

# **Challenges and Opportunities in Building a Knowledge Economy in Slovenia<sup>1</sup>**

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## **1. THE STRATEGY FOR THE ECONOMIC DEVELOPMENT OF SLOVENIA**

The role of development planning documents in Slovenia has been defined in the Public Finance Act. The Strategy for the Economic Development of Slovenia is Slovenia's main strategic document that identifies factors of economic development, long-term goals, the target development scenario, and the main guidelines for the functioning of the state on the basis of an in-depth analysis. It provides a strategic framework for drawing up the budget and is taken as a guideline in defining national development priorities and macrofiscal frameworks for public finances. The Strategy also provides a wide framework for drawing up other documents in a given area (regional development, spatial planning, the policy of bolstering competitiveness, sectoral policies – tourism, the small business sector, agriculture – labour market and employment policy, education policy and culture policy).

Furthermore, the Strategy provides a starting point for preparing the National Development Plan of Slovenia (NDP). This is the Strategy's implementing document, showing the national development priorities, the main programmes and sub-programmes. The NDP translates the Strategy's guidelines into concrete programmes and projects for each priority area.

Both above mentioned strategic documents: The Strategy for the Economic Development of Slovenia and National development Plan 2001-2006 were adopted by the Government of Slovenia in year 2001.

The Strategy's main goal is to increase the welfare of people living in Slovenia in a sustainable manner, with welfare being defined as a balance between economic, social and environmental components. Welfare, the Strategy's goal, incorporates non-material components as well, such as personal development and self-realisation, social integration and security, co-operation, the development of individual and cultural identity. The meeting of this development goal should result in an overall increase in welfare as measured by traditional economic measures of development (gross domestic product per capita) as well as new measures of development (human development index, genuine savings index, sustainable development index).

In the field of economic development, the Strategy's overall achievement should be to raise the rates of gross domestic product growth and to thus accelerate the reduction of the development gap behind the EU; this should be achieved without widening the gaps in the areas of social and environmental development which are somewhat narrower. The Strategy's decision to give priority to economic growth and development is underpinned by estimates showing that

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Slovenia's development gap in this area is wider than the average gap in the level of social and environmental development.

Mechanism applied to achieve the Strategy's goals is the concept of the complex competitiveness of the country, which is defined as the measurable capacity to produce internationally competitive products and services in a way that gives its citizens sustainable development and satisfactory living standards. The main mechanisms applied to bolster the complex competitiveness of Slovenia relate to the active structural and development policy orientations in the areas of (i) transition to a knowledge-based society, (ii) strengthening the competitiveness of the economy, (iii) improving state efficiency, (iv) policies for Slovenia's operational integration into the European Union internal market, and (v) balanced regional and spatial development.

With accession to the European Union, which is a short term policy goal in Slovenia, the size of the domestic market as one element influencing economic conditions will expand significantly. This should help raise the minimum economic, social and environmental standards. It will strengthen the need for unification on one hand, and stimulate the identification of particularities in social and national development on the other. Parallel to integration processes in Europe, the process of globalisation is deepening; the costs of production, trade, information exchange, and international operations are being drastically cut. International competition is becoming stiffer, while the role of adaptability, co-operation, openness, and training is enhancing. These two processes require an overall and co-ordinated strengthening of competitiveness and adaptability of the corporate sector and the state to be able to take advantage of development opportunities and manage risks.

## **2. MACROECONOMIC POLICY, INCENTIVES, AND THE REGULATORY ENVIRONMENT NEEDED TO SUPPORT THE KNOWLEDGE ECONOMY**

### **2.1. Macroeconomic Developments in the 1995-2001 Period**

Slovenia is a small economy with population of approximately 2.0 million. With GDP per capita at purchasing power parity of EUR 16,100 (2000) or 72% of the EU average it is the most developed among transition countries and is placed before Greece and after Portugal.

After the initial transitional recession, Slovenia again recorded economic growth in 1993. As Slovenia's economy is small and open, economic developments in the 1990s were largely underpinned by economic trends in Slovenia's main trading partners. This was reflected in the economic growth dynamics in 1995-2000, when the average annual gross domestic product growth was 4.3%. The slowdown in Slovenia's economic growth in 1996 was to a large extent the consequence of slower economic growth in the EU. The slowdown in 1998 was caused by the financial crisis in Russia and the recession in Croatia. In 1999, negative effects from abroad (lower demand in the EU) were more than offset by strong domestic demand driven by the expectations of value-added tax (VAT) introduction. In these years, domestic demand contributed to economic growth relatively more than in other years, when the main lever of growth was foreign demand.

After a relatively fast decline in inflation in the period up to 1995, the downward trend slowed down, but continued until mid-1999. The downward trend came to a halt after the introduction of value-added tax in July 1999. In addition to tax reform, inflation was exposed to external pressures (particularly the rising prices of oil in global markets, the stronger US dollar and the rising inflation in the EU), so the average inflation rate continued to persist at about 8% in 2000.

Until 1999, Slovenia achieved economic growth without undermining the external balance. The current account deficit rose markedly in 1999 as a result of strong import growth underpinned by high domestic demand (connected with the introduction of VAT) and modest growth in exports because of unfavourable economic developments in the EU.

The public finance balance was undermined in 1997, when the revenue side was affected by the cut in social security contribution rates in 1996 and the continuing liberalisation of international trade (customs duties revenues fell in real terms), which was not fully compensated for by new tax sources. In 1998 and 1999, Slovenia succeeded in keeping a lid on its general government deficit by pursuing a restrictive budget policy. However, the general government deficit relative to GDP rose again in 2000, primarily because the revenues from value-added tax and excise duties were lower than expected.

As far as employment is concerned, positive trends recurred only in 1999 after a period of decreasing or at best stagnating employment despite the average annual economic growth of above 4%. This was largely related to the process of corporate restructuring. In 1999, unemployment began to decline as well, however, the problems of structural unemployment remained unresolved despite these positive developments. These problems are reflected in a high proportion of long-term unemployed (above 60%) and the continuing high share of unskilled unemployed (close to 50%). Moreover, the age structure of the unemployed is also unfavourable, as the share of the unemployed above 40 years of age exceeds 50%. The structural aspect of unemployment is also reflected in regional discrepancies.

In 2001 economic growth is estimated to reach 3.7% in real terms. Slightly lower GDP growth as in 2000 is mainly due to two factors: modest domestic demand, especially investment, and the slowdown of economic activity in European Union. In spite of the latter, export dynamics retained a strong pace sustained by higher exports to the markets of former Yugoslavia and Russia. Foreign demand is thus estimated to retain its role as the main lever of economic growth in 2001. The relatively high export activity together with low imports (in line with modest domestic demand) resulted in a decrease of the current account deficit to around 1% of GDP, while public finance deficit is estimated to retain the same share in GDP as in 2000. The average inflation rate remained almost at the same level as in 2000. External factors, which mostly affected price dynamics in 2000, continued to take effect in the first half of 2001, so the rise in prices started calming down in the second half of the year. Since the slow-down in the global economy is expected to continue in 2002, the contribution of foreign demand to GDP growth will decrease in 2002. As domestic demand is expected to recover, overall economic growth is forecast to retain the previous year's level.

**Table 1: Main macroeconomic indicators of Slovenia's development in the 1995-2001 period**

Real growth rates in %	1995	1996	1997	1998	1999	2000	2001 est.
Gross domestic product	4.1	3.5	4.6	3.8	5.2	4.6	3.7
Employment, according to national accounts methodology; in %	1.0	-1.0	-0.5	0.0	1.2	1.1	0.7
Unemployment rate; ILO methodology; in %	7.4	7.3	7.4	7.9	7.6	7.0	6.3
Gross wage per employee	5.1	5.1	2.4	1.6	3.3	1.6	2.5
Labour productivity	3.1	4.4	5.1	3.8	4.0	3.5	3.0
Inflation <sup>1</sup> (annual average); in %	12.6	9.7	9.1	7.9	6.1	8.9	8.4
Exports of goods and services <sup>2</sup>	1.1	3.6	11.6	6.7	1.7	12.7	7.2
Imports of goods and services <sup>2</sup>	11.3	2.1	11.9	10.4	8.2	6.1	3.3
Current account balance as a % of GDP	-0.5	0.2	0.1	-0.8	-3.9	-3.3	-1.1
General government revenues as a % of GDP	43.1	42.7	42.0	43.0	43.6	42.8	43.2
General government expenditure as a % of GDP	43.1	42.4	43.2	43.8	44.2	44.1	44.5
General government surplus/deficit as a % share of GDP	0.0	0.3	-1.2	-0.8	-0.6	-1.4	-1.4

Source: Institute of Macroeconomic Analysis and Development (IMAD), Autumn Report 2001.

Notes: <sup>1</sup> Until 1998 inflation was measured by the retail price index and since 1998 by the consumer price index; <sup>2</sup> Balance of payments statistics (exports F.O.B., imports F.O.B.); the real growth rates exclude the effects of exchange rate changes and changes in prices in foreign markets.

## 2.2. Macroeconomic Policies and Institutional Framework

Macroeconomic stability and institutional reforms are the two main components of the transition process. The main goal of macroeconomic policies has been to create a stable and liberal economic environment, enable the completion of institutional reforms that would establish the necessary structures and institutions of a market economy.

### 2.2.1. Macroeconomic Policies

In accordance with the Law on the Bank of Slovenia, the Bank of Slovenia is responsible for the stability of domestic currency and for general liquidity in domestic and foreign payments. The primary goal of **monetary policy** is price stability. To achieve it, the Bank of Slovenia is pursuing an intermediate target. Before 1997 this intermediate target was the narrow money

supply M1. Thereafter, the broad money supply M3 has been used as the intermediate target. Monetary targeting with a managed floating exchange rate regime has been a successful policy for lowering the inflation rate since the independence of the Republic of Slovenia. Monetary policy's main goal is to gradually reduce inflation to levels allowing integration into the European Monetary Union (EMU). Priorities aimed at meeting this goal include: (i) the liberalisation of capital flows with the rest of the world, (ii) the establishing of the reference interest rate through open market operations in order to replace the current inflation-indexation of interest rates, and (iii) integration into the Exchange Rate Mechanism 2 (ERM2) as a transitional period before entering the euro zone.

In line with Slovenia's current practice and the broad guidelines of the economic policies of the EU, **incomes policy's** goal is to keep real growth in the gross wage per employee below the rate of labour productivity growth, which should help reduce inflation and create the conditions for companies to increase investment in technologies, markets and human capital, leading to improved competitiveness and higher employment. Priorities include: (i) an agreement on wages policy in the private sector, which should ensure that wages rise below the rate of labour productivity growth, and (ii) systemic regulation of wages in the public sector.

**Fiscal policy's** strategic goal is to restructure general government revenues and expenditures in a way that would help boost economic competitiveness and bring public finances into balance without increasing their share in gross domestic product. Priorities include the engagement of the private sector in providing and financing public services, the transfer of part of those services to private financing, and the use of receipts from privatising state assets to reduce public debt.

### *2.2.2. Creation and Implementation of the Institutional Framework*

Within the non-financial and financial corporation sectors, the EU integration process has accelerated the adoption of a legislative framework and solutions complying with those of the Single Market. Slovenia asked for transitional periods only with regard to specific areas and it has, in most cases, already adopted regulations similar to those in other European countries which will be followed by the more demanding implementation thereof.

In the area of **market activities**, legislation which regulates legal issues related to operations of commercial companies has been adopted, and institutions with a considerable impact on competitiveness have been set up (agencies for stimulating entrepreneurship). In the field of state aid Slovenia has adopted the legislation which regulates the procedure and control over allocation and use of state aid with a view to introduce the principles of market economy, maintain competition and implement international obligations. Company law and state aid rules have been aligned with the Acquis.

Incomplete market structures in Slovenia, mostly present in **public utilities**, are gradually being phased out by basic legislation through the introduction of competition and regulatory institutions. The regulation of activities of the electricity generating industries, telecommunications, railways and other traffic and power generation infrastructures is carried out by *state regulatory institutions* responsible for regulating companies' entry into and exit from the sector and maintaining an optimal level of competition by granting licenses, taking into account the technical and environmental standards and price regulation. Slovenia has opted for sectoral

regulatory authorities whose main advantage is specialisation in individual areas (Energy Agency, Telecommunications Agency, Railway Directorate).

#### Box 1: CENTER OF EXCELLENCE IN FINANCE

The reforms in public finance management have intensified in the last decade and this trend is likely to be on-going if the goal of open, transparent, and accountable governance is to be achieved. These reforms place new demands and challenges on staff responsible for public finance management, often without adequate attention to retraining, and career development. The goals of the reforms can only be achieved by professional and competent staff in charge of public finance. As a result it has become necessary to be much more systematic in the development of these human resources.

The initiative to establish a regional centre for public finances Center of Excellence in Finance (CEF) in Slovenia has been framed in the context of the Stability Pact for South-Eastern Europe. It recognises the urgent needs of capacity development of the countries of the region (ex-Yugoslavia and Albania) to cope with the challenges of implementing public finance reforms. It also recognises the common background and institutional practices of most of these countries and aims to develop common solutions to the evolving roles of their various institutions.

#### **Purpose of the CEF:**

- To provide focussed training and advisory support to Government officials of participating countries involved in public finance management reforms.
- To develop a core team of trainers drawn from participating countries capable of providing in-country training.
- To provide a forum for exchange of views and experiences and for developing common strategies in implementing public finance management reforms.
- To help participating countries establish systematic and standardised procedures for public finance management.
- To build a common pool of expertise in developing computer support systems for public finance management.

The competitiveness of Slovenia's economy is also influenced by the **organisation of state administration and its efficiency**. Particularly important is the efficiency of administrative procedures regarding the entry and exit of companies, labour market flexibility, urban planning policy and the supply of utility services to building sites. The *legislative aspect of the administration reform* has to be accelerated and it is necessary to set up public agencies performing regulatory, development and/or analytical tasks in the areas where a particularly high level of independence is required or which may provide for a more systematic management of public funds and a more efficient and user-oriented performance of services. *The introduction of quality standards* in public administration is formally provided by the project of attaining ISO standards in the operation of administrative units and by the Decree on administrative authorities' work with customers. *E-government strategy* means elimination of the legal barriers to electronic commerce and the standardisation and simplification of administrative procedures. The

*fundamental legal act on regions* introduces regionalism as the basis for the faster and more balanced development of Slovenia. The regions will integrate small municipalities and provide for those economic and citizens' needs that are beyond the capabilities of single municipalities.

## **2.3. Openness to Trade and Foreign Direct Investment**

### 2.3.1. Trade Policy and Flows, Intellectual Property Rights

Being an open and export-oriented economy, Slovenia has considerably liberalised its trade policy since 1991. The Foreign Trade Act of 1993 liberalised and simplified foreign trade procedures, abolished the registration of business activity dealing in foreign trade and reduced the quantity and value restrictions for imports. In 1996, the Customs Act and the Customs Tariff Act were adopted, modernising customs duties and adjusting them to the standards of developed countries. Slovenia has been a member of the WTO since July 1995, and in the middle of June 1999 it ratified the 5<sup>th</sup> Protocol to the General Agreement on Trade in Services. Up until 2000, Slovenia had signed 32 free-trade agreements (with EU member-states under the Europe Agreement, with the EFTA and CEFTA member-countries, with the Baltic states, with Croatia, Macedonia, Turkey and Israel). More than 85% of Slovenia's foreign trade thus takes place under free-trade agreements.

In 2001 Slovenia adopted The Act Amending the Copyright and Related Rights Act which is aligned with the conventions of the World Intellectual Property Organisation (WIPO). In addition to that Slovenia in 2001 passed the Act Governing Customs Measures Relating to Infringement of Intellectual property rights and new Industrial Property Act.

Total trade (exports and imports) in Slovenia equals 122% of GDP (year 2000), while exports represent almost 59% of GDP (year 2000) which is almost 4 percentage points higher than in 1995. While the largest share of export is directed to the European Union (64% in 2000), the regional orientation of trade flows in 2001 shows a greater dispersion compared to previous years which was due to the more intensive reorientation of some exports to the markets of former Yugoslavia and Russia, which is in line with Slovenia's aim to strengthen its presence in the territory of former Yugoslav republics and other South-Eastern European countries in the framework of foreign trade diversification.

### 2.3.2. *Foreign Direct Investment*

In the last few years there were some considerable changes in policies with respect to foreign direct investment. In 1999 the Foreign Exchange Act was adopted, which fully implements the principle of national treatment. In 2000 the Government adopted Programme for the Promotion of FDI which focuses on the lifting of administrative barriers to investment, improving the supply of building sites for industry, and the setting up of an internationally comparable system of non-refundable incentives. In 2001 the Bank of Slovenia abolished custody account regime for long-term securities which means that foreign investors are able to trade without restrictions with all Slovenian bonds and shares. The Bank of Slovenia has still kept the custody account regime for money market instruments.

FDI stock in Slovenia totalled USD 2,808.5 billion at the end of 2000. FDI inflows in Slovenia have been on a downward trend since 1997, but there has been a significant positive change in 2001, with FDI inflows largely fuelled by some large foreign acquisitions. Provided that the state carries out the announced privatisation of state-owned assets in banking and telecommunications sectors – a project that cannot take place without the participation of foreign investors for developmental, strategic and financial reasons – the upward trend in FDI is expected to continue in the next few years.

## **2.4. Financial Sector Policies**

Changes in regulation have been the driving gear of structural changes in the Slovenian financial sector during the last years. The adoption of the Banking Act and the Securities Market Act in 1999 and the Insurance Act in 2000 is considered to be crucial for this process and brought the opening of the market to foreign competition in the banking, insurance and investment services area. When preparing regulatory changes, Slovenia followed the aim of complete harmonisation of the rules on establishment, operation and supervision of financial institutions and markets with the EU law and other relevant international standards.

### *2.4.1. Banking Sector*

The consolidation of banking sector has been taking place since 1994 what is evident in gradual decrease of the number of banks (from 33 in 1994 to 25 in 2000). The consolidation process is expected to continue in the succeeding years due to the Governmental decision on the privatisation of two state-owned banks (NLB, Ljubljana and NKBM, Maribor) and due to expected foreign competition in the banking sector.

The performance of the whole banking sector was successful in the year 2000, both in view of accelerated growth of the volume of operations and total assets, which is illustrated by the increased share of total banking assets in GDP, as well as from the view of realised profit before taxes which exceeded the total profit of the preceding year for more than 50%. At the same time the earnings ratios, such as return on average assets (ROAA) and the return on average equity (ROAE) also increased.

## **2.5. Competition Policy**

In small countries, competition policy should – because of the smallness and openness of the domestic market – be specific and subordinated to the goal of making the economy internationally competitive. In the process of acceding to the EU, Slovenia's competition policy is being harmonised with the EU's competition legislation but, together with its main goal – ensuring competition – it is also pursuing the goal of increasing the international competitiveness of the Slovenian economy. The orientation of Slovenia's competition policy is thus to maintain the highest possible level of competition in the Slovenian market, enable alliances and mergers between companies to increase their competitive edge in the international environment, and prevent any associations and mergers that hinder competition.

### 3. EDUCATION AND SOCIAL CAPITAL

Even though the estimated average number of completed years of schooling in Slovenia is smaller than in developed countries, the **education background of mostly younger generations** increased in the last decade. It is estimated that currently in Slovenia just below 20% of the age group between 19 and 29 has less than secondary education – this percentage is lower in only few EU member states. Slovenia is no worse off regarding the participation in secondary and post-secondary education. In the 1990s the number of university students in Slovenia almost doubled, which was followed by a larger share of university graduates below 30 years of age. The high share of secondary and post-secondary school students will in the forthcoming years result in an increased number of well-educated and highly skilled job seekers on the labour market.

The **education structure of the Slovene population**, mostly older generations, is less favourable comparing to developed EU member states, whilst the proportion of people with completed college and university education is smaller already among those over 30. According to the data on education structure of adult population Slovenia is below the OECD average by the share of adults holding at least a higher education degree. The share of employed with high educational attainment in 1998 is only 10% of the total. Particularly problematic is the share of people with university degree working in manufacturing – merely 4%.

Similarly, Slovenia lags behind in terms of the share of older generations (primarily the group above 40) who have completed a four-year secondary school programme. In the same age group the proportion of those with unfinished secondary school is more than 30%, whereas in developed countries the respective shares have been under 25% for several decades now. Secondary school education, however, is the level at which a greater flexibility and employability of an individual starts.

Reasons for unfavourable educational structure of employed are manifold and basically relate to an unfinished transition restructuring, establishing of an efficient ownership structure and corporate governance, and to a slow transformation of Slovenian corporate sector from low to higher value added activities. One of the reasons is also the policy of preserving jobs with low value added in “dying” industries reflecting in a tax system, which does not stimulate companies to employ highly educated people.

The **level of formal education of active labour force** in Slovenia is higher than that of the unemployed. As much as one third of the unemployed finished only primary school or less, whilst the share of the active labour force with the same education level is just below 25%. The level of education is therefore a key element in defining the position of the workforce on the labour market. The labour market of Slovenia is faced with a very unfavourable structure of unemployment: around 47% of the unemployed is without formal education and more than 60% of them is long-term unemployed. The unemployment rate of the disabled is above the average and also older generations have difficulty finding jobs. The high shares of older people and those without formal education among the unemployed as well as the average period of unemployment point to the fact that unemployment in Slovenia is particularly unrelenting.

Similarly to many other countries Slovenia faces to great **decline of student following enrolment** (early school leavers and repeating) at all levels of education (compulsory primary,

secondary and especially vocational, specialised and post-secondary). The result of dropouts is a greater inflow of workforce that has difficulty finding a job on the market, which is ever harder on job seekers without formal education. Dropping out and repeating is also a loss for the society and individuals from the aspect of economy and quality of life. Young people leaving school without qualification are exposed to a greater risk of social marginalisation.

The share of **higher education** students in Slovenia is not lower than in developed European countries (50,7% of the population aged 19-23 enrolled in the tertiary education in 1998). However, the enrolment structure in the university is not favourable. The number of students and graduates in natural sciences, mathematics, information technology, computer science and foreign languages - all of which are of key importance for the development of the information society, globalisation and accession to the EU - in Slovenia is too low.

A downside of the quickly growing number of university students in the 1990s and the increasing participation of generations in post-graduate programmes was a less favourable ratio between students and university teachers (including associates), which significantly influences the quality and efficiency of knowledge transfer.

**Post-graduate studies** in Slovenia are traditionally poorly developed. A budgetary co-financing system was set up only in the recent years, which facilitated enrolment and stimulated the co-operation and networking between the two universities, college-level institutions, research institutes and established foreign institutions. Post-graduate programmes are too fragmented and only loosely connected with the corporate sector. This applies to the development of research potential (of students and employees) as well as to the creation and transfer of new know-how. Post-graduate programmes in their entirety are not organised rationally enough and their quality is not yet satisfactory – especially post-graduate specialist training is being developed too slowly. Post-graduate studies are not widely spread (lack of both financial and organisational incentives by the corporate sector) and the range of curricula is too limited, making them unattractive to foreign students.

The range of **educational programmes** does not follow fast enough the new demand for modern methods of training and re-training of active labour force and certification of vocational and professional qualification. Educational programmes remain: too “prescribed” at the national level; unconnected, traditionally closed and too content-oriented instead of goal- and problem-oriented; insufficiently answering the needs of the economic, social and personal development (also from the point of view of culture, creativity environment and health protection). Students in post-secondary education still face low mobility between traditional educational programmes and different levels – promotions are as a rule possible only vertically, whilst horizontal mobility is very difficult even within a single university. The extensive network of education and training institutions is a good basis for widening the range of educational programmes, which will be able to adapt to new requirements. In the curricula at different levels of educational system, ICT is treated as a separate subject and used as a tool for other subjects.

## Box 2: DEVELOPING COMPUTER LITERACY

In 1994 a long-term ICT programme »Racunalniško opismenjevanje« (»Developing computer literacy«) was established to spread the use of information and communication technologies. The objective of the programme is to:

- train teachers and pupils for the use of information technology;
- implement a standardisation of computer supported transfer of data between schools and other institutions;
- unify the computer software used for teaching and administration purposes in schools;
- supply teachers with up-to-date computer and data equipment;
- and provide the possibilities for research and development in the field of implementing new information technologies.

In embracing the concept of **life-long learning** Slovenia is at the beginning – merely 33% of adults is involved in various forms of education and training. Corporate investment in education of employees is proportionately modest.

According to an international survey (OECD) of **functional literacy of adults** between 16 and 65 the population of Slovenia scored similarly to the inhabitants of Poland, Portugal and Chile; namely, the functional literacy of the majority (around 70%) is only at the 1<sup>st</sup> or 2<sup>nd</sup> level, which in the opinion of the OECD experts is inadequate in terms of mobility, employability and participation of individuals in social processes. In this respect Slovenia has not yet paid enough attention to social effects of education. Education entails social differentiation, which is in the absence of appropriate government measures handed down from generation to generation.

Adult education must urgently be intensified, which in combination with the development of the corporate sector and SMEs could reduce the rate of unemployment and on the other hand increase the activity rate of older generations. In order to achieve the latter, the pension and disability insurance system was reformed in 2000.

Inter-institutional and inter-ministerial co-ordination at national and local levels (education, culture, health care, economy etc.) has not yet reached the stage that would ensure the functional inclusion of education system into wider socio-economic processes and development arising from **knowledge-based society** through the concept of life-long learning. The situation is similar in international co-operation, which is still too limited (especially in terms of exchange and mobility) to have any influence on the process of establishing a system of international comparability of knowledge and skills. Exactly this will be of crucial importance for successful participation of Slovenia in broad development processes and for Slovenia's population readiness to face the risks and challenges brought about technological development, European integration processes and globalisation.

Participation in the higher education system of Europe will improve the transfer of knowledge and increase the mobility of students, university teachers and researchers. Besides, it will open

new possibilities of formal and informal education and training abroad. The introduction of European standards together with competition will help raise the quality of education.

Although it is not expected that Slovenia's **accession to the EU** and the following free movement of persons would result in great flows of migration, there is a threat that the drain of highly skilled and well-educated workforce from Slovenia will rise. In the case that the workforce "circulates" i.e. returns, this will present an opportunity for increasing domestic development potential, but should this outflow persist, loss of human capital is imminent.

If commercial entities are not sufficiently prepared for entering the common market, unemployment rate may rise and the employees of companies, which will not be competitive on the common market, may become socially deprived.

One of the five development priorities in the NDP, i.e. **Knowledge, Human Resource Development and Employments** is aimed at »Improving employability and quality of life by creating, disseminating and using knowledge for economic and social development of Slovenia« and will be achieved by means of different programmes and subprogrammes. Specific measures, highly relevant for development of the knowledge based society, are being planned or have already been put into practice, among others:

- creating networks and partnerships for development of programmes for vocational training, especially in IT;
- establishing partnerships and networks at the national and regional levels which will help improve standards as well as planning and implementing activities for transfer of knowledge and access to it;
- development and modernisation of education programmes in terms of the needs on the labour market and participation in the *knowledge-based* society;
- education and training for a certain profession and participation in social processes - especially focusing on improving literacy, language skills, basic knowledge and know-how in information and communication technology; specialisation, training in management and post-graduate studies (particularly in mathematics, natural sciences, pedagogy, communicology, information technology and foreign languages).

The goal of the programme **Adaptability of companies and individuals** (one of the four programmes in the priority Knowledge, Human Resource Development and Employments) is to improve adaptability or capacity to react to changes in the environment and competition. Restructuring of economy and development of small and medium sized companies requires highly qualified and adaptable labour force. Management and labour force must have adequate knowledge, education and skills to help their company growing. The measure supports the activities geared towards promotion of investments in human resource development in companies, permanent education and training of employees, better adaptability of vocational training to the needs of companies, relations between education institutions and economy as well as better adaptability of specific groups on the labour market (young, women, rural population). These activities will improve quality and adaptability, transfer of knowledge and relations between the education system and economy. Entrepreneurs must have an adequate level of education in order to ensure stability of the new companies.

#### 4. INFORMATION AND COMMUNICATIONS TECHNOLOGY INFRASTRUCTURE

According to numerous statistic surveys, Slovenia ranks high or highest among transition countries both in terms of telecommunications infrastructure and equipment as well as in terms of number of PCs per inhabitant. Not included in the table are broadband ADSL lines, which started commercial deployment in 2001.

**Table 2: ICT Diffusion in Slovenia, 1998-2000**

	End 1998	End 1999	End 2000
No of conventional lines per 100 inh.	36.7	37.8	38.4
No of 64k ISDN lines (subscriptions) per 100 inh.	2.3	5.0	9.0
No of mobile phone lines per 100 inh.	9.8	33.3	57.3
Total no of home PCs	210,000	230,000	240,000
No of home PCs per 100 inh	10.6	13.4	12.06
Total no Business PCs	210,000	267,000	308,000
No of business PCs per 100 inh.	10.6	11.6	15.47
Total no of PCs	420,000	497,000	548,000
No of PCs per 100 inh.	21.2	25.0	27.6

*Source: European Survey of Information Society - ESIS 2001 (based on data of the Statistical Office of the Republic of Slovenia - SORS).*

During 2001 a new ICT policy framework was set up by Ministry of Information Society (established in January 2001). Being in charge of telecommunications and IT application uptake the Ministry defined the following **policy priorities**:

- to enable all inhabitants of Slovenia an equal access to information technologies and services;
- to promote a knowledge-based economy and e-business in private and public sectors of the economy;
- to promote e-business in public administration;
- to encourage and enable the largest possible scope of administrative and other public services via e-business;
- to promote education and training for information society;
- to promote projects that reduce the digital divide, and to reduce the number of people excluded from the advantages brought about by information technology and services;
- to promote the development of new technologies in Slovenia and create new jobs in the information sector;
- to monitor and propose acts and implementing regulations in the area of infrastructure and e-business;

- to harmonise Slovenia's legislation with the *acquis*;
- to implement administrative procedures in accordance with the law;
- to found an independent regulatory body (Telecommunications Agency)<sup>2</sup>;
- to evaluate sector-specific legislation from the aspect of e-business in public administration and put forward proposals for amendments;
- to be responsible for the security of e-business and prevent Internet misuse;
- to take measures to liberalise the telecommunications services market.

In the second half on the 2001 a **national programme for the development of information society** was formulated. Current activities focus on two action plans and the upgrading of the existing strategic document on e-government:

- e-Slovenia Action Plan<sup>3</sup>;
- e-Government Action Plan;
- Strategy of of E-commerce in Public Administration for the period from 2001 until 2004 (SEP-2004) (see below).

Within the framework of Project named **E-school**, which is undertaken by the Ministry of Information Society in co-operation with the Ministry of Education, Science and Sport, the doors of the first four E-schools in Slovenia, schools which gives the opportunity for free Internet access, have opened in Oct. 2001. The Ministry plans to open approximately 15 E-schools, especially in small towns all over Slovenia. The activities (especially education, group work, discussion etc...) in the E-school will be prepared by the schools themselves or with co-operation with the local authorities and companies. This Project, which ensure free Internet access for all citizens, is one of the most important Slovenian steps towards information society.

All Slovene public **libraries** offer access to the Internet. In all types of libraries, representing the information infrastructure for all activities in business or non-business sectors, an intensive computerisation had been observed. Its purpose is no longer only to gain access to the interactive bibliographic system but primarily to gain access to the Internet as well as remote information systems and databases. In 1999 1,105 personal computers were installed in the Slovene libraries, of which 993 enabled access to the Internet (i.e. 0.46 per 1,000 inhabitants), or more than 2,000 PCs and terminals in total. Development of informaton literacy, use of information and information management will be encouraged by transforming the classical library network into a

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<sup>2</sup> Already implemented in summer 2001.

<sup>3</sup> The national programme e-Slovenia will be based on:

- the Action plan eEUROPE+ (Action plan eEUROPE+ is the European Commission initiative (DG Information Society) and European Union candidate countries. The mission and the contents of the document eEUROPE+ are, with the exception of certain adaptations, equivalent to the key document of the EU Member States entitled eEUROPE.
- indicators of evaluation and assessment of the information society situation. (At the moment, 23 indicators of information society are defined, which are supposed to enable the follow-up and assessment of the progress of individual countries)
- programme departments of the National Programme e-Slovenia (Programme Departments are shaped according to the contents, and with a clear correlation to the items in the action plan eEurope+).

network of library information centres for the purpose of supporting training, research and creativity.

Slovenia's government's **Centre of RS for Informatics** (GCI) is responsible for the planning, consultation and formulation of methodological and technical solutions for developing the informatics infrastructure of state organisations. The key document, prepared by GCI, is the Strategy of E-commerce in Public Administration of the Republic of Slovenia for the period from 2001 until 2004 (SEP-2004) and was adopted by the Government of the Republic of Slovenia in February 2001. The purpose of SEP-2004 is defined from the information and institutional viewpoint. Information viewpoint includes: definition or renewal of global frameworks (aims and starting points) of development, operation, connection and opening of all the information systems of public administration of the Republic of Slovenia as well as the presentation of more concrete approaches and models of architectures for some of the most important "competence-related" information systems of public administration. Institutional viewpoint includes all the state organs and certain institutions of public administration of the Republic of Slovenia – organs of local self-administration. Since public administration of the Republic of Slovenia influences also the private sector, it is expected that the Strategy will indirectly have even bigger influence outside public administration of the Republic of Slovenia.<sup>4</sup> It is important that the Strategy contains suggestions for its implementation in the field of e-commerce of public administration through specific mechanisms like procedures of planning, installation, implementation, supervision as well as responsible institutions (organs, bodies).

Parallel to the activities at the national level, informatisation of public services at community levels (and city levels) are progressing.

An important achievement in informatisation was achieved in medical sector with the introduction of **health insurance card**. This electronic document was issued to all persons fully covered by the compulsory health insurance in Slovenia, i.e. to the entire population of close to 2 million. The card is a means of easy and direct transfer of data between the insured persons, the insurance company and the health care organisations. Data electronically recorded in the card are accessible for reading only to authorised health professional card holders.

The **usage of Internet** is growing, both for business and private needs as can be seen from the Table below. Currently, there are several Internet Service Providers active on Slovenian market. The education and research institutions have possibility of access to Internet via ARNES, a research and education network provider and this service is heavily subsidised by the government.

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<sup>4</sup> Taken from the Press release of the Government Centre of RS for Informatics, Feb. 2001.

**Table 3: The usage of Internet**

	End 1998	End 1999	End 2000
No of Internet domestic users <sup>5</sup>	68,000	112,000	136,000
No of Internet domestic users per 100 inh.	3.4	5.6	6.8
Estimation of Internet penetration rate in companies	Small <sup>6</sup> : 57% Medium: 69% Large:82%	Small: 78% Medium:90% Large:96%	Small: 85% Medium:98% Large: 100%
No. of Internet hosts			21,000
No. of Internet providers			24

*Source: European Survey of Information Society - ESIS 2001 (based on data of the Statistical Office of the Republic of Slovenia).*

As already mentioned under previous point one of the most important goals of the National Programme for the Development of Information Society is the implementation of e-Slovenia Action plan taking fully into consideration the European Commission initiative Action plan e-Europe.

Slovenia has also regulated the issues of **electronic signature** with two main legal documents: Law on electronic commerce and electronic signature (Official Gazette 57/2000) and Act on the Conditions for electronic business and electronic signature (Official Gazette 77/2000 and 2/2001). The key importance of the law is that under specified circumstances the electronic signature is given legally the same status as hand-written signature. The Law and consequent Acts are fully compatible to the Model law on electronic business of the United Nations Commission on International Business Law (UNCITRAL) as well as the legal measures of European Union.

The general telecommunications policy was defined by the **National Programme for the Development of Telecommunications** of the Republic of Slovenia adopted in February 2000. It covers the long-term development of the telecommunications networks and services, investments into the public telecommunications network, use of economically justifiable technologies for covering the rural and less developed regions with public telecommunications services, as well as the adjustment of telecommunications development policy to the market situation.

Beginning with 2001, Slovenia has formally ended the period in which the Telekom Slovenije had the exclusive rights on the provision of public telecommunications services of voice telephony and on the construction and management of the public telecommunications network.

<sup>5</sup> The estimates are for persons who use the Internet on a monthly basis; major access from home or work is considered.

<sup>6</sup> Only small companies with 5 or more employees were considered

The new Telecommunications Act, which entered into force in May 2001 completes the reform towards liberalisation of the telecommunications services and networks market. The Act installed the legal framework for the area's harmonisation with the *acquis communautaire*, which encompasses over 100 acts (directives, recommendations, decisions and resolutions).

The Telecommunications Act provided for the establishment of the **Agency for Telecommunications and Broadcasting**, which became operative in July 2001. The Agency is politically and financially autonomous regulator of the market for telecommunications services responsible for ensuring the impartial and transparent functioning thereof, supervising the implementation of the act, and regulating relations between operators.

The long-lasting monopolized position of the Telekom Slovenije has led to a considerable imbalance in tariffs for the public services, which is a very disturbing factor in the process of the on-going liberalisation of the telecommunications market in Slovenia. Although certain steps to improve the situation have already been taken, the final solution remains as one of the most important tasks for the new Agency.

Slovenia acceded to the Information Technology Agreement (ITA) and has applied the ITA on a provisional basis from 1 January 2001. In negotiations for the Accession to the EU Slovenia in 2001 closed the chapter on ICT. In the pre-accession period Slovenia is progressively aligning its obligations under WTO agreements with those of the EU.

## 5. RESEARCH AND DEVELOPMENT

Scientific research and development activities in Slovenia are relatively well developed compared to other countries of Central and Eastern Europe. In 1997 research organisations in Slovenia were employing 11,500 people, of which 6,072 researchers working full or part time. Data for 1999 reveal that the number of researchers per 1,000 inhabitants was slightly below the EU average<sup>7</sup>. By international standards some sciences in Slovenia have reached top levels – for example biochemistry, physics, biology, pharmaceuticals and mathematics. The number of scientific publications per 100,000 inhabitants in Slovenia is very close to the averages recorded in the OECD and the EU.

Nevertheless, data on **investment in R&D** (1.51% of GDP in 1999) point to a too low level of this type of expenditure. In terms of the percentage of GDP used for research and development Slovenia is behind the USA (2.62%), the OECD average (2.21%) and the EU average (1.92%). In most of 1990s R&D expenditure in Slovenia was almost equally distributed among government and higher education sectors (app. 0.7% of GDP) and corporate sector (app. 0.8% of GDP). Even though towards the end of the decade the share of investment by the corporate sector started rising (56,9% of total expenditure on R&D in the country in 1999 as compared to 45,9% in 1995) Slovenia still lags behind in investment in applicative and fundamental research as well

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<sup>7</sup> Sources in this and in the next para: data for Slovenia: Statistical Office of the Republic of Slovenia (SORS). Data for the EU and USA: Towards a European Research Area. Key Figures 2001. Indicators for benchmarking of national research policies. European Commission, Brussels, 2000. Data for OECD: Main Science and Technology Indicators : 2001/I, OECD, Paris, 2001.

as the share of corporate sector's expenditure for R&D (OECD average in 1999 was 1.54% of GDP while the same data for Slovenia was 0,86%).

While the public research sphere is relatively well developed, among the main factors reducing the competitiveness of the Slovene economy is the fact that knowledge, research results and new technologies are **insufficiently transferred** to the corporate sector. Slovenian public research characteristically focuses on fundamental research and neglects applicative research, for which funds should be to a much larger extent forthcoming from corporate sector. International trends in science productivity and applicability are not followed consistently enough, especially in view of their relevance for the economic and social development of Slovenia.

Slovenia has organised relatively stable financing of public research institutions and universities. On the contrary, research and development in the corporate sector is much worse off than in the public sector, since in the past there have only been little budgetary funds allocated for this purpose. Most of the public R&D funds are channelled to public research institutions. The co-operation between companies as well as the co-operation between the corporate sector, universities and research organisations in the government sector (in planning, managing and implementing research programmes; in developing, transferring and applying new know-how; in training researchers - most of whom are preferably also company employees) is still not satisfactory. Demand of companies for services provided by research institutions in higher education and the government sector is relatively modest. Despite state aids, Slovenia is relatively unsuccessful in transferring scientists with doctoral and master's degrees to the corporate sector which is reflected also in poor educational structure of employees in research organisations located in corporate sector (with less than 10% of researchers holding the doctoral degree).

The process of transition in the first half of the 1990s generally did not have positive impact on research and development or technological development of the corporate sector. In that period, namely, technology intensive products and services were developed too slowly, research and development departments in companies were being closed down and their development-innovative activities started subsiding. The process of recovering occurred in the second half of nineties. In 1994, there were only about 160 R&D units with approx 1,500 researchers in Slovene corporate sector. In 1999, the number of R&D units increased up to 273 with more 1700 researchers. Although the level of research and technological intensity of products in the period 1994-1997 increased from 4.2 to 5.9, it still dealt with products that did not require high technology and are lower priced.

The **technological gap** (measured in terms of the number of patents and the volume of investment in research and development) between Slovenia and EU countries is now much wider than the gap in GDP per capita or the gap in the share of GDP used for investment in research and development. Number of European patents per million population is 21.66, in comparison to 125 as EU average. Same gap exists in U.S patents where Slovenia has 7,05 patents per million population while EU average is 69<sup>8</sup>. International comparisons confirm significant lagging

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<sup>8</sup> Data for Slovenia: Statistical Office of the Republic of Slovenia (SORS). Data for the EU and USA: Towards a European Research Area. Key Figures 2001. Indicators for benchmarking of national research policies. European Commission, Brussels, 2000.

behind especially in corporate innovations. In Slovenia much fewer new high-tech companies, especially in manufacturing, have been established than in developed countries. Basic reasons for this lie in the process of defensive transitional restructuring, due to which companies focused on solving their short-term problems of »subsistence«. They decided for survival strategy, partly also because of the then economic policy aimed at keeping companies »alive« in order to preserve industrial peace. As we can see from increased investment of corporate sector in the recent years, gradually Slovenian business is entering the second transition stage where more attention is being paid to technological restructuring and therefore also innovation and R&D. What is needed is active response from the government policy side, where funds available to corporate R&D need to be substantially increased. Preferential tax status for business R&D expenditures has not been assured.

Slovenia lags behind also in modernising its research infrastructure. Modest amounts have been allocated for co-financing the acquisition of research equipment, so that now it is relatively obsolete. Modern equipment, though, is of key importance for Slovenia's successful international positioning and for increasing the mobility of researchers (in both directions).

#### BOX 3: YOUNG RESEARCHERS

The project »Young Researchers« is one of the most successful incentives aimed at increasing the number of personnel able to conduct research. Thanks to this project approximately 250 new young researchers got jobs every year and thus the average age of researchers decreased by more than 5 years. Currently however, the number of young researchers in academic institutions has reached the maximum level, but the project has failed to promote their employment in the corporate sector – relatively few holders of doctoral and master's degrees are taken on by companies. So far the project has included 4,351 young researchers of whom 1,255 completed doctoral studies, 1,214<sup>9</sup> master's studies and 45 post-graduate specialist training

In the European Union's **5<sup>th</sup> Framework Programme** (1988-2002), Slovenia has been relatively successful, also thanks to the experience of Slovene researchers in international projects, promotional and organisational preparation by the Ministry of Science and Technology and the fact that the »brain drain« problem in Slovenia is not severe. Moreover, Slovenia actively participates in EUREKA and several other multilateral and bilateral programmes. Nevertheless, for companies without their own research and development departments it is very difficult to get involved in research and development projects co-financed by the EU (e.g. FP 5), which is why Slovenia is still not able to exploit all possibilities and advantages brought about by the process of its accession to the EU.

To achieve the goal of rapid economic growth, the National Development Plan 2001-2006 emphasizes the need to enforce the technology and innovativeness as one of the key factors of competitive advantages of companies in the global competition. Within the first developmental priority **Promotion of the corporate sector and competitiveness** specific measures and programmes are proposed to promote:

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<sup>9</sup> The number of master's degree holders does not include those who started with their doctoral studies as soon as they have obtained their master's degrees.

- Increasing investment in applicative research and innovations, higher concentration of investment in priority research and development as well as inter-ministerial co-operation supporting development goals of the Republic of Slovenia;
  - Improving co-operation and transfer of knowledge and qualified staff between the corporate sector, universities and research institutions by providing a more simulative environment for research and technological development;
  - Better use of company development instruments (incubators, technology parks, risk capital);
- Strengthening international cooperation in research and development, with particular emphasis on integration of SMEs in the EU Framework Programmes, increasing the mobility of researchers (in both directions) and activating scientific and research potential of the Slovenes living abroad.

The new **Act on Research and Development Activities** will be, together with the new **National Research Programme**, based on the above premises and is expected to stimulate considerably the contribution of the scientific research and development to the economic and social development of Slovenia.

## 6. REGIONAL DEVELOPMENT AND AGRICULTURE

One of the important characteristics and at the same time a particular strength in socio-economic development of Slovenia is its polycentric regional development. The population is relatively proportionately spread all over the country, with only slightly more than one half living in towns, despite the fact that 65% of the territory is urbanised. Nevertheless, there are differences between individual regions in terms of their socio-economic development.

**Central Slovenia region** with the capital Ljubljana is the most developed part of the country and differs from the rest of Slovenia by a number of superior features. Demographic conditions are more favourable with population growth in 1981-2000 being one time faster than the national average. This was mainly due to the immigration of relatively young labour force, which also contributes to below average population ageing index. Economic potential and corporate sector's performance are higher, which is reflected in higher GDP per capita, higher productivity and profitability of the corporate sector. The Central Slovenia region also has better infrastructure, better schooling system and more opportunities of further education, better geostrategic position and greater human capital. The population is more educated than the average; the share of university graduates in the employed is bigger as well as the share of students per 1,000 inhabitants. The registered unemployment rate is 4 percentage points lower than in the rest of Slovenia. Another advantage of the Central Slovenia region is its social capital, reflected in lively corporate activity, formal and informal networks.

Additionally, there are considerable development disparities within **the rest of Slovenia**. Table shows especially high differences between the less developed Eastern and the Western part in the unemployment rate, which is 9.0% in the Western and 15.1% in the Eastern part, and in the share of population living in the areas with special development needs, which is as much as 83.1% in the Eastern part and only 17.6% in the Western part.

**Table 4: Selected social and economic indicators at regional level**

INDICATOR	Central Slovenia	West Slovenia	East Slovenia	SLOVENIA
Distribution of population, 30 June 2000 (%)	24.6	23.7	51.7	100
Density, 30 June 2000 (km <sup>2</sup> )	192	68	96	98
Population ageing index (30 June 2000)	85	93.7	86.4	88
Gross domestic products per capita; 1997-99; in PPS	18077	13148	11697	13600
GDP per capita (PPP) in % of European union-15 average, 1997-1999	89	65	58	67
GDP per capita (PPP) in % of Slovenian average, 1995-1997	133	97	86	100
Registered unemployment rate, 2000 (%)	9.2	9.0	15.1	12.2
Share of young people in unemployed, 2000 (%)	20.8	22.3	24.5	23.4
Share of unemployed with 1st or 2nd educational level in unemployed, 1999 (%)	44.1	45.1	48.7	47.2
Share of women in unemployed, 1999 (%)	44.1	45.1	48.7	47.2
Share of population in areas with special development needs (in %)	6.0	17.6	83.1	48.7

Source: Statistical Office of the Republic of Slovenia, Agency for Payments, Employment Service of Slovenia, calculations National Agency for Regional Development

**Rural areas** cover almost three quarters of the Slovene territory. They are mostly situated near the border, these are usually mountainous regions with poor accessibility, there are not many jobs there, the percentage of rural population is high, educational structure is weak and the number of daily migrants is high. In addition to forests, agriculture is an important factor in the formation of landscape in these areas. Rural areas with limited accessibility are undergoing a process of marked depopulation and de-ruralisation. Settlements and cultural landscape are intensively transforming, as a consequence of changed social conditions and socio-economic conditions in agriculture. The traditional forms of rural life are mostly disappearing, and many of their peculiarities are in the process of transformation, i.e. modernisation. The urban way of life brought about a series of changes into the appearance of an area, its organisation, utility infrastructure and environmental impacts as well as caused new conflicts that were inexistent in the traditional rural life.

**Urban areas** are the centres of social, cultural and economic life populated by up to 80% of the entire population of the country. A strong concentration of population and activities is recorded in about 200 settlements. In 1996, 45.6% of the population lived in settlements with over 3,000 inhabitants, which was 1.1% of all settlements. The other half of the population is dispersed in the outskirts of greater towns and cities as well in the countryside, where 71% of all residential buildings is located. Construction of buildings is extremely dispersed, since in 68% of the populated areas the density is 1-2 building per ha.

The urban regions of Ljubljana and Maribor record the highest concentration of jobs, various activities, services and environmental pollution. The population density is increasing mostly in

plains, urban areas are expanding and mountainous areas, which are difficult to access, are being abandoned. People mainly migrate to the surroundings of big towns and cities where the prices of building land are lower than in city centres. The result is increased population density in small settlements in the outskirts (sub-urbanisation), particularly where transport connections (roads) are good.

Recently, migrations from city centres have been noticed; old city cores are being abandoned, while trade and small business are moving into big shopping centres at the outskirts. There are several reasons for this - most often limited access (for customers and delivery), high rents for business premises, deterioration of buildings (the renovation and revitalisation of city centres is too slow or inadequate and does not satisfy the requirement of modern business activities) and often lacking financial resources for a complete renovation.

Natural conditions for **agriculture** are relatively unfavourable, which limits production possibilities, decreases productivity and increases productivity costs. The Agricultural Reform Plan is divided in three parts: agricultural structures, food processing industry and sustainable rural development. The part of the plan covering agricultural structures fosters the formation of economically stronger and developmentally more promising agricultural holdings. The part covering food processing industry includes measures for the modernisation of this industry, whilst that covering sustainable rural development envisages substantial changes in spatial planning, support to economic diversification and innovative measures for the development of agricultural holdings. The production function of agriculture in the area is prioritised, whilst through additional goals, the spatial, social, ecological and cultural functions of agriculture are also stimulated.

The current **level of educational attainment of persons employed on farms** is very worrying and represents a great barrier to both restructuring of Slovene agriculture and comprehensive rural development. According to the last agricultural census, 84% of farm owners farm on the basis of their own practical experience and only 5.4% have some education in agriculture. Young generations do not see farming as a promising occupation and they are increasingly reluctant to decide for it. Due to this, enrolment into agricultural schools is declining. Consequently, secondary vocational and tertiary agricultural educational programmes are less and less attractive to the young.

The NDP therefore proposes the following measures:

- (a) *Increasing the education level of persons employed on farms;*
- (b) *Increasing the share of people involved in life-long learning and continuing education in rural areas;*
- (c) *Putting modern scientific findings and new technologies into practice in agriculture and food-processing.*

In order to fulfil general and specific needs of the rural population it is necessary within the concept of life-long learning to encourage adults in rural areas and give them opportunities for training and perfecting their skills in agriculture and rural development, for improving their functional skills and their ability in performing numerous ancillary activities.

The intent of putting latest scientific findings into practice should serve as a basis for and adequate transfer of know-how. The same is true of training of farmers, which is carried out by the Chamber of Agriculture and Forestry and other institutions.

#### **BOX 4: E-VILLAGE PROJECT**

In the framework of guidelines for crossing the dividing line/bridging the gap, in 2002 and 2003 funds will be allocated to co-financing the implementation of a pilot project of the municipality of Dobrovnik, according to which informatisation will be introduced into the underdeveloped village by means of wideband multimedia communications and pertaining information society applications.

Goals of the pilot project are:

- Forming a model of e-community, selecting services, contents and virtual communities of interests;
- Selecting and implementing the most appropriate infrastructural solution for less developed area;
- Monitoring, managing and analysing e-community project efficiency and performance;
- In 2002 the infrastructure will be set up and e-community established.

Goals of the pilot project in 2003 are:

- Faster economic growth of the municipality of Dobrovnik;
- Creating new jobs;
- Improving performance of the existing commercial entities and creation of new ones;
- (Indicators: GDP per capita, no. of employees in comparison with the Slovene average, positive change of life style).

In the 2004-2006 period the project will be extended so as to cover also the introduction of informatisation into other villages in the Republic of Slovenia, which will be, based on the analysis and results of the pilot project, considered adequate for improving economic and general conditions of living. Co-financing of such projects is expected to amount to SIT 300 million annually. After Slovenia joins the EU, it will be possible to co-finance this measure also by funds from the ERDF (the European Regional Development Fund).

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## Standard 15-variable Scorecards - Slovenia

<b>Performance indicators</b>	
Average annual GDP growth 1990-2000, %	1.3
Human development index, 1998	0.864
<b>Economic Incentives</b>	
Gross capital formation as a % of GDP (annual average 1990-2000)	22.2
Tariff and non-tariff barriers	-
<b>Institutional Regime</b>	
Rule of law	-
Control of corruption	-
<b>Innovation System</b>	
FDI as % of GDP (annual average 1993 – 2000)	1.1
Total expenditure for R&D as % of GNI (annual average 1993 – 1999) <sup>1</sup>	1.6
High technology exports as % of manufactured exports	-
<b>Education and Human Resources</b>	
Adult literacy rate, 1998, %	99.6
Secondary enrollment, as a percentage of the population aged 15-18, 1997, %	89.9
Tertiary enrollment <sup>2</sup> , as a percentage of the population aged 19-23, 1998, %	50.7
<b>Information Infrastructure</b>	
Telephone per 1,000 persons, 2000 (telephone mainlines + mobile phones)	978
Computers per 1,000 persons, 2000	273
Internet hosts per 10,000 persons, 2000	109

Source: Institute of Macroeconomic Analysis and Development - IMAD, Statistical Office of Slovenia - SORS, Bank of Slovenia - BS, RIS – Internet Use in Slovenia.

Note: <sup>1</sup> data are overestimated for the following period: 1993 – 1995 (1993 – 1.60% of GNI, 1994 – 1.75, 1995 – 1.68). R&D statistical survey based on the Frascati methodology was introduced in 1993. As it was shown by a data quality control analysis undertaken in 1996, in the first three years of this survey some higher education organisations counted their teachers as full-time researchers; consequently, their wages and other related material costs were reported as R&D expenditure. Annual average of this indicator for the period 1996-1999 is therefore a more adequate information, its value being 1,46 % of GNI.

<sup>2</sup> excluding postgraduate students.