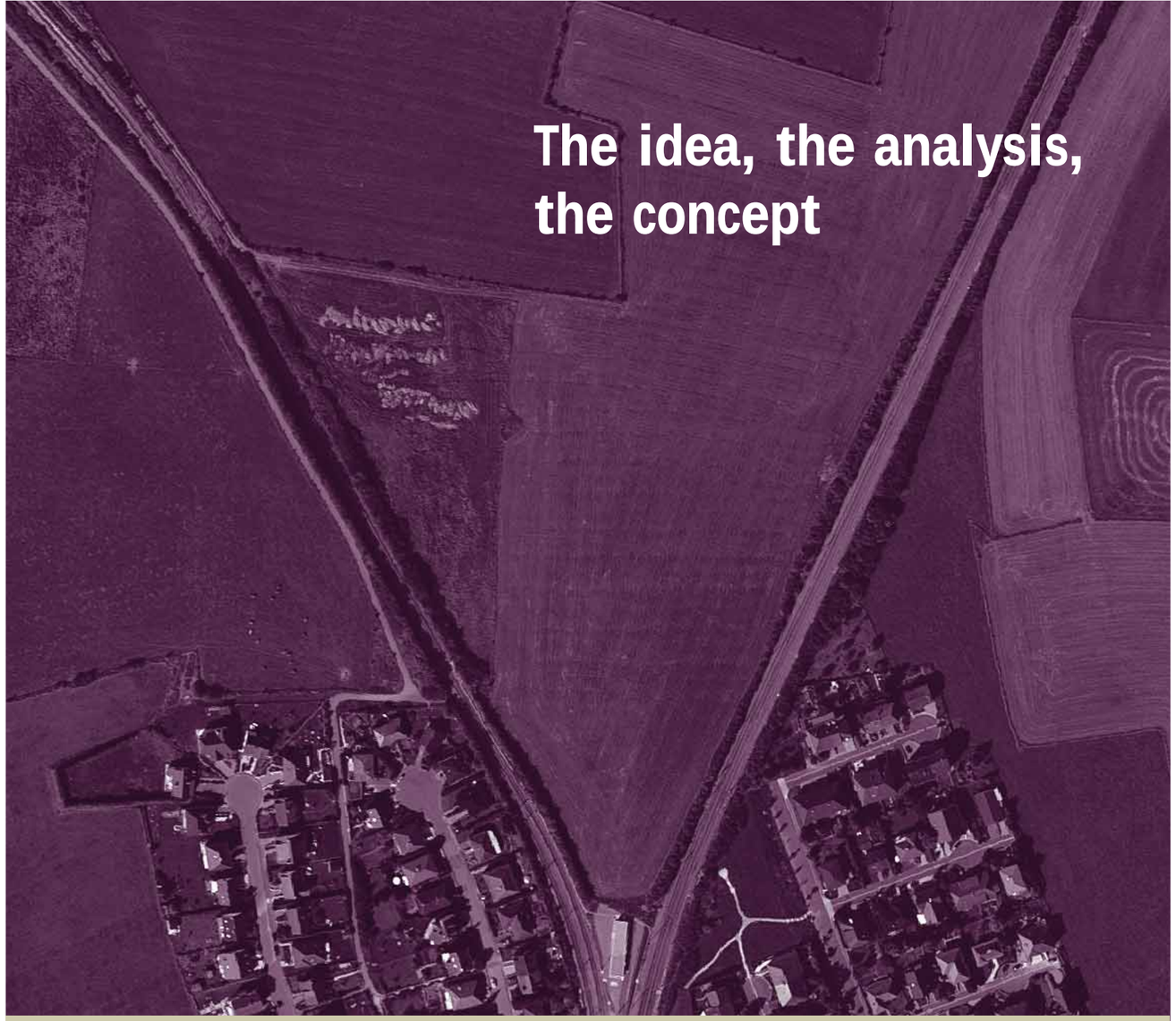


The idea, the analysis, the concept

IVL

An integrated transport and spatial development concept for Luxembourg

1

The IVL is ready!

After almost two years of hard work, the Integrated Transport and Spatial Development Concept for Luxembourg (IVL- Integratives Verkehrs- und Landesentwicklungskonzept) is ready. In addition to analysing the situation, drawing up scenarios and trying to find concepts and possible solutions, the general public has been kept informed via the website (www.ivl.public.lu), events and a brochure. The core thrust of the IVL, including its proposals for the development of Luxembourg, is outlined in this second brochure.

A pressing challenge to meet

Luxembourg's national economy has long since needed more workers than actually live in the country. Should this be resolved in the future by more commuters from outside the country or by more people living in the actual country? Where would the population live in the country? Can we limit the growth of transport with all its consequences, thereby maintaining the quality of life and competitiveness of Luxembourg within an enlarged Europe?

These questions will also remain topical if, as happened recently, economic growth flattens out somewhat. If growth consolidates at a lower level than was recorded at the end of the nineties, the underlying forecasts would take a little longer to come about. However, the technical questions remain the same because, for reasons of protecting the landscape, using public funds selectively and developing the regions attractively, an integrated manner of thinking and evaluation must become the yardstick. Annual economic growth of about 4% has been taken as a basis for the starting hypothesis for processing the IVL.

The IVL set out to investigate how the settlement structure, commuter structure and transport infrastructure can be developed and coordinated in the future. The aims were to increase the share of public transport from the current figure of 12% to 25% by the year 2020, to develop the housing structure further in such a way that it helps to avoid and relocate transport and to reduce the use of the landscape.

The path to the IVL

A planning team was commissioned with the task of compiling the IVL, covering all the specified planning aspects. It comprises the following offices: AS&P (which is responsible for the topic of urban development, in particular), R+T Partners (which is responsible for the topic of transport development, in particular) and L.A.U.B. (which is responsible for the topic of landscape development, in particular). The Ministry of the Interior and Spatial development, the Ministry of Transport, the Ministry of the Environment, the Ministry for Public Works, as well as the Ministry of Economic Affairs and Foreign Commerce and the Ministry of Middle-Class Enterprises, Tourism and Housing took part in the steering group. This type of cooperation, on the part of the authorities too, is another step towards innovation!

In addition, at the start in 2003 an international group of experts was convened to provide advice for the IVL. They were asked to provide a critical evalu-

ation of the ongoing work on the concept and independent recommendations for the strategic orientation of the concept. The experts met four times, discussed the drafts which were compiled by the planning team and made suggestions on how to take this further. Whilst there were also very different perspectives represented, everyone involved signed up to the recommendations which were completed in autumn 2003 (cf. www.ivl.public.lu), confirming that they were toeing a common line.

There are selected comments and recommendations by experts contained in boxes for each of the different topics in this publication.

What should the benefit of the IVL be?

The IVL will help to put into practice the essential targets set out in the Programme Directeur (see www.ivl.public.lu) which was passed by the government in spring 2003. In this sense the IVL is, firstly, a strategic tool for considering different development options and, secondly, a working instrument for coordinating sectorial plans, as well as a framework for regional und local authority planning. Furthermore, the IVL is designed to serve as a new planning approach for establishing integrated thinking and coordinated actions in practice in the longer term. However, the IVL is a strategic, conceptual plan, it does not represent concrete project and finance planning!

The international experts on the approach of the IVL:

- "The Grand Duchy of Luxembourg has reached a development threshold which calls for consistency in governmental actions in order to safeguard sustainable development options for the future of the country."

- "Processing the development of the landscape, housing and transport in a common, integrated concept is a trend-setting approach to planning. It allows positions of interest, targets and conflicting objectives on the part of these specific areas to be identified at an early stage and a corridor of solutions to be defined in consultation with the key players as a basis for coordinated action and for the requisite focusing of measures."

- "In view of the number of issues which have to be resolved, the IVL has to be a robust concept which can withstand any changes in the development parameters."

The current situation in Luxembourg

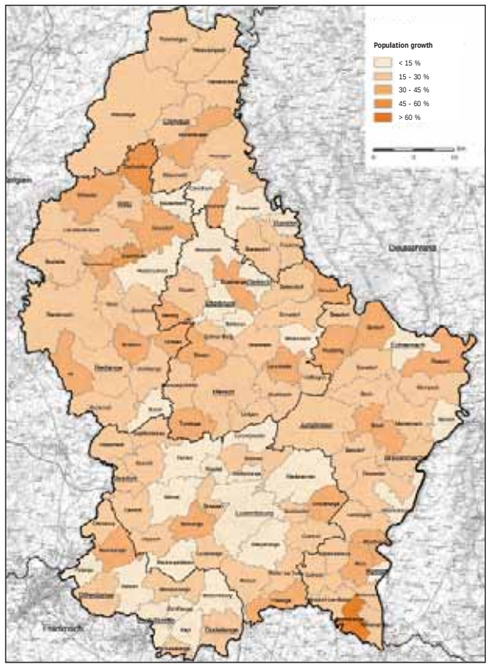
In a first step, an analysis was conducted into the country's fundamental structures, such as the planning and administration strata, the settlement structure, on the one hand, and, on the other hand, the spatially relevant parameters, such as population and housing structures, jobs, transport, transport infrastructure, classification of the natural environment, as well as environmental and spatial restrictions.

Essential results of the analysis:

- During the 90s, the percentage of the population living in rural areas increased more quickly than in the capital and in neighbouring municipalities, in the South and in some central places. This has not helped to stabilise the polycentric structure defined by the Programme Directeur.

- Further development needs to make allowance for the fact that, with households becoming smaller and the corresponding increase in living space consumption per head, approximately 20,000 new homes will be required by 2020, even without any further growth in population.

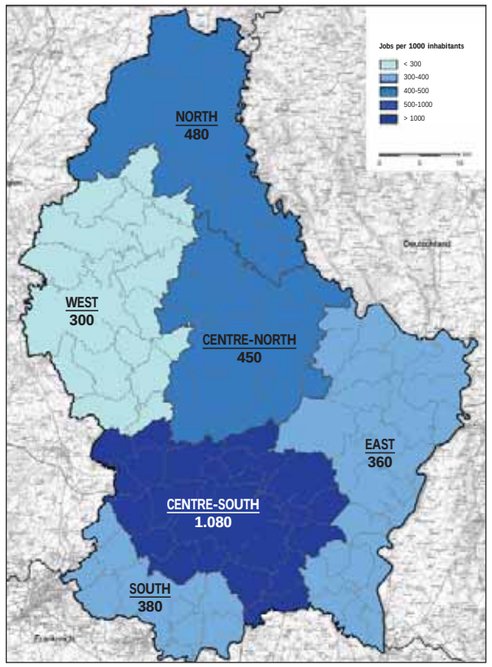
- Utilisation density for housing space varies between 5 and 30 housing units per hectare, depending on the region, with an average of 13 homes per hectare (relative to the gross building land available). This is low by international comparisons and has to be raised in order to lower the consumption of space and to improve the possibilities for developing the local public transport network.



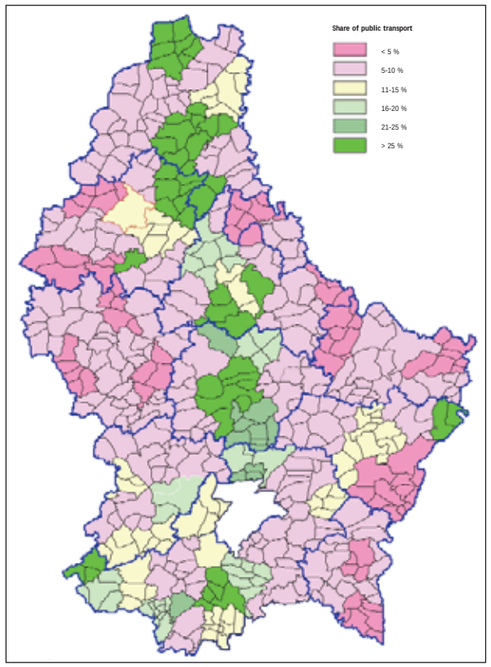
Demographic evolution 1991 - 2001

2

The analysis: Structures and development potentials



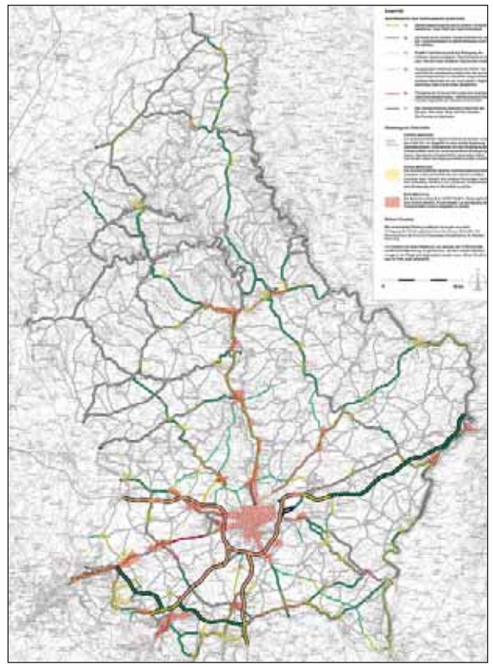
Jobs in 2002 per 1000 inhabitants (workforce)



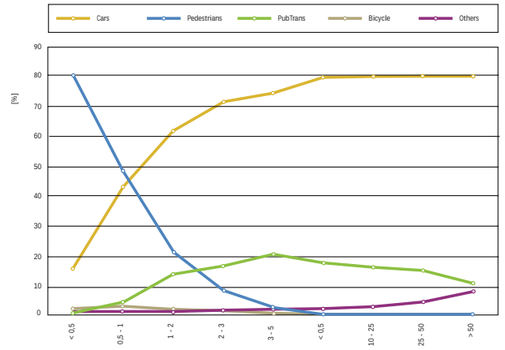
Modal split of work-related traffic travelling to and/or from the city of Luxembourg

● The distribution of jobs in the different parts of the country shows that there are disproportionately more in the Centre-South region and, more especially, in the city of Luxembourg, which was to be expected; there is also an unexpectedly high number of places of work in the North, as well as a comparatively low number in the South. The national average number of places of work in Luxembourg in 2002 is about 650.

● On an average working day there are 1.77 million journeys made in Luxembourg, 1.42 million of them by car, bus or rail. The modal split which reflects the percentages of the different modes of transport reveals that the roads of Luxembourg City are the only place where local public transport achieves a value of just over 20 per cent. The corresponding value for the whole country is 12 per cent. Cross-border commuters are particularly low-rate local public transport users. The diagram of the "Modal split of work-related traffic" shows that people who commute to work in Luxembourg City by public transport only do so to any significant degree from municipalities where there is a rail connection.



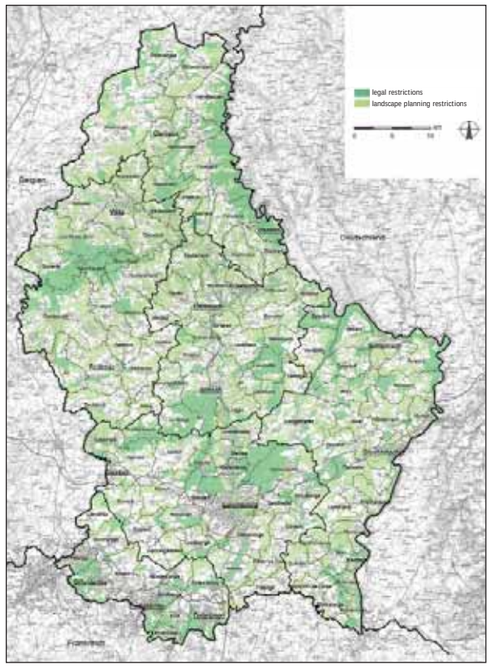
Annual average of the traffic flow quality



Modal split by distance

● The largest car flows are on the motorways. The road network is characterised by very marked rush-hour traffic in the morning and by an evening peak which is less pronounced but which lasts longer. These peaks occur, in particular, on the arteries leading into Luxembourg City. The phenomenon of commuter traffic overlaps with a specific feature of urban development in Luxembourg. As residential areas are primarily built along local main roads, residents are particularly exposed to noise and exhaust fume pollution. The map shows the quality of traffic flow, in particular (in red) the routes and thoroughfares on which more than 8000 vehicles are counted in 24 hours and which are therefore classed as critical.

● Bicycles play as good as no role in everyday transport; local journeys are mainly travelled by car: almost half of journeys under 1 km, and over 60% of journeys up to 2 km. This traffic pattern is favoured by the mainly dispersed settlement structure, by the high degree of motorization and by the low fuel costs.



Restrictions on urban development

● The landscape planning evaluation took both legally binding restrictions (e.g. nature reserves) and restrictions arising from a planning perspective (e.g. excessively steep slopes, biotopes which merit protection) into consideration. According to this, about 60% of the country should be kept free from building up. And the remaining areas must take due account of environmental legislation, which requires environmental compatibility checks for certain measures, as well as the aesthetic qualities of the landscape and other factors, such as the quality of the soil for agricultural use. The map shows the distribution of the areas that are bound by legal restrictions (dark green) and the areas which may not be build on from a landscape-planning perspective (light green).

What is possible in Luxembourg?

The analysis was followed by a detailed examination of the development potential of the country. It

● identified as yet not used residential, commercial, mixed-building areas, which are shown on the municipal land use plans (PAG) and other usages;

● analyzed the current dialogue about measures in local public transport on the road network and evaluated it;

● in the case of the development of housing and transport routes, it examined overlaps with existing and proposed legal restrictions; and

● it considered the expected development quota for planned building sites.

This investigation showed which of the marked building sites are theoretically available for building on, which planning needs to be carried out for transport routes, what conflicts this causes with the landscape and which areas need to be preserved or developed in future from an ecological perspective.

To sum up, there are currently already about 6300 hectares of space earmarked for development in the PAG, corresponding to about 2.4% of the area of Luxembourg or 31% of the current urbanized space. 60% of this reserve of building land is intended for residential housing, 28% for industry, commerce and services, as well as 12% for other uses. However, talks with local mayors reveal that not all this space is available on the market: a mobilisation rate of about 60% is expected. Investigations into current settlement development structures have revealed that there is still further capacity within the existing cities and villages: 8 - 12% of housing, mixed-use or core areas which are currently already developed or which are lying vacant could be used more intensively through conversion or by recondensing.

In order to consider which framework would be sensible and viable for the spatial development of Luxembourg, abstracted models with clear targets have been discussed, and the advantages and disadvantages for spatial planning have been specified. The combination of several models has given rise to the spatial model of the "polycentric urban structures integrated in the landscape embedded in functional regions". Particular advantages to this spatial model are:

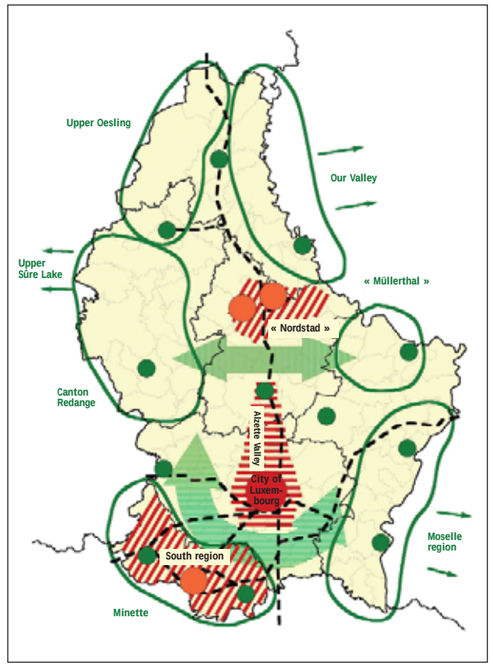
● the creation of a critical mass for local public transport, i.e. a minimum volume of homes which are close enough to one another to enable their occupants to have adequate demand for good local public transport connections;

● steering growth in order to strengthen the spatial structure of the country and in order to develop a city with European stature;

● new urbanism with different functions in the South region, in “Nordstad” and in the agglomeration of the City of Luxembourg with a suburban development axis in the Alzette Valley, as well as

● the complementary development of the rural areas, in particular in such a way that their specific qualities are strengthened and avoiding the emergence of dispersed housing developments.

The "polycentric urban structures integrated in the landscape " comprises Nordstad, Luxembourg City and its surrounding agglomeration and the South region as a networked system of cities and towns, linked by green belt areas. The other part areas should be developed further into regions which are functional in the long term, preserving the structure that has emerged there, their cultural and landscape attractiveness and their regional identity.



Spatial model

3 A model of territorial organization as a framework for the future spatial development of the country

Balanced development and strengthening of regional identities can be promoted on the basis of differentiated pictures of the individual areas. The green belt, i.e. the space between Luxembourg City and the southern region, and the strips of green belt between the Alzette Valley and Nordstad serve as recreational areas for the conurbation and also connect with other areas of landscape.

The international experts on the spatial model:

- "With its excellent landscape qualities and diverse settlement structures, the Grand Duchy of Luxembourg offers good potential for designing urban developments of the quality called for by firms in the knowledge-based sector in competition between locations within Europe."

- "In line with the IVL, the group of experts recommends a decentralised spatial development concept. Support should not be given for one centre, further development should acknowledge the country's agricultural, historical and regional peculiarities and take due account of existing investments in housing developments and infrastructures".

In consideration of the objectives of the Programme Directeur, on the basis of the spatial model, as well as of the forecasts and assumptions for the development of the country, various inter-related spatial and transport scenarios have been compiled, analysed and evaluated.

Is there any need for corrections in spatial development?

An initial calculation shows that the population development on the sites which are classified and can be mobilised today would not be in line with the objectives of the desired spatial model. It would result in a disproportionately low development of the South region, even though it offers good potential for condensing and for developing the rail network, and disproportionately high population growth in rural areas, coupled with diminished significance for various central places. If the transport, landscape and spatial-planning objectives which are associated with the spatial model are to be achieved, the shape of spatial development needs to be revised, in addition to the more condensed form of building which has already been considered. Namely:

- consistent urban densification and use of the existing building land reserves, brown-field sites or underused areas in local core areas,

- consistent coordination between housing development and public transport by prioritising the development and identification of new sites in the vicinity of railway stations,

- consistent spatial concentration whereby the populations in central places grow at an above-average rate, while those in rural areas grow at a more moderate pace.

What does the future hold - more people commuting to Luxembourg or more people living here?

The Grand Duchy of Luxembourg's development as a country depends largely on its economic development and, by association, on the number of professional commuters from outside the country or on the trend in inhabitant numbers. The starting basis for the IVL is the number of jobs, which is predicted to be 395,000 by the year 2020.

With this assumed increase of 106,000 jobs, but with the number of people resident in Luxembourg only rising insignificantly at the same time, 91,000 jobs would have to be filled by more people moving here or by more commuters.

The "commuter scenario" presupposes that 75% of the 91,000 employment opportunities will be filled by commuters. This would take the number of cross-border commuters to a total 168,000, while the number of residents would rise to 511,000. The IVL contains ideas on how these numbers of residents could be spread out spatially in line with the above targets. The existing housing land and that which could be mobilised according to the PAG plans would suffice, although this would entail the selective creation of areas of concentration and intensive urban densification.

4

Scenarios and effects

The "resident scenario" presupposes that only 40% of the available jobs are taken by commuters. Since this would entail greater numbers of new residents moving in, the number of residents would rise to 561,000, and the number of cross-border commuters would rise to 136,000. The IVL also examines how this increase in residents could be dispersed spatially in this case. In order to guarantee the supply of goods and services to the additional residents, the targets which would have to be applied would be to develop new housing land and to upgrade further towns to central places, in addition to those identified in the Programme Directeur.

Where will the new jobs be?

The spatial model will also give rise to regional requirements in terms of the development of jobs, most notably:

- improved distribution in respect that employment and housing must be able to be linked regionally;
- developing zones of economic activity close to the border, in particular for sectors in which many commuters work;
- greater diversification in terms of job opportunities, e.g. to support the structural change in the southern region.

In a workplace scenario the IVL has examined the possibilities for working with the forecast growth in jobs. It shows that this growth can theoretically be accommodated on the existing potential space. The quality-related targets call for a differentiated underpinning of central places and regions.

The spatial implementation of the commuter and resident scenario, as well as of the workplace scenario forms the basis for transport scenarios.

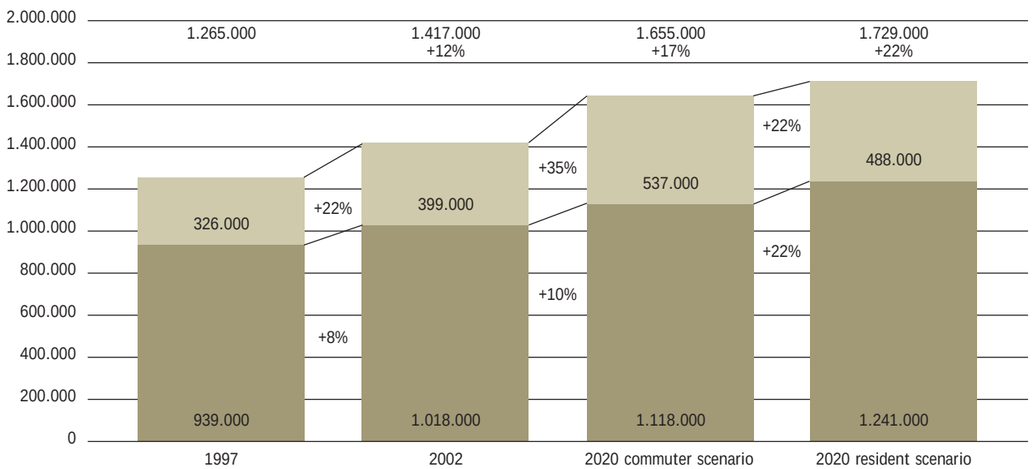
How will the transport situation develop in Luxembourg?

The transport scenarios IVL1 and IVL2 outlined in the IVL serve to peg out the transport-related framework for action through to the forecast horizon. The primary objective in the two scenarios is to reduce the percentage of transport by road. They are fundamentally based on the same strategies:

- promoting walking and travelling by bicycle
- parking space management
- expanding the local public transport network
- reducing the traffic load passing through towns and reinforcing heavily used sections of road
- building Park+Ride and Bike+Ride facilities

However, the intensity with which they are used varies. For example, scenario IVL2 describes a much stronger coupling of housing development with regional access by train and tram. This coupling is an elementary block to the sustained shifting of road-users to local public transport.

The individual expansion measures in the road and local public transport networks are described in more precise detail in section 5.5 of the IVL Final Report (see www.ivl.public.lu).



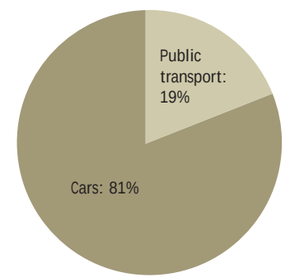
Volume of transport in 2020 for the two population scenarios

The figure illustrates how person-journeys would develop under the assumption of the commuter scenario or of the resident scenario. Between 1997 and 2002 alone, the number of cross-border person-journeys rose by 22%, and the number of domestic person-journeys rose by 8%. The third column shows the forecast for the year 2020 under the assumption that the commuter scenario (i.e. comparatively low growth in building land and residents and higher growth in commuters). In that event, the number of cross-border journeys would be up over a third on 2002, whilst domestic journeys would be up a tenth. Applying the resident scenario (i.e. higher growth in residents and building land and comparatively lower growth in terms of commuter numbers), this growth would be split equally between cross-border and domestic journeys. The number of journeys would rise at a higher rate than in the commuter scenario because school runs, supermarket trips, etc. would also occur within Luxembourg; in the commuter scenario they occur abroad and do not count. However, since the journeys are shorter, the resident scenario would still generate less traffic on the whole.

When working through the scenarios, it becomes clear in respect of the expansion of the transport networks that the political objective of 25% local public transport use can be almost achieved using transport scenario IVL2. The figures opposite show how the percentages for local transport and passenger car journeys would develop under the conditions for transport scenarios IVL1 and IVL2. Therefore, future measures in terms of transport infrastructure should be based on scenario IVL2 or should even exceed it in terms of the local public transport on offer.

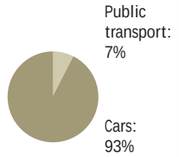
Modal split in IVL 1

Public transport share of total traffic



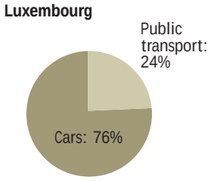
Total: 1.7m person-journeys

Public transport share of cross-border traffic



488,000 person-journeys

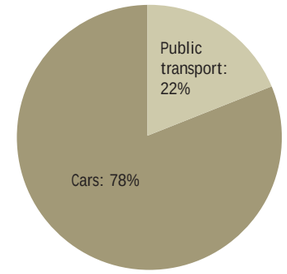
Public transport share of domestic traffic in Luxembourg



1.2m person-journeys

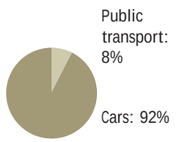
Modal split in IVL 2

Public transport share of total traffic



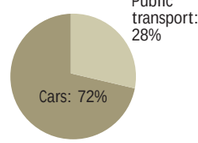
Total: 1.7m person-journeys

Public transport share of cross-border traffic



488,000 person-journeys

Public transport share of domestic traffic in Luxembourg



1.2m person-journeys

Advantages and disadvantages of the resident and commuter scenario

The commuter scenario requires markedly less building land. If building densities are raised and the areas are mobilised accordingly, the requirements can be met on building land which has already been identified.

From the point of view of transport, the commuter scenario entails fewer person-journeys than the resident scenario. However, the distances covered in the commuter scenario are longer, giving rise to a greater volume of traffic on the whole. Since the resident scenario makes for better use of local public transport capacities and yields increased possibilities for walking or taking a bicycle to work, the resident scenario is preferable from a transport perspective.

The resident scenario also needs to be organised in order to foster compatibility with balanced spatial development. It entails considerably greater requirements in terms of spatial development. The entire country must undergo a "leap in development", e.g. by identifying new, large areas of building land which are well served by public transport or by enlarging the existing centres and developing new central places which possess reasonable infrastructure.

From the perspective of landscape-planning, special measures are required in both scenarios in order to protect and develop the open space.

The international experts on the spatial model and the scenarios:

- "The regional assignment of housing and workforce development is based on the guiding principle of decentralised concentration (Programme Directeur) which is developed and firmed up in the IVL in such a way as to respond with adequate flexibility to other developments as well."

- "... the target of 25% use of local public transport only appears to be attainable in the long term if public transport is marketed as a better alternative to cars. Attractive offers must be developed, in particular in the more built-up urban areas because cars are only of limited benefit here and literally get in the way of the development of New Urbanism."

- "In weighing up the advantages and disadvantages of both scenarios, the group of experts recommends that the resident scenario be pursued because the resident potential which is required for the desired development objectives is mobilised more successfully here and, at the same time, outlay on transport grows less."

5

The planning concept

The planning concept behind the IVL represents a spatial structure, covering both the development scenarios and the transport scenarios compatibly with the area in question. The planning concept for the whole country is supplemented by the description of six areas of in-depth analysis. The concept is based on the differentiated application of the principles of urban, transport and open-space development, which have previously been mentioned as targets in the scenarios:

Polycentricity and complementary relationship between urban and rural regions

In the future, spatial development should be geared more towards a polycentric spatial structure by above-average development of the central places. In the event of a high growth in population (resident scenario), the IVL proposes new central places in addition to those already identified in the Programme Directeur. The close proximity between centres and rural areas enables Luxembourg residents to develop very different lifestyles. Care must be taken to ensure that a home/work balance is developed in all parts of the country.

Higher building density and urban concentration

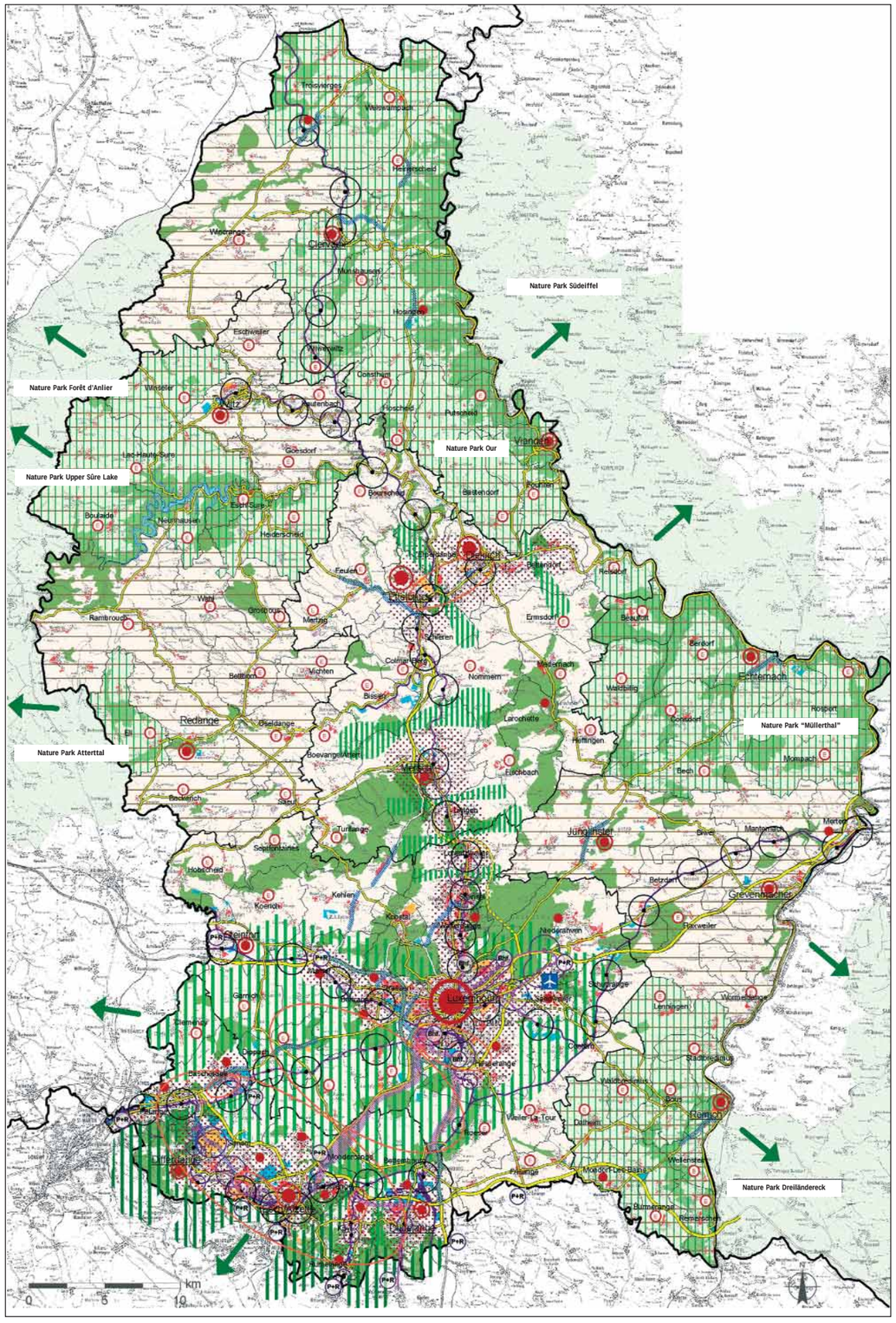
As the density of housing and commercial land in Luxembourg is relatively low, greater housing densities must be achieved on new-build areas by means of high-quality, attractively condensed forms of living accommodation, innovative commercial land management (business parks) and in existing building stock through re-condensing and selective re-use, as well as land recycling. More compact forms of housing instead of arranging buildings along a main street, which was previously the practice, and the consideration for attractive pedestrian and cycle paths already during the planning-phase will contribute to the use of environmentally friendly modes of transport for short journeys instead of using cars.

Bringing settlement development and local public transport closer

During the development of new building sites and activities for inner development, favourable access to local public transport (especially the rail network) is an important planning criterion for supporting the IVL's objective to promote public transport. Train-tram systems should be expanded in urban development areas in addition to classical railways. Urban development and the expansion of the train-tram network should be coupled in order to reinforce the desired priority of local public transport right from the off. This will enable housing to be developed more compatibly and enable more efficient use to be made of local public transport capacity in particular.

New urbanism

By steering the growth of housing and jobs, in particular in urban areas, this will create the requisite "critical mass" to facilitate an attractive local public transport service. By promoting diversity of choice in terms of economic, social, sporting and cultural opportunities, this creates a new urbanism which is important both to the residents of Luxembourg and to Luxembourg's profile within Europe.



Concept

Landscape- and environmental compatibility

The approach taken in the IVL is fundamentally geared towards spatially compatible development, encompassing landscape compatibility as well. On the one hand, landscape is a potential asset in terms of both natural resources and aesthetic values and, on the other hand, also offers developmental potential for exploiting the economic and cultural basis of each region. This approach applies in addition to the legally prescribed environmental impact assessments, it does not supersede them!

Diversity of regions - differentiated development objectives and courses of actions

The IVL proposes differentiated development objectives and measures for the different areas within Luxembourg.

The international experts on regionally differentiated development:

● "In line with the IVL, the group of experts recommends a decentralised regional development concept which, in terms of its response, differentiates between the rural regions, the "Nordstad" which has still to be developed, the settlement development in the Alzette Valley which is to be coordinated with the development of the railways, the urbanisation in Luxembourg city and its commuter belt and a South region which has been developing for many years and decades."

Rural regions as a separate type of development

The rural regions should be developed as areas with a separate identity, high quality of life and independent functions. The essential areas of action in these regions are moderate growth in residents through the villages' intrinsic development, strengthening the regional centres through selective promotion of the infrastructure and improving the quality of jobs on offer through diversification.

Intrinsic development means that the town should not grow primarily by having people move in from outside, but rather optimising the range of facilities available for the existing population and their children, as well as to make use of existing building stock through quality growth.

Good access to the rail network is a central requirement for sustainable development of the rural regions. Therefore, the bus network should be linked to the rail network at central nodes and be incorporated into an integrated timetables. In addition, there are plans to reduce the volumes of traffic passing through smaller rural towns.

A programme of settlement development which respects the landscape, as well as the creation of a balanced package of social infrastructure should be initiated through innovative pilot projects, e.g. restoring former farm buildings for residential purposes.

Key

Spatial focus
- Higher order central place
- Medium order central place
- Regional centre
- Additional central place in the resident scenario
- Intrinsic development

Development areas
- Urban development region with integrated open spaces
- Region-specific development

PAG and PAP-potential areas
- Housing land
- Commercial land
- Mixed-use land
- Other land

Individual transport
- Existing: Motorway / Express way
- Existing: A-roads
- Road layout under construction or newly opened
- Measures to reduce the traffic passing through towns and corridors to reinforce critical sections of routes (subject to undergoing an environmental impact assessment and the precise definition of the course of the route)

Public transport
- Existing: Rail
- Existing: A-roads
- Expansion planning at an advanced stage
- Corridor for rail transport measures (subject to undergoing an environmental impact assessment and the precise definition of the course of the route)
- Park & Ride facility
- Rail changeover terminal

Individual transport
- Existing: with a 1000 m radius
- Newly planned with a 1000 m radius
- New planned Train-Tram with a 500 m-radius

Green areas
- Green belt
- Green wedges
- Dogger level
- Nature parks in Luxembourg (Existing and planned)
- Nature parks in neighbouring countries (Existing and planned)
- Habitat areas, bird and nature reserves
- Cross-border green corridors

Other
- Areas for key projects

Cooperation between local authorities is imperative in order to ensure that work is divided between the individual areas of the rural region. This should be based and promoted selectively on the basis of the specific suitability of the locations and spatial potentials. The nature park concept should be expanded within this concept as a source of incentive and as a development instrument. In addition, the efficiency of the nature parks should be bolstered through cooperation at national and cross-border level.

The international experts recommend the following

- "Support in the organisation of regional forums on the problems and development ideas relating to the rural region in order to promote the general exchange of views about the rural region and in order to integrate local expertise into the finalising of the strategy."

The agglomeration of Luxembourg City, the Alzette Valley and the South region as complementary regions: the "landscape city"

The expression "landscape city" was coined in the IVL process to characterise the central development region within the country. Taking in the South region, the green belt, Greater Luxembourg and the Alzette Valley, it comprises built-up areas with green areas and open space in-between.

The "Zone Verte Interurbaine" regional park

The green belt between the conurbations of the South region and the agglomeration of Luxembourg City plays an important role as an area for rest and recreation; this role must be safeguarded and developed. For this reason a regional park should be created. A regional park is an area of landscape within the conurbation; it is used for farming, as a recreational facility and to safeguard the aesthetic qualities of the landscape. As these factors overlap and, to some degree, clash with one another as a result of the overlapping burden of use, careful planning, good accessibility, the availability of paths and facilities for recreational use and information about the culture and history of the region, as well as the shielding of some areas for the preservation of nature and the landscape are imperative. Since a regional park within the conurbation is surrounded by areas of housing, it is vital that there is cooperation between the various local authorities on its development.

The South region

The built-up South region offers special potential for condensing in conjunction with the existing rail infrastructure. As a complementary development region to the agglomeration of Luxembourg City, the population and job market should be developed more intensely in the south. The brown-field conversion land there offers great potential for development, whereby further housing land should be developed in the medium to long term. The " development of the brownfield site "Belval-Ouest" is lined up as a central project for this development; according to the IVL, it should be developed as a matter of priority.

Developing the rail network in combination with settlement close to the local public transport network will improve the conditions for developing the South region further. The IVL presupposes using the classical rail system for international links and for connections to Luxembourg City and using the train-tram system for opening up the inter-regional network. From the perspective of the IVL, the A13 should continue to serve as a main arterial route for the region.

Luxembourg City and conurbation

Luxembourg City needs to be of a certain size in order to count itself as a major European centre to live and work in. Therefore, it needs to see an increase in resident numbers, in particular, but also see an improvement in terms of the quality of jobs on offer, i.e. high-grade urban construction and jobs in the service sector.

In this regard, special importance is attached to the southwest of Luxembourg City where there is lots of potential land available for housing and employment. Suitable concepts should enhance the objective of mixed use. The land to the southwest of Luxembourg City should also be mobilised simultaneously and progressively with the priorities of spatial development on the national level and the target to strengthen the role of other regional centers. In order to safeguard a complementary development of the city and its surroundings, the development of the area to the southwest of Luxembourg City should be coordinated with the towns in the surrounding area and in line with the possibilities for exploiting the land potential shown there.

The expansion of the local public transport infrastructure should be supported, in particular, by increased coupling of the train-tram system and housing development, as well as by measures such as parking area management and mobility management in order to optimise the use of public transport. A six-lane expansion of the "Boulevard de Contournement" should strengthen the capacity of the road network, which is already heavily congested at present.

Alzette Valley

Important characteristics of the Alzette Valley are its typical valley topography, the ribbons of settlement development and the good connections to the rail network. Since there is not only to be a railway network, but also a train-tram system with a higher density of stops, settlement development should be promoted, in particular, within the commuter belts of existing and additional stops through inner development and condensed building. From a transport perspective, there should not be any intensive settlement development undertaken away from the specified commuter belts in order to avoid excessive volumes of transport and the traffic burden that this would involve. It is particularly important to keep the green wedges between the towns clear in order to prevent the areas of housing, which are already close together, from merging and thus to encourage an attractive, diverse settlement and landscape pattern.

The international experts have identified the possibility

- "... of developing the agglomeration of Luxembourg City, the Alzette Valley from Walferdange to Mersch, the South region and the open spaces between them as a daily urban system (living - working - education - relaxation), inclusive its green corridors."

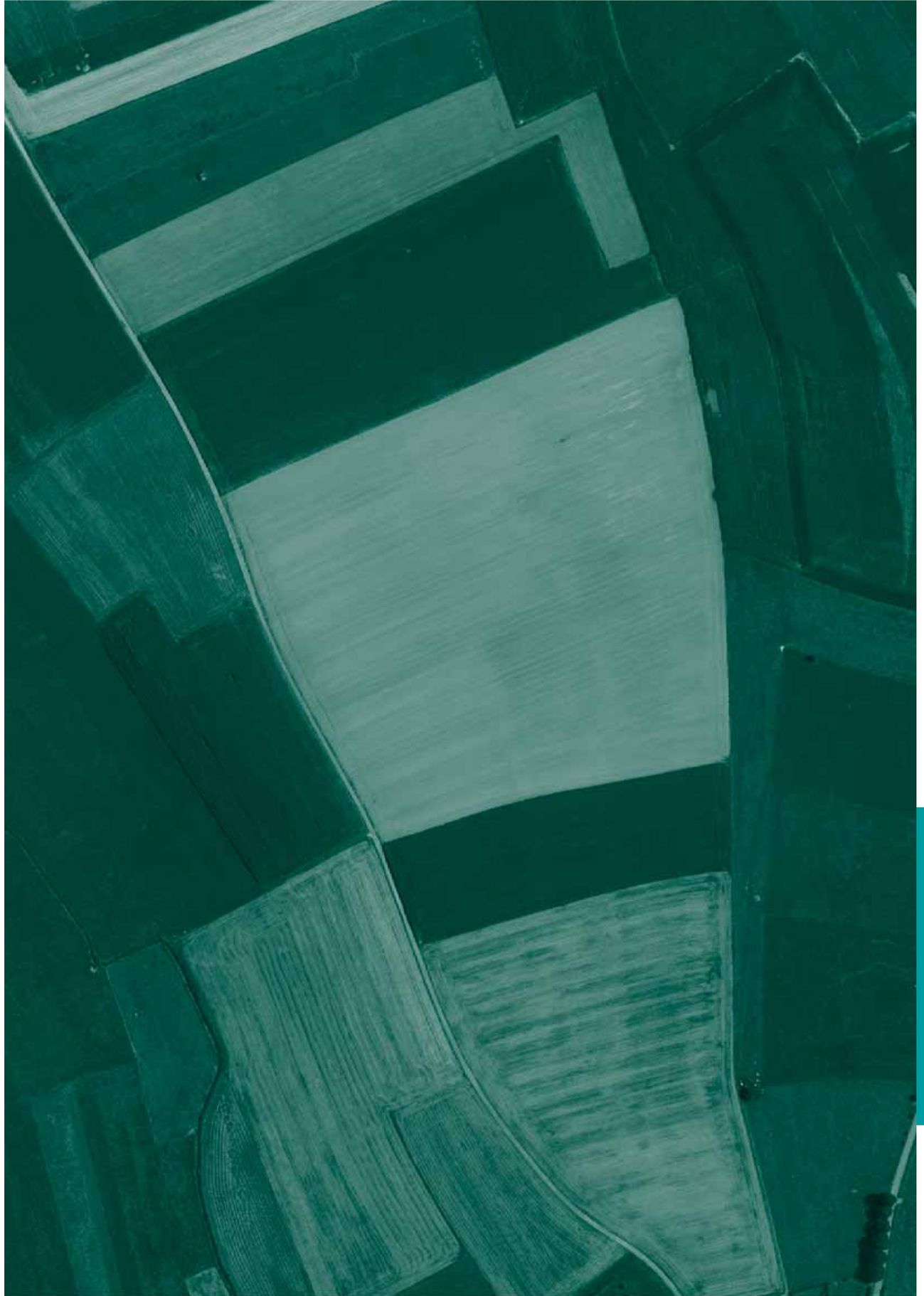
"Nordstad" as a service centre within the rural region

Nordstad should be upgraded as a centre for the north and, therefore, be developed both in terms of size and quality of services. Given "Nordstad's" confined valley location, higher building densities will be required in the future, as well as the mobilisation of land in the inner zone. Further measures, such as developing a slope or plateau, should only be implemented if it is likely that the resident scenario will be followed. Particular attention will be given to preserving the landscape and opening up the local public transport system. As a central requirement for future decision-making in terms of spatial and transport development in "Nordstad", the IVL proposes drawing up a "Nordstad Development Plan". In this context it is also important to identify the qualities which should and can be promoted in Nordstad to enable it to take on the role which is earmarked for it.

The international experts recommend:

- "Strengthening Nordstad's central position on the basis of its specific potential, requirements and opportunities by providing assistance in compiling an inter-community development plan"

- "Setting up an association of local authorities for planning and implementing the measures"



Implementing a concept as complex as the IVL is very challenging. Therefore, a package of measures and instruments needs to be employed, and the measures need to be phased in according to the development dynamics.

More concrete plans

Planning measures represent one approach to the implementation of the IVL. They include, for example, regional and sectorial plans which can be used to incorporate or implement the findings from the IVL into deliberations on regional and municipal projects. As regards the sectorial plans, the IVL recommends that they be compiled in the areas of "Transport", "Housing", "Landscape" and "Industrial and commercial zones". Regional plans should be compiled as a matter of priority in the regions with a strong need for steering and coordination , i.e. the South and the Centre-South regions.

Implementing key projects

Over and beyond these planning measures, it is recommended that concrete key projects be carried out. They are projects which are devised for individual part areas and contain innovative concepts for showcasing exemplary developments in spatial, transport and landscape planning and which, thus, inspire follow-on projects. The following key projects are proposed in the IVL:

- the development in the area to the southwest of Luxembourg city on the basis of an interactive planning process
- a new residential area in the South built close to the local public transport network
- the regional park for the creation of the "Zone Verte Interurbaine"
- the Nordstad development plan
- the implementation of region-specific measures in rural regions, such as using farm buildings for new purposes
- differentiated projects for inner development in rural and urban areas.

Introduction of new and adaptation of existing instruments

Support measures (such as housing construction support, economic development support) should be used as incentives for specific projects which serve to implement the objectives of the IVL. The support measures should be designed to back the regional focus of the IVL, in particular.

Under the term "land management" instruments and measures should be created which promote land mobilisation, which facilitate the re-zoning of any unsuitable land and which support the identification and exploitation of potential for inner development (e.g. register of gaps between buildings).

6

The implementation

As far as regulatory measures are concerned, the reform of the system of municipal land use planning has to be concluded with the creation of new instruments, such as the introduction of a building obligation and the definition of development, restructuring or regeneration areas. In the area of parking space management, it is recommended that parking regulations be introduced nationwide which are coordinated with the development of the local public transport network.

In order to develop common projects and to better coordinate national, regional and local planning activities , the instrument proposed in the Programme Directeur, i.e. the "Contrat de développement", should be developed.

A nationwide system of mobility management should help to coordinate the services being offered by local transport operators, as well as to coordinate the bundling of demand (e.g. through the introduction of job tickets). A Mobility Centre will offer people advice, for example, on using different, environmentally friendly transport services or to promote car pooling.

Steering of planning and development processes

The implementation of the objectives which are set out in the Programme Directeur with the aid of the principles and concepts developed in the IVL requires departments which are involved in spatial, transport and landscape planning not only to extend the scope of their own competence and orientation, but also to develop the culture of planning further with regard to cooperation and consultation. This should be implemented within the scope of process management, e.g. through awareness strategies and suitable communication policy, through modernisation of local authority structures, through the continuous coordination of the planning process, as well as through process monitoring.

The implementation of the IVL requires the development steps to be phased in, in particular. They must be defined in such a way that the overall system is guaranteed to function properly at any point in time, even if developments slow down or are postponed on account of the economic situation. This is vital for a robust concept. This enables the different interests in and demands on the region to be coordinated in a creative, open and competent manner.

Ministries involved:

Ministry of the Interior and Spatial development
Ministry of Transport
Ministry of Public Works
Ministry of the Environment
Ministry of Economic Affairs and Foreign Commerce
Ministry for Middle-Class Enterprises, Tourism and Housing

Planning team:

Albert Speer & Partner GmbH

R+T Topp Skoupil Küchler and Partner

L.A.U.B.
Gesellschaft für Landschaftsanalyse und Umweltbewertung mbH

Editorial and layout work on the brochure:

Ministry of the Interior and Spatial Development (DATer)
Dipl.-Ing. Ursula Stein, Office for Regional Planning and Communication
Context s.à.r.l., communication management

Information:

www.ivl.public.lu

Contact:

Ministère de l'Intérieur et de l'Aménagement du Territoire
Direction de l'Aménagement du Territoire
M. Philippe Peters
478 69 24
ivl@mat.etat.lu

Orthophotos:

German edition: 2004
English translation: 2005

www.ivl.public.lu

Présidence luxembourgeoise du Conseil de l'Union européenne

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG