



Tomorrow's Luxembourg

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1) Introduction

This programme is the outcome of joint work by researchers and representatives of research organisations in Luxembourg who – during a call from the Fonds National de la Recherche [National Research Fund] – submitted their proposals at the beginning of 2001 for the Fund's future research programmes in various fields of analysis relating to society in Luxembourg.

The Fund encouraged those submitting proposals to draw up a single research programme from these various proposals. Prior to final drafting, the Fund asked outside experts for their opinion on the draft text and, taking account of their opinions, now puts forward a programme called “Tomorrow's Luxembourg”.

The programme will help to **draw together the future research projects** financed by the Fund: during calls, the Fund will encourage a number of national players to work together and to organise regular meetings and round tables with international experts on the themes chosen.

The programme has both an applied research and a pure research strand. The aim is to use original methods and approaches to gain a new knowledge of the transitions of our society from the past to the present and the future. The findings of some research projects could also help to fill some of the gaps in the research programmes of the OECD and the European Commission; Luxembourg is too often left out of comparative studies because data are not available or because there are no scientific publications shedding light on the particular features of a small and highly integrated economy.

Future research projects will obviously not be able to address all the topics for discussion. They should, however, make it possible to provide knowledge of and answers or strategies for a large proportion of these topics. The purpose of the programme is to promote **research focusing on the future of Luxembourg society**. Research projects should therefore concentrate **largely on forward analysis**, drawing conclusions from the analysis and research work conducted.

2) Detailed description: “Tomorrow’s Luxembourg”

Over the last thirty years, there have been major changes in various areas (society, demography, identity, culture, education, economics, law, politics, spatial planning, etc.) in the Grand Duchy of Luxembourg. According to a number of indices, the changes under way could bring about even more radical changes in future decades.

Against this backcloth, this programme sets out priority strands for research in the social, economic and human sciences in order better to apprehend the challenges that our country and our society will have to face.

It will be important to develop suitable research instruments, which often do not exist, to analyse where Luxembourg stands as regards the questions that arise, only some of which are listed below:

- How can Luxembourg’s small area be planned to cope with major demographic growth and to promote sustainable socio-economic development, taking account of the cross-border context?
- How can Luxembourg’s identity be defined today and in the future in a context of integration of non-Luxembourg nationals living in the country? To what extent are we making multilingualism and the co-existence of very different cultures into an asset for our country?
- What human challenges will we face? On what values should we build our future to ensure a place for all the members making up our society now and in the future? What role do or could the individual, the family, the state, as well as the players in economic and social life, play in this context?
- How can we use and develop the new technologies, including information and communication technologies, so that they are of service to us? What changes will be needed as we gradually move towards a knowledge society?
- What are the strengths and weaknesses of our education and training pathways and of our human resources’ development, and to what extent will these pathways and developments need to be adapted?
- What are the genuine economic and social features of Luxembourg and to what extent could political harmonisation at European level and the globalisation of trade change our current structures and institutions? What framework will our economy need if it is to develop in a sustainable way? What infrastructure will the country need to be able to cope with such developments? What added value will be provided by a varied cultural output?
- What will be the prime movers of Luxembourg’s economic development in forthcoming decades? How can the economic fabric be diversified? How can new branches, sectors and niches be created? What is the scope of the concept of “native economic growth” set out in the Government programme? What does the concept of competitiveness and its measurement mean in a small open economy? How can the impact of a policy of development and economic diversification be evaluated?

These questions are not exhaustive; they are discussed in further detail in the various research strands envisaged. Most of these questions are also topical in other countries, but this programme will look as far as possible at the **particular problems that these questions raise for Luxembourg** and, although an analysis of the past and the present will obviously be necessary, will place the emphasis on looking for **options and strategies for the future**.

As far as possible, research projects should be interdisciplinary and should also take account of the following cross-cutting dimensions: the transnational dimension, the gender dimension, the ethical dimension, the cultural dimension, the spatial dimension and the temporal dimension.

The programme's main strands:

Strand 1: Population trends in Luxembourg

Two key aspects will need to be examined by research into the socio-demographic dimension of Luxembourg society:

1. Social cohesion and integration, ageing, infancy and youth, family, social inclusion

The demographic transition currently taking place in our society is characterised by various developments that need to be studied in detail:

- **The substantial growth of the population** whatever the scenario adopted:
On 1 January 2001, Luxembourg had 441 300 inhabitants, 164 700 of whom were not Luxembourg nationals. Luxembourg is facing a very marked demographic progression, i.e. 12.8% over the next ten years (+56 900 inhabitants including 54 700 non-Luxembourg nationals). Fields for analysis here are, for instance, immigration and its origins, impact and trends, the integration of non-Luxembourg nationals, the geographical distribution of the population and regional differences, the mobility of Luxembourg and non-Luxembourg nationals and the efficiency of policy measures.
- **The demographic ageing** which has already started in Luxembourg's population. It is important to take stock of and to analyse:
 - * all the mechanisms underlying this ageing process (the position of the very elderly needing support from the population, the transition from a system combining high death and birth rates to a system combining low death and birth rates);
 - * the main changes that this process is already bringing about in the social system, which will become even more marked in the future (impact of a change in the age structure on labour market organisation and on all areas of day-to-day collective life, the social security system and threats to its financing, the pace at which competences are being renewed and extended, elderly people's participation in society).
- The dwindling size of the demographic base, i.e. children and young people, which is another aspect of the "ageing" process, but raises quite different questions. Situations where we know very little about the particular problems and needs of children and young people are increasingly common. This is likely to become even worse if there is an increase in the proportion of childless households. What impact will the "minoritisation" that is under way have on life tomorrow?
- **The disintegration of family structures**, which nevertheless continue to be the main places in which solidarity between the generations can be learnt and practised, and the shift towards new ways of living together.

The strengths and weaknesses of our family system and, in particular, its capacity to pass on values, i.e. "invisible" forms of human and social capital, to subsequent generations need to be examined here.

- **Maintaining well-being and the threat of poverty:** how, in a context of strong demographic growth, can the well-being of the population as a whole be maintained or improved? Is violence a problem in Luxembourg, in a context of social upheaval, opening

up of borders and increased population numbers? What multi-dimensional factors are generating poverty and social exclusion? What effects are social welfare payments and other measures to promote social inclusion having? The effectiveness of other countries' models will need to be examined here so that national conclusions can be drawn.

2. Identity, interculturalism and multilingualism

With the enlargement of Europe, migratory movements from the various Member States to Luxembourg will undoubtedly increase. This is already raising the question of Luxembourg's identity and how it can be defined. The problem of defining an "us" in a world which is becoming more like a global village will undoubtedly become more difficult in future decades. The regional and the national are proving inadequate in comparison with the global, which is permeating all spheres of our society. It does not seem possible at present, however, to define identity other than at a national level, since people are finding it difficult to perceive their identity in global terms, even though this level is essential from a functional point of view. This **identity dilemma** needs to be examined, while at the same time exploring **the potential of cultural pluralism**.

More so than for other countries of Western Europe, finding a way of defining a collective identity which rallies people together in the present (around the monarchy, the constitution, a shared ethic, for instance) and which is open to the future will be an absolute necessity for social cohesion in Luxembourg. Any attempt to resolve this vital question for our country will necessarily have to take a multi-layered approach:

- An analysis of the evolution of Luxembourg society over time. The fundamental problems of integration currently facing our society cannot be discussed without a detailed knowledge of how this Luxembourg society has come about and the **elements that make up its identity and memory**. Do the **main stages of Luxembourg's historical development** have features distinguishing them from other communities' development, and do they have features in common with other communities? What role are men and women, and family structures, called upon to play? How have values and value systems developed in Luxembourg society?
- An analysis of the current situation and the positive and negative factors currently at work in Luxembourg society from the point of view of integration and the development of **individual** (men and women) and **social identity** (nation, ethnic community, peer group). In this respect, two factors need to be examined in depth to find out more about Luxembourg's future prospects: the role that the school system plays in developing identity and social cohesion, and the use of languages – Luxembourgish, French, German and English, as well as Portuguese and the languages of the other foreign communities – at school, at work and in society as a whole.
- An analysis of the **cultural expression of Luxembourg society**. Luxembourg society expresses itself in particular through its cultural output: literature, theatre, painting, plastic arts, music, photography, cinema. Luxembourg's multilingual literature is a typical case study. It is not really conceivable outside its social context. The written word and writing are nevertheless an important social reality. Literary writing reflects the ways in which the identity of a small national area with no real metropolitan and cultural centre is constructed. Studying national literature is a very good way of linking up the overall field of analysis as it opens up a specific area of research located at the crossroads between traditional disciplines.

- An analysis of **religion** in Luxembourg society and the ways in which religion has shaped, is shaping and is likely to shape people's behaviour.

Strand 2: Developing human capital

Human capital and social capital are key and essential elements of all the possible development scenarios for Luxembourg's socio-economic and socio-cultural system. While this research strand focuses as a priority on the development of human capital, research projects could also look at the implications for social and cultural capital development in the fields in question.

The main areas to be studied in this strand are as follows:

1. Better knowledge of human capital

What factors are shaping human capital development in Luxembourg and in the *Grande Région*¹? Luxembourg is calling upon a growing number of cross-border workers. What role is the *Grande Région* playing now, and what role will it play in the future, as the main supplier of human capital for the private sector? How far could/should this go? What qualifications do people living in the country possess? What mechanisms influence people's education choices? How can those institutions offering education and training services bring their training schemes into line with new needs? What are the strengths and weaknesses of the Luxembourg education system? What other factors play a part in forming human capital?

Expected findings under this strand of the programme should help:

- to inform us about the current and future composition of human capital resources and their quality;
- better to elucidate educational performance;
- better to understand those factors that shape the development of human capital in terms both of individuals and of social groups;
- to draw up a series of indicators describing the "supply" side of human capital;
- to enhance the description of the organisation, operation and financing of the education system;
- to provide the basic information needed to construct a system of indicators able to evaluate the quality of education and of initial and continuing training.

The main issue is undoubtedly the construction of a **learning society** which, by placing lifelong learning on a concrete footing, will ease the successful transition to a knowledge economy. This does not just mean that individuals have to adapt to change, but also that systems and procedures have to be modified so that they are better geared to individuals' needs.

If it is to steer the changes required in this respect in an optimum way, Luxembourg will need to use a **system of high-quality indicators** for its **education system** which also draws on the comparative research taking place, for instance, in the OECD's PISA research project. Luxembourg's participation in this kind of international cooperation requires, among other

¹ The *Grande Région* is a cooperation forum among the regions of Saarland, Lorraine, Luxembourg, Rhineland-Palatinate, Wallonia and the French and German-speaking Communities of Belgium.

things, an efficient research fabric through which the many problems raised by method development can be resolved and pertinent analyses can be drawn up from comparisons.

Education aside, research to measure the quality of human capital should also include a measurement of the **competences acquired**. Such research could take a national and/or a comparative approach.

In this context, **performance** needs to be examined in a more comprehensive and global way to take account of dimensions such as, on the one hand, the cost of training and, on the other hand, pay levels, job security, professional status and other accepted indicators of success.

Aspects of **social exclusion/inclusion** and **equal opportunities**, both in education and training and in the labour market, also need to be examined. Are there ways of improving the starting circumstances of children and people from disadvantaged social backgrounds who – because they lack resources or for other reasons – have no plans to continue their education or training?

Models to support pupils and students with exceptional gifts or particular talents could also be examined.

This first complex research strand should therefore provide new knowledge of the supply and development of the human capital produced by the education and training system and, more generally, by society, so that the “supply” and “demand” sides of human capital can be compared.

2. Demand for human capital by the socio-economic fabric and interactions between supply and demand

Research in this field should be based on questions such as:

- What kinds of goods and services does the economy produce and what competences are being sought for this purpose?
- What pay structure does the possession of a job offer human capital?
- What importance do employers attach to qualifications acquired at school and what other qualifications play a role?
- What part are entrepreneurs playing in maintaining or improving, or even forming human capital?
- How can initial and continuing education better match demand from the socio-economic fabric?

Relations between supply and demand have to be seen in relation to the specific features of the Luxembourg labour market, one of whose main features is that **the demand for human capital outstrips the supply**. In the past, Luxembourg has been able to offset this surplus demand by calling on foreign human capital. This pool is now reaching its limits – at least as regards cross-border workers – raising the question of the extent to which this surplus demand can be reduced through education and initial and continuing training systems for the resident population that are better geared to market needs.

A proactive immigration policy placing the emphasis on vocational and social skills is another channel to be explored.

In general, the current and future human resource needs of the various sectors of the economy, the qualifications required and the need for ongoing development of specific skills should be examined here so that strategies to improve existing training schemes can be designed.

In this context, analysis should also cover factors that help to increase the **availability of human capital nationally**, for instance an increase in the women's participation rate, which continues to be below the European average. How can family life and work be better reconciled and what roles should men and women be called upon to play here, in both the private and the public sector? Other countries' models need to be analysed here to find out whether they can be applied in Luxembourg.

The answers to these questions should make it possible to:

- document the interactions between economic growth and the need to develop human capital resources;
- guide public policies to improve human capital;
- guide the complementary development of formal and informal education resources in terms of training objectives, trainers' professional development and the design of learning and evaluation environments and tools;
- identify new needs in the areas of infrastructure, social coverage, cultural life and leisure.

Strand 3: The information and communication age and its consequences for society

Making the transition from an industrial society to an information and communication society has been a major challenge for all the industrialised countries, including Luxembourg. There is no doubt that the new information and communication technologies (NICTs) have brought about and will continue to bring about major changes in the functioning of modern societies at almost all levels: economic activities, communication between the members of and players in society, cultural life, forms of work, labour market participation, vocational qualifications required, education system, etc.

1. The information society from the point of view of individuals and enterprises

There is now little question that the economic competitiveness of a society is defined not just in terms of the goods that it produces, but also and in particular in terms of the information and communication sources that it has available, and in terms of the development of specialist human resources able to use, manage and build on these information and communication resources. Instruments to measure and manage intangible assets and to manage knowledge in enterprises could be studied.

Faced with this challenge, the far-reaching changes currently taking place in society must be accompanied by research work to analyse the current situation of the Luxembourg information and communication society. This will make it possible to pinpoint fields where this development is proving problematic or where Luxembourg may start or continue to lag behind other countries. It should also be possible to identify fields that may benefit from Luxembourg's specific situation and which will therefore help Luxembourg to find its place

in the global world of information and communication. This analysis will focus on both daily life and the world of enterprises and will attempt to shed light on the uses to which the NICTs are being put and the circumstances in which they are being used in society, for instance the impact of the NICTs on life organisation (teleworking, tele-medicine, tele-training possibilities, etc.). This analysis should pave the way for proposals for policies of technology and innovation in relation to the information society. This research programme will therefore identify, in general, the challenges raised by the use of the NICTs at a societal level and will propose solutions. It will therefore act as a catalyst for the introduction of technological tools into daily life and into enterprises.

2. Using the NICTs as a subject of and a medium for initial and continuing training

One of the main challenges that Luxembourg, like other countries, faces is the need to ensure that all members of society have access to the NICTs and that the mass introduction of the NICTs does not exclude people because they are unable to use this technology. This latter consideration has major consequences for initial and continuing training, which have a key role to play in preparing all members of society for the information and communication age.

Today's world of information and communication is a world of flexibility, ongoing innovation and teamwork. In this world, the focus of education cannot be merely to adapt to what has already happened or already exists, but to adapt to different learning situations and social forms of cooperation. It is these creative and innovative abilities, rather than rote learning, which education in the 21st century needs to develop among students. It is becoming increasingly clear nowadays that this new learning culture uses technological tools as its main working medium and that the efficient use of these technological tools has become an important cultural technique supplementing those which already exist.

A change of paradigm similar to that described for initial training needs to take place in vocational and continuing training. Here, enterprises and trade union and employers' organisations have a key role to play. Continuing training has to take place in a context of lifelong learning: this means that it has to be part and parcel of any vocational course. It includes the NICTs as a subject of and a medium for training. The main challenge for continuing training is to create a provision that is genuinely open to all members of society, especially those temporarily absent from the work of work in order, for instance, to bring up children. If these people are currently finding it difficult to regain their place in the labour market, this will become even more difficult in the future when technological advances will increase the pace of change in the workplace. Every continuing training scheme should therefore include bridges enabling the participation of people temporarily away from the labour market. In this context, it is also very important to prevent the NICTs from triggering new disadvantages specific to women, who are most likely to lack technological training as a result of temporary breaks from work.

This programme will therefore develop research projects leading to practical experiments with the NICTs in the context of initial and continuing training. The aim, as regards the use of the NICTs as a training medium, is to develop and scientifically evaluate tools such as distance learning platforms, interactive and personalised training tools or new tools for computer-aided evaluation of learning. These tools are to be developed taking account of the specific context in Luxembourg and will therefore endeavour to match the qualification needs identified as priorities in initial and/or continuing training. The aim, as regards the NICTs as a subject of training, will be to try to pinpoint competences that can be transferred to technological

advances in the future and to avoid training contents that are too specifically targeted and focus too heavily on specific technological tools. Training with a content of this type should help to provide qualifications with a longer shelf life and to enable people temporarily absent from the labour market to return to continuing training. The questions raised by the NICTs as subjects of and mediums for training are closely linked. The programme will therefore try to draw up new NICT-based training models that provide, at the same time, training in the NICTs through their use.

Strand 4: The place of a small country in the *Grande Région*, the European Union and a globalised world

Luxembourg is part of the Western European political area. It has supported European integration from the outset. The globalisation of the economy, together with the enlargement of the European Union, now seems substantially to be reducing Luxembourg's influence in the international arena.

What impact will globalisation have on the current structures of the economic, political and cultural landscape in Luxembourg?

This research strand is geared, for instance, towards finding out what role the current pillars of the Luxembourg economy, especially industrial enterprises, are playing and will play in the future.

The potential that globalisation offers for a small country with a small-scale economy also needs to be examined. Backward-looking and pessimistic views have meant that this aspect has been largely neglected up to now. A different interpretation is nevertheless possible: globalisation may not be the annihilator of human diversity so heralded and criticised by so many people. From an economic point of view, one of the features of globalisation (among others, and simplifying) is the replacement of the Fordist model of mass production, based on a linear, hierarchical and standardised vision of production, by a flexible model where the design and manufacture of a product are no longer separate, and which is based more on teamwork, ongoing innovation and enterprise organisation based on the just-in-time principle. Analysis here should focus on finding out whether flexible production is likely in the long term to bring about a relocation of production and service activities, as is often said, or rather a regionalisation of production networks and an increase in the power of small and medium-sized enterprises. The impact of this development on Luxembourg needs to be measured, as Luxembourg has a major local market in the *Grande Région*, and priority access to the German, French and Benelux markets. **What role is Luxembourg called upon to play in the *Grande Région*?** Is this merely the role of an “economic prime mover” or does the Grand Duchy take this further by acting as a “prime mover of cross-border cooperation”? To what extent should and could these two aspects complement one another?

The spread of flexible production is enhancing innovation, qualifications and expertise. As a result, it is also making markets more competitive. To what extent can the **potential loss of comparative competitive edge** – currently presaged for instance by the restructuring of the financial sector – be **prevented**? Over the last few decades, the latter has become the leading sector of the Luxembourg economy and provides by far the largest proportion of state

resources. The relative precariousness of the financial industry is partly due to the problems raised by its vertiginous growth in recent years (raising problems of human resources in particular) and partly due to the rapid changes in the economic, legal and political environment in which it has developed (calling into question of banking secrecy, concentrations and mergers moving decision-making centres abroad, etc.). If these potential risks were to cause the financial sector to decline at some point in the future, there is no doubt that it would be impossible, in the medium term, to withstand such a decline without a highly detrimental impact on the population's well-being and state resources. However, despite this potentially very serious threat, we do not at present know enough about those factors likely to have a positive or negative impact on the development of the financial sector in Luxembourg. It is therefore necessary accurately to assess the main challenges that it is facing today: economic, political, legal, human, technological and ethical challenges.

Analysis of challenges

- **Economic challenges:** the problem is largely one of measuring the impact of the globalisation of financial markets and their gradual integration at European level on Luxembourg's financial market and of assessing the effect of concentrations of credit institutions, investment enterprises and insurance companies on the players located in our country.
- **Political challenges:** the challenge to be examined is largely one of finding out whether it will be possible in the future to continue to defend an industry that enjoys particular advantages in a European and international context that is not very conducive to privileged situations and to pinpoint the arguments by which these interests can be best defended.

The impact of the European Union's enlargement programme on Luxembourg's room for manoeuvre is an interesting point for examination here.

- **Legal challenges:** as the spectacular rise of the financial market has been shaped to some extent by certain legal advantages, the situation of the global legal environment surrounding the financial industry needs to be examined in detail. Research should in particular endeavour to evaluate the performance of the various standards involved, especially as regards the ways in which they are applied and interpreted and in comparison with the standards applied abroad. This research should also look in detail at the foreseeable consequences of a progressive harmonisation of the legal environment at Community level and endeavour to guide the Luxembourg government in putting forward better policies for this sector.
- **Human challenges:** it is becoming apparent that the financial sector is already suffering from a shortage of skilled human resources. Analyses should therefore look, among other things, at potential strategies to bring additional human resources into the sector and to develop the specific expertise required by the financial industry in an ongoing way.
- **Technological challenges:** analyses should focus on the opportunities and risks entailed by an increasingly large-scale introduction of the NICTs into dealings both with customers and between financial sector practitioners.
- **Ethical challenges:** as the financial market is often challenged by other markets and competitive interests, it needs to be guided by ethical mechanisms. This research could lead to the formulation of ethical criteria against which economic and financial policies and practices can be evaluated.

Looking to the future

- **Drawing up development scenarios**

The picture provided by research into the challenges facing the financial market could be used as a starting point for drawing up different potential development scenarios building on those drawn up just before the adoption of Economic and Monetary Union. These forecasts should take account, in particular, of the possible elimination of banking secrecy and the strategies to be adopted in such a case. They could also look at development prospects for the pensions fund market and the boom in electronic commerce in the financial field.

- **Finding new niche activities and pinpointing the conditions in which they can be put to use from an economic and financial, as well as a political, technological, legal and human, point of view**

Research should endeavour to discover new sectors of activity and in particular new niches towards which the market players should gradually move part of their business. It should try to establish the conditions likely to foster the development of these markets or niches from the Luxembourg financial market by outlining, in particular, the financial, economic and legal context best suited to such development. It should look, lastly, at the impact of a diversification of some activities into more profitable sectors.

- **General modernisation of the legislative and regulatory infrastructure of the financial market**

As many of the standards governing the players and in particular the activities of the financial market are very old, thinking is needed about all those activities whose modernisation is now vital. Research should endeavour to pinpoint the particular channels through which this modernisation should be undertaken and draw up, where appropriate, the standards to be adopted.

Over and above the financial sector, where such a development is a very important issue, the development of all the economic sectors may well depend on a forward-looking policy to make products and services “made in Luxembourg” more competitive. New niche areas actively need to be sought. The programme should determine whether new sectors – along the lines of the media and satellite communications – can be set up in Luxembourg and integrated into the economic and social fabric.

The Luxembourg economy has boomed as a result of a policy of “niches” based on its sovereign power. Scope for manoeuvre is tending, however, to shrink. To ensure effective development, the potential impact of “creating” a comparative edge in the fields specific to a small-scale economy should be analysed. Proximity and therefore the speed of information flows and/or decision-making could be one avenue. The real advantages of this particular feature and the role of the state should be explored.

The **European social model** is based on the principle of economic and social cohesion, in other words the dynamic virtues of the market economy are closely linked with the collective guarantees of the welfare state. The relative decline in the economic importance of a region such as Western Europe in the world does not mean the end of European economic growth or the end of the social model which is its corollary. However, efforts are now being made to combine economic modernisation and social justice. Trade unionists, employers and politicians are thinking jointly at a European level about the introduction of a principle

stepping up the responsibility of beneficiaries of social protection, in fields such as unemployment, social welfare, health and old-age insurance.

As the survival of social protection systems depends on this, conducting research into the prospects of the **past, present and future “Luxembourg social model”** will be paramount, starting from a comparative approach that looks at the problems from a Europe-wide point of view. Where does Luxembourg stand in this debate? During the 20th century, Luxembourg developed an original social model combining political democracy and social democracy. Social dialogue was placed on an institutional footing within this model. The public authorities created a political space for intermediary bodies and involved them closely in decision-making in economic and social areas. This process was completed at the end of the 1970s with the introduction of the “Luxembourg model”. The origins of this model need to be analysed and any adjustments that may be necessary evaluated. Adjusting to new economic players – is a model devised in the industrial society relevant in an information and communication society? Adjusting to new socio-political players with the appearance of many civil society organisations alongside the social partners. Adjusting to increased parental and occupational parity between men and women. What measures are being and could be envisaged to adjust the Luxembourg social model in the light of challenges such as employment and poverty traps? What scenarios are envisaged from the point of view of financing and future benefits? In comparative terms, how is the Luxembourg social model performing in (macro-)economic terms and how can “macro-economic” dialogue between the partners involved be placed on a practical footing?

Globalisation is going together with a decentralisation of authority throughout the world, and within continents, regions and nations. The pluralisation of the world is being reflected by the installation of a four-tier power structure: state and political world – market and economic players – civil society players – media. The interaction between these four tiers needs to be analysed as well as potential options for the future. What **model(s) of governance** can be envisaged for Luxembourg?

Strand 5: Spatial organisation

The globalisation of the economy will have major medium- and long-term consequences on **spatial organisation**. Research into the spread of transport networks, the effects of growing urbanisation, and other aspects bringing about a gradual human occupation of natural environments is now needed to ensure sustainable development. Current spatial organisation already bears the mark of many developments brought about by the socio-economic changes of past centuries (industrial revolution, post-war economic boom, etc.).

Research into changes in types of land use should make it possible, for instance, to quantify the impact of socio-economic changes on the structural organisation of space and to provide valuable information for planning purposes, especially from the point of view of the problem of the consumption of space, the balance between the country’s regions and relations with the *Grande Région*.

At national level, the distribution of industrial, commercial, residential and other zones could be analysed in detail.

Research should cover, *inter alia*, the links between demographic developments, migratory flows and planning – how, for instance, can the housing needs of future generations be met? Where and how can the construction of new buildings be planned? Where and how can existing housing be adapted? How can (cross-border and national) commuter flows be regulated?

In parallel, research could also cover relations between industrial and economic development and planning. What economic infrastructure, for instance, will be needed in the future?

Long-term planning of public and in particular social infrastructure (for instance preschool, school and continuing training facilities, clinics and health care facilities) should not, moreover, be neglected.

Mobility needs and the resources to be used should also be analysed, as well as issues relating to the protection of the natural environment to ensure the quality of life of future generations.

Another important analysis to be carried out concerns socio-spatial segregation trends within Luxembourg society, i.e. an analysis of the social, economic and political dissymmetry at work in the use of space.

Spatial organisation could usefully be analysed at various levels, ranging from an analysis of different urban districts to an analysis of various regions of the country and the *Grande Région*, which would also include a more detailed analysis of cross-border flows.

These analyses should make it possible to draw up options for future spatial development and territorial organisation.

Strand 6: Supporting measures

The programme also funds supporting measures to promote the coordination of research and the transfer of knowledge in the fields covered by the programme:

1. Organisation of round tables, symposia and conferences

Projects involving the organisation of round tables, symposia and conferences in the programme fields could be supported with a view to a mutual enhancement of the research experience gained from the various projects.

- a. Over and above meetings between researchers participating directly in the programme through projects (these meetings could also be funded as part of projects themselves), the Fund is also encouraging projects involving **organisation of meetings between national and international experts** to discuss method questions raised by the projects being run and the various stages of their results, then to exchange information and data on the topics addressed. These meetings should be organised and overseen by scientific committees.
- b. Secondly, **meetings between researchers, political decision-makers and civil society** are to be encouraged so that competences can be transferred to potential beneficiaries.

- c. Lastly, the **publication** of research findings will be supported and one or more scientific compilations will be published – especially in the last year of the programme – and reviewed by national and international experts not taking part in the projects themselves.

2. Data production and access to data and sources

Data access raises a whole range of questions in the fields covered: what data are available, how can these data be accessed and to what extent should existing databases be consolidated or new databases constructed?

If the data available nationally do not make it possible to carry out the necessary analyses, these could be produced as part of research projects under this programme. Care should be taken, however, to ensure that the relationship between **data production** and the research to be conducted is balanced. In such cases, applications to the Fund will come under Strands 1 to 5.

In addition to data developed specifically as part of projects, the programme will also help to improve existing databases. **Coordination projects to improve data and access to existing data available nationally** could be submitted in the fields covered.

Measures to promote **standardisation** at national level (building, where appropriate, on other countries' experience) in order to **improve the collection, documentation, access to and distribution of data and sources** for analysis and research in the fields covered by this programme.

It will also be possible to study ways of creating one or more **social data archiving platforms** attached, where appropriate, to one or more research organisations or archives, to be run with a view to providing a service for the research community (in an existing institutional context, but also making use of the new technologies and drawing on international experience, for instance by CESSDA – Council of European Social Science Data Archives – and its national partners).

Lastly, the Fund will encourage the development of **databanks** able to provide researchers and users with better information on the data available in various locations in the country and the conditions under which they can be accessed.

3) Compliance with criteria for Fund programmes

3.1. Scientific quality

At national level, the programme covers **priority research topics taking account of Luxembourg's specific features**: socio-demographic development with a view to integration and social solidarity, socio-cultural development of the country in a multilingual and multicultural context, improving knowledge of our system of education and training, and human capital and its development against a backdrop of immigration and massive recourse to cross-border workers, the movement towards a knowledge society and aspects connected with this transition, the challenges, potential and risks inherent in globalisation as regards the economy, the role of the state in this transition and, lastly, the atypical situation of the Luxembourg economy, dominated as it is by the financial sector.

The way in which the programme is designed will make it possible to improve – in Luxembourg – scientific competences in the proposed topics and then to include local teams in the various inter-regional and international networks that are currently being set up around these research topics.

Projects submitted to the Fund will be sent to international experts for their opinion (at least one foreign expert per project) and national experts will also be consulted. These experts will in particular check the scientific quality of projects and will comment on the methods used and the appropriate nature of the research described. The Fund will also ask international experts for their opinion at an interim stage and, compulsorily, at the end of the project.

This approach will make it possible to tackle the various priority strands in a complementary way; it thus avoids any compartmentalisation of disciplines. The programme will therefore help the various disciplines of the social, human, economic and legal sciences to work together on common questions. Each strand of the programme also includes a secondary analysis of findings from a more political and forward-looking point of view.

3.2. Potential socio-economic implications

By making it possible better to understand the functioning of Luxembourg society and, therefore, to place it in a position to react more appropriately to any problems or conflicts, the programme will help to improve planning in both the public and the private sector and to promote a policy of sustainable management of Luxembourg's resources.

The programme is designed in practice to provide information, references and avenues for exploration so that the following can be adjusted in the best possible way, in a developing social and economic context:

- the socio-educational system (for young people and adults),
- policies to promote employment,
- cultural life,
- measures to integrate foreign residents,
- some sectors of social protection and all types of measures to promote more active participation by elderly people in the country's economic and social life,
- the population's living standards and social inclusion,
- parity between men and women,

- spatial and environmental planning policies,
- legislative and regulatory policy,
- economic and cultural policy.

From the point of view of enterprises, the findings of the programme should in the long term provide a more detailed picture of:

- the human resources available in Luxembourg and neighbouring regions,
- the spread and take-up of NICTs in the various economic sectors.

From the point of view of the economy in general, the research will help to support the international competitiveness of existing sectors, while enabling it to move into new market niches for which the research will try to pinpoint the most appropriate development conditions.

Over and above these evident and important socio-economic implications, it should be borne in mind that human and social science research is part of the culture and identity of a society. This programme is part and parcel of current cultural trends and at the same time reflects them. It does not simply analyse current discussions in the Grand Duchy of identity and social challenges, but also takes account of their historical dimension in order to highlight future potential.

3.3. Motivating effect at national level

The proposed programme can pool the expertise of a number of units in Luxembourg.

During one or more calls for proposals, all public bodies, departments and establishments authorised to undertake research work may submit project proposals. Only those bodies listed in Article 3 of the Law of 3 May 1999 creating the Fonds National de la Recherche are eligible for a financial contribution from the Fund. However, the Fund would like to encourage all potential national and international players to draw on other sources of funding to work together on the activities described in order to ensure the desired impact and the transfer of knowledge.

3.4. Achievability in the Luxembourg context

A number of the activities set out in this programme could use existing databases. Data and specific information on the programme's priority strands could also be collected.

The network of research centres set up to devise this programme possesses many competences, both theoretical and empirical, that are needed to plan and resolve the research issues tackled by the programme.

The competences of these different actors include in particular:

*** Data production**

The actors involved in the programme possess extensive competences in the production of quantitative databases, in particular on aspects of social life in Luxembourg:

- CEPS/INSTEAD has a number of databases which are regularly updated and contain information on various aspects of economic, cultural and social life in Luxembourg.
- Researchers at Luxembourg University (psychology department) and the CRP-Gabriel Lippmann have conducted large-scale surveys on various social phenomena.
- The CRP-Gabriel Lippmann (STADE unit) has run projects together with IGSS and STATEC to convert the administrative files on social security into a statistical database. This made it possible to create the “monthly snapshots” of employment which are currently being used as a basis for employment statistics in Luxembourg and are available at the request of researchers (for instance, the econometric survey of wages).
- The University has worked with STATEC to make data from the 2001 general census of the population available for research purposes (the GER [comprehensive census survey] project).
- The CRP-Gabriel Lippmann (STADE unit) has commissioned a number of surveys from ILReS which are available for research purposes. The BALEINE survey on languages and immigration (among 2000 people) is of unquestionable value. If its language strand were to be repeated every five years, it could be a tool for measuring social change.
- ISERP has in recent years run a number of large-scale surveys of teachers’ professional development; since 1996, ISERP has also been responsible for national school assessments at the end of primary education, in cooperation with SCRIPT.
- SCRIPT is producing files on pupils’ educational performance in preschool, primary and post-primary education.
- Moreover, a great deal of work has been carried out in recent years to develop knowledge bases on the legal and economic infrastructure of Luxembourg society by the CRP-Gabriel Lippmann (LDE unit) together with, in particular, the Central Legislation Service, the Ministries of Justice and Finance and the authorities supervising the financial sector. Several databases on different aspects of economic law have been published on the Internet and are being regularly updated. Other data collections have been published in the form of anthologies of annotated legislation.

* Data analysis

Through an analysis of the databases listed above, various institutions have acquired extensive competences in methods of **quantitative** analysis:

- CEPS/INSTEAD conducts spatial analyses of socio-economic data, longitudinal analyses, develops socio-economic indicators, etc.
- The CRP-Gabriel Lippmann (STADE unit) has proven competences in multidimensional data analysis (ACP, AFC, classifications).
- ISERP has extensive psychometric competences which are used in school assessments; a range of quantitative analysis methods are regularly used to process the quantitative data collected by ISERP.
- Researchers from the psychology department of Luxembourg University carry out scientific analyses of empirical data on various social and human phenomena.
- Luxembourg possesses competences in micro- and macro-economic econometric analysis.

Some actors have gained competences in **qualitative** data analysis:

- ISERP runs research projects drawing on qualitative data, in particular interviews with adults, and interviews with and the work of children in a school environment.
- Researchers from the psychology department at Luxembourg University run research projects drawing on qualitative data.

- The CRP-Gabriel Lippmann (STADE unit) has used, within various projects, qualitative methods to analyse data gathered from semi-directive interviews, standardised questionnaires and focus groups. A particularly innovative aspect from the point of view of methods is computer-aided qualitative data analysis (CAQDA) using QSR NVivo software.
- The CRP-Gabriel Lippmann (LDE unit) has analysed, for the Ministry of Justice in particular, Luxembourg case law in various fields such as bankruptcy law, law on securities and privileges, company law and financial law, offering a complete picture of the interpretation of this legislation by the courts; this is now one of the bases for thinking to modernise entire sectors of our law.

* Analysis of cultural output

The various seminars of Luxembourg University, for instance the Seminar on medieval history and the Seminar on ancient studies, have for some years been working on the history of Lotharingia and the *Grande Région*, drawing on all kinds of documents concerned with cultural output in the broad sense and analysing, for instance, the use of these documents in the creation of myths surrounding the history of Luxembourg.

* Technological competences

Some aspects of this programme have technological strands which could be taken on by specialist research institutions within the players involved (for instance the CRP-Henri Tudor and the CRP-Gabriel Lippmann). These players have experience both in innovative applications of the NICTs and in their use to develop new educational technologies. Technological support (of the knowledge management type) could also be envisaged in managing and processing using databases.

Current abilities at national level should be extended, especially to assist young researchers, whether pre-doctoral or post-doctoral, and to underpin existing international cooperation on current research, which could be extended with a view to cooperation in Community or other programmes.

The programme's challenge lies in particular in its potential to mobilise Luxembourg's various research organisations to **develop projects together**. It should be borne in mind here that the social and human sciences in Luxembourg have often been criticised for being too compartmentalised and for failing to cooperate beyond disciplinary frontiers. The joint way in which this programme has been drawn up is therefore a first token of the realistic nature of its goals of interdisciplinary and inter-institutional cooperation.

3.5. Budget breakdown

Projects will normally last two to three years. In exceptional and well-justified cases, they may be longer (for instance if projects require preliminary data collection and processing).

The Fund proposes to organise a **first call for proposals at the beginning of 2002** and a second call around 2005.

The Scientific Council and the Board of Administration of the Fund propose a **total budget of EUR 12 million** for the conduct of the programme.

The main aim will be help researchers to consolidate their competences, to extend them and to build on them using new approaches. Interdisciplinary approaches will be encouraged as far as possible.

The purpose is to create a critical mass of knowledge on the topics chosen, so that the country is prepared and guided in an informed way for the transition that is under way. Each project should involve cooperation between a number of Luxembourg organisations working in the research field or the involvement of a number of Luxembourg organisations or enterprises who are potential users of the project findings.

Proposed breakdown of annual state funding:

2002 (6 months)	EUR 1 100 000
2003	EUR 2 900 000
2004	EUR 2 500 000
2005	EUR 3 000 000
2006	EUR 1 500 000
2007	EUR 1 000 000

TOTAL	EUR 12 000 000

It should be noted that the Fund will subsidise **only research projects** and not work or research which falls within the normal obligations of the bodies concerned.